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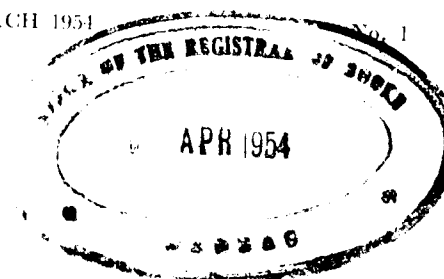
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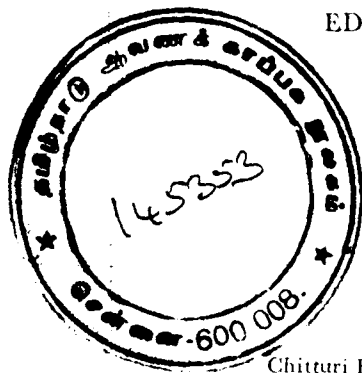
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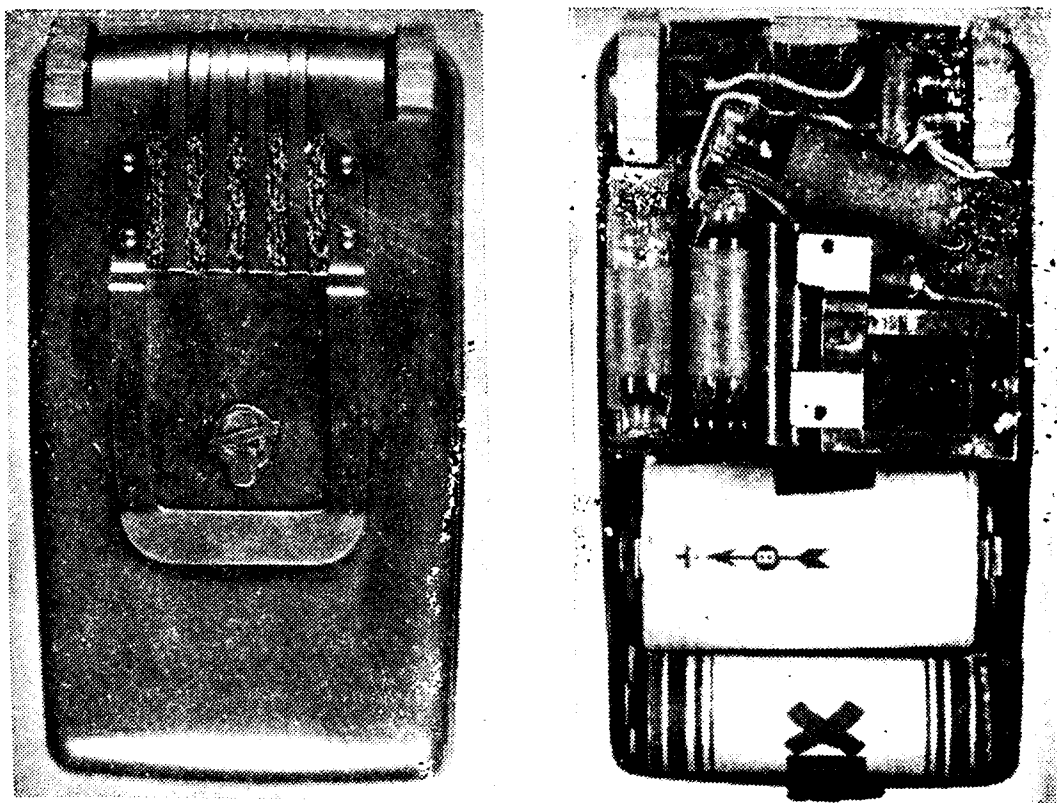
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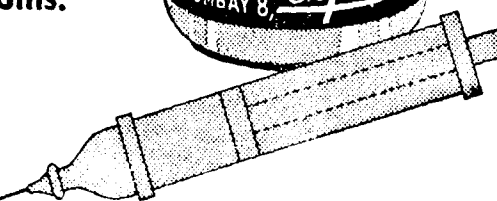
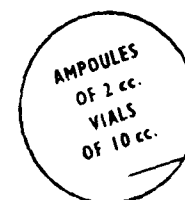
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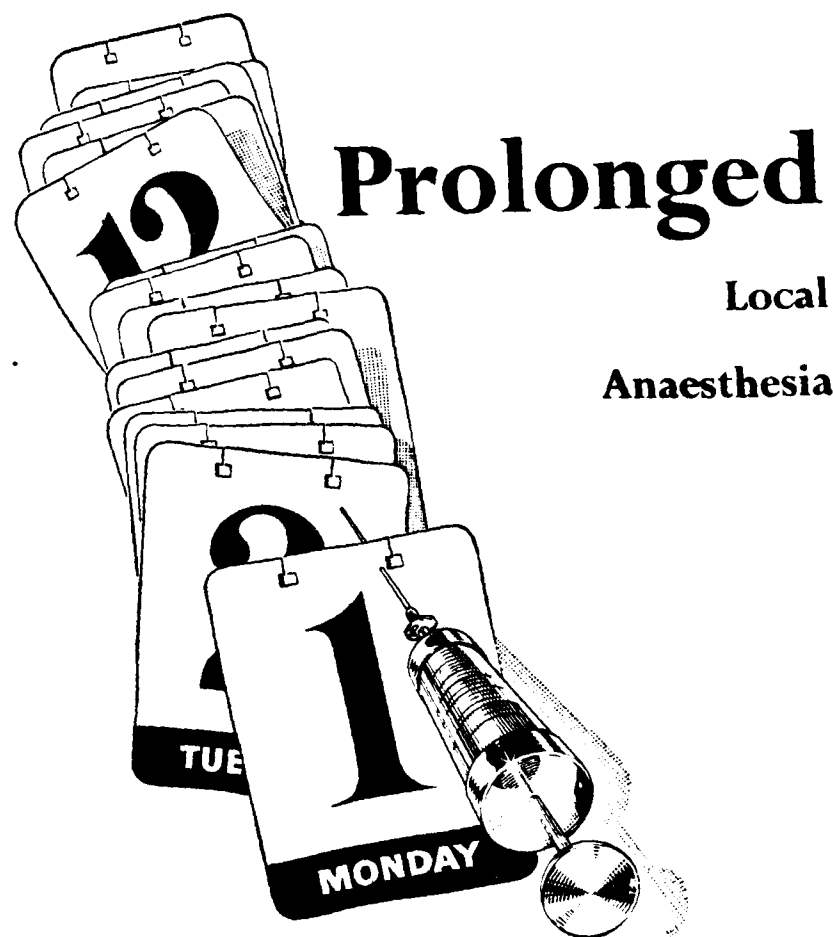
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No 1

Role of exfoliative cytology in early diagnosis of cancer in Oto-Rhino-Laryngology service*

BY

R. DUTTA-CHAUDHURI, H. ROY & B. SEN GUPTA

(From the Department of Pathology and Oto-Rhino-Laryngology Service of Chittaranjan Cancer Hospital, Calcutta).

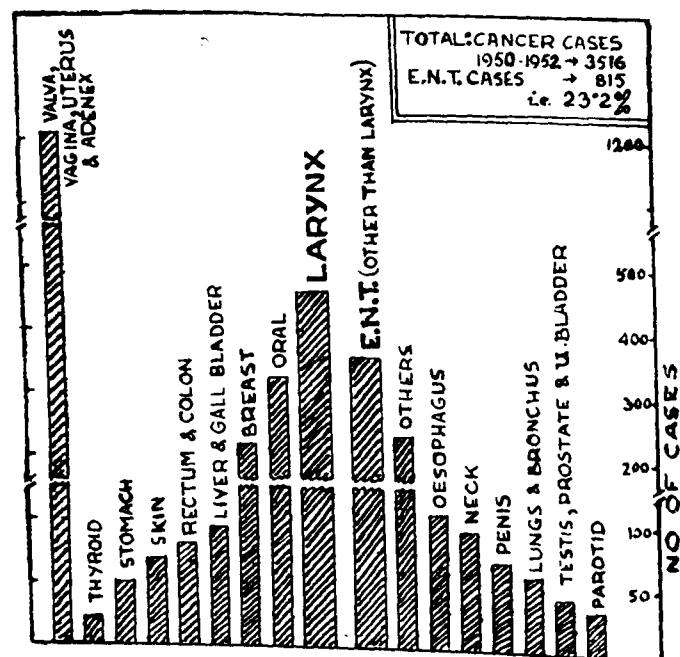
Exfoliative cytology, although not actually originated by him has been brought to a highly developed state by George Papanicolaou. Papanicolaou's technique has its application in cancer of uterus¹. Positive results lead to the discovery of unsuspected cancers including both the infiltrative and 'in situ' varieties. This method has also proved efficient in diagnosing cancer cells in female genital system² other than uterus, central nervous system lesions³, sputum⁴, bronchial secretion⁵, urine⁶, gastric content⁷, duodenal content⁸, and other secretions and excretions including prostatic⁹ fluid, discharge from the nipple¹⁰, Colon and rectum¹¹, pleural and peritoneal fluids¹².

In ear, nose and throat practice sometimes biopsy becomes a difficult problem. In nose and larynx cases it requires more experienced person to do so, but swab can be taken by a less experienced member of the staff. Throat of some persons are so much irritable that they dislike to expose themselves for the length of time, required to take a biopsy. In some of the undifferentiated type of cancer prebiopsy radiation is generally advocated as a procedure of safeguard as the biopsy procedure

*This paper was presented on the December, 23rd, 1953 at the Sixth Annual Conference of the Association of Otolaryngologists of India at Hyderabad-Deccan.

may be harmful to the patient by helping metastasis. Swab procedure will be of great help in such cases. Some of the patients are so nervous that the very name of the biopsy make them frightened. Swab procedure will be of definite help in these cases also. This procedure can differentiate carcinomatous from non-carcinomatous lesion in a very short period of time. Incidence of throat cases in Chittaranjan Cancer Hospital, Calcutta, stands second in order of frequency (Chart I). Considering these facts, as well as the fact that published information concerning exfoliative cytology in ear, nose and throat practice is non-existent as evidenced by the literature available to us, we began this work in the later part of 1951.

CHART I.



Methods and Materials.—A metallic swab holder was used with small amount of cotton wool and smears were taken gently without rubbing the suspicious area. Mainly laryngeal swab with indirect laryngoscopy and double bent swab with P.N.S. mirror was used in our cases. The swab was dubbed on the albuminised slide and not rubbed as in smear for bacteriological examination. The slides were then fixed immediately in ether alcohol mixture. Staining was done by Papanicolaou's technique.

Two slides of each and every case were studied. Two of us (H.R. and R. D-C.) devoted at least half an hour each on every slide to come to a conclusion.

The criteria upon which diagnosis was made is shown in fig. 1, 2, and 3. fig. 1 represents the picture of a normal smear; fig. 2 that of cancer cells; and fig. 3 that of an inflammatory (in this particular case tuberculosis) one. The criteria of malignancy are taken to be the presence of hyperchromatosis, anisocytosis, and anisonucleosis, in cells. The nuclear chromatin is arranged in thick irregular and deeply stained bundles. The nucleoli are much larger than normal; they are sometimes multiple and stand out as purple or pink dots within the nucleus.

Although single cells were often thought to be pathognomonic, positive diagnosis were based on the groups of cells.

It may be mentioned here that majority of these cases were easily diagnosable by clinical examinations and biopsy. But with the objects of gaining experience and for comparison between the cytology of the smears and that of the histological sections it was thought desirable to examine smears from most of the cases attending out patients' department irrespective of stages of the disease. Patients with hoarseness of voice as subjective symptom and only oedema in the mucous membrane as an objective sign in absence of other findings were studied as a rule.

In all 364 cases were studied amongst which 5 were of ear, 9 of nasopharynx, 125 of pharynx and 225 of larynx.

Findings and Observations.—We got three kinds of results:—

- (1) Positive.
- (2) Cells highly suspicious but not pathognomonic for malignancy.
- (3) Negative.

The findings are shown in the accompanying tables.

TABLE I.

Ear :	Total number studied :	5 cases.
	Both smear and biopsy positive	5 i.e. 100% accuracy.
Nasopharynx :	Total number studied :	9 cases.
	Both smear and biopsy positive	9 i.e. 100% accuracy.

Pharynx: Total number studied: 125 cases.
 Both smear and biopsy positive in usual course ... 124
 Smear negative but biopsy positive in usual course ... 1
 On subsequent review ... none.
 At first instance ... 92%
 Finally ... 100% accuracy.

TABLE II.

Larynx: Total number studied 225 cases.
 Both smear and biopsy positive in usual course ... 182 i.e. 80.8%
 Smear negative but biopsy positive in usual course ... 9
 On subsequent review (3 showed smear positive) hence ... 6 i.e. 2.6%
 Smear highly suspicious but biopsy positive ... 2 i.e. 0.88%
 Subsequent review result same.
 Smear highly suspicious but biopsy negative for carcinoma ... 2 i.e. 0.88% (diagnosis tuberculous).
 Smear positive but biopsy negative (in usual course) ... 30
 Biopsy showed tuberculous lesion i.e. false positive ... 2
 2nd biopsy positive ... 23
 3rd biopsy positive ... 5 i.e. 93.3%
 Finally (taking all cases together) ... 94.2% accuracy.

TABLE III.

Total number of cases studied

364

results obtained
(after final consideration)

Accuracy 96.78%	False positive 0.54%	False negative 1.6%	Indifferent 1.08%
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EXFOLIATIVE CYTOLOGY IN EARLY DIAGNOSIS OF CANCER



(1) Fig. 1. Shows picture of a normal throat smear. (2) Fig. 2. Shows picture of a group of malignant cells. (3) Fig. 3. Shows the picture of an inflammatory smear (in this particular case T.B.). (4) Fig. 4. Photograph of case No. 2.

FOLLOWING INTERESTING CASE NOTES MAY BE CITED :

Case No. 1.—H. K. T. aged 60 years (Regd. No. 53/953) a Hindu male came to the Chittaranjan Cancer Hospital on 23—4—53, with the following complaints :—

- (1) Slight difficulty in swallowing and occasional pain in the left side of the neck—3 months.
- (2) Occasional hoarseness of voice—7 days.

On examination paresis of the left half of the soft palate was found. Swab was taken from the larynx as well as from both the tonsillar fossae. Swab from the right tonsillar fossae including the pillars was positive. As there was no clinical positive finding in the throat no biopsy was tried. The patient was kept under observation. The patient came again on 18—6—53 (about 2 months after the 1st visit) with persistent hoarseness of voice. On examination there was a small indurated area in the lateral wall of the oropharynx just behind the left posterior pillar. There was also oedema of the left aryepiglottic fold ; and the left pyriform fossa did not open up. A small hard gland was palpable on the left side of the neck. Biopsy was taken from the indurated area and epidermoid carcinoma was found on examination.

Case No. 2.—B. M. aged 60 years (Regd. No. 53/1041) (Photo attached) came to the hospital on May 7th 1953 with the complaint of difficulty in swallowing for 4 months. On examination right pyriform fossa was found to be full and vocal cords moving normally. No growth was visible in the throat. A hard lymph node 5 c.m. × 5 c.m. fixed to the deeper structure was found in the neck, right side. Smear was taken from the pyriform fossa which gave positive result. In view of the positive finding in the smear biopsy was taken from the right pyriform fossa on the 11th May, 1953 and the report came out to be epidermoid carcinoma.

Case No. 3.—K. G. a Hindu housewife of 45 years of age was referred to one of us (R. D-G.) by Dr. S. Mukherji of R. G. Kar Medical College, Calcutta on 15—6—52 with suspicion of some growth in the external ear cavity, her complaints being serosanguinous discharge through the right ear and pain in the right temporal region. The smear from the discharge was examined by this technique and the smear was found to be positive for malignant cells ; after this report on close examination of the

ear cavity a small ulcer was seen in the wall of the external ear which on biopsy proved to be squamous cell carcinoma.

Case No. 4.—Mrs. O, housewife of 50 years who consulted Dr. S. Roy, M.Sc., M.B., F.R.C.S., D.L.O., etc. on 17-10-53 with complaints of serosanguinous discharge and pain in the nose left side. Dr. Roy made a smear from the nasal swab and sent to one of us (R. D.C.) which was found to be positive. This finding was subsequently corroborated by findings of physical examinations.

Discussion.—It is evident from the accompanying table No. 1 that all the ear and nasopharyngeal cases could be diagnosed successfully by this method. But no definite opinion should be formed from this group of small number of cases. However, it seems that this method of diagnosis in aural and nasopharyngeal carcinoma will be of great help in clinical practice.

In one case out of 125 cases of pharynx (0.8%) Table I), smear gave negative result though biopsy proved positive.

Malignant cells which were missed on the first scrutiny could be detected on subsequent review resulting in cent per cent accuracy.

Larynx cases (Table II) gave us varieties of results. 225 cases of larynx were studied. Four cases (1.7%) on smear examination gave indifferent result the report being 'cells highly suspicious but not sufficiently pathognomonic for malignancy'. On biopsy examination two of them were found to be tuberculous lesion and two epidermoid carcinoma. The smear slides could not reveal any malignant cell in any one of them even after repeated review.

Nine cases (4%) gave negative reading though biopsy showed positive. On subsequent review of the smear slides three smears showed positive cells but six remaining cases could not reveal any. These six cases had big fungating growth and were clinically definite cases of carcinoma. It seems that necrotic and fungating growths exfoliate very small number of cells. Swab might have missed those and it might also be the fact that only necrotic tissue came out and baffled the diagnosis.

Though thirty cases (13.3%) showed smear positive, 28 on first time biopsy proved negative and two proved tuberculous. Twenty-three gave positive results on second time biopsy. Five

proved to be positive on third time biopsy. These findings show that tuberculous affection of larynx brings out a problem for smear diagnosis as they sometimes give suspicious results. This fact has been observed by other workers¹ also. This might be due to the fact that groups of epitheloid cells may resemble epidermoid or squamous cells in a smear. For tuberculosis the biopsy seems to be the method of choice. However, it seems that a great expert hand is necessary to take the biopsy from the proper site of affection. Thus the smear method seems to be a method of choice in diagnosis especially in early cases.

Another fact was observed that patients sometimes come with a lump in the neck, apparently without any growth in the throat region, but on close examination some induration or oedema is found in some places. Smear method in such cases sometimes give a positive finding. These kind of cases are under investigation, which will be published in due course.

Recently Altman¹⁴, Ginsberg and Stout of New York have drawn attention to the problem of intraepithelial cancer (Cancer in Situ) of the larynx. Symptoms particularly the hoarseness of voice are the same as that of invasive carcinoma and same also is the age period. Non-invasive tumours are as a rule very small which may sometimes escape detection. On laryngoscopic examination they may appear diffuse grayish, whitish or reddish thickening of the vocal cord with a smooth or slightly granular surface. In some instances there may be oedema. Movement of the vocal cord is not impaired. The microscopic changes in many cases are more extensive than clinically visible changes. The histological changes in the larynx are very similar to those of the cervix uteri and other mucous membranes. In our opinion this smear method will be of much help in this kind of cases just as being done in situ of cervix uteri.¹ As we have had no surgical specimen to study we could not establish this fact; but it is evident from our investigations that the method is much more promising in diagnosing carcinoma at its earliest stage than more clinically vivid ones.

Summary and Conclusion.—Exfoliative cytology has got a definite place in diagnosing, rather screening the ear, nose and throat patients of carcinoma age. Good results are obtained only by studying well stained slides by proper technique of taking swabs and proper way of making the smears and immediate fixation. Number of exfoliated cells depends on the proliferative activity of the tissue as well as on the size of the lesion.

Malignant lesion at an early stage has got very small area. This is why cancer cell may not be found easily but have to be searched for painstakingly. Some advanced and clinically well established growths exfoliate to a very low degree. This is why malignant cells may escape notice in smears. An expert cytopathologist is necessary to give opinion in this technique (In this connection it may be mentioned here that one of us (R. D-C) is trained with Dr. Papanicolaou in New York.) Whenever a positive smear is obtained the patient should be followed up closely. A negative smear should not give one a feeling of security as it does not exclude malignancy. Whenever possible smear technique should be followed by the biopsy procedure to reach a perfect diagnosis.

In conclusion this technique is recommended for screening ear, nose and throat patients of cancer age. It seems that it will be a promising method in diagnosing intra-epithelial carcinoma in throat region as well as in finding out the primary focus in the throat of cases with lump-in-neck which are very often thought to be secondaries of some unknown growth in throat.

Acknowledgments.—Our thanks are due to Dr. Subodh Mitra, Director, Chittaranjan Cancer Hospital for permission to publish this paper. Our thanks are also due to Dr. S. Roy, consultant oto-rhino-laryngologist of Chittaranjan Cancer Hospital for his keen interest in the investigation and giving permission to publish the case No. 4. Our thanks are also due to Dr. Sivapada Mookerjee for the case No. 3.

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Traumatic strictures of the esophagus

BY

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The esophagus, the highway of the alimentary tract has been studied by eminent anatomists and is described as commencing at 6th cervical vertebra, at the lower end of the hypopharynx, and descends through the neck lying behind the trachea, and in front of the vertebral column. At the entrance of the thorax, it projects slightly beyond the left side of the trachea, and opposite the 5th dorsal vertebrae, is crossed, anteriorly, by the left bronchus. Below that point the esophagus lies behind the pericardium, and in front of the vertebral column, but it curves forwards, away from the latter, as it leaves the thorax, passing through the diaphragm opposite the 10th dorsal vertebrae, and its abdominal part, which is only $\frac{1}{2}$ an inch, ends at the cardiac orifice of the stomach.

To the esophagoscopist, in addition to this knowledge, it is essential to know the endoscopic anatomy as seen through the esophagoscope, in the living, moving esophagus, namely that the esophagus is a long, lose resilient bag pinched tightly and constantly shut, at two points, by muscular mechanism, external to the esophagus. A thorough conception of the pinching shut, is absolutely necessary to comprehend esophagoscopy images, and prevent mortality, occasioned by the introduction of the esophagoscope. The cricopharyngeal pinching, at the bottom of the hypopharynx, due to the tonic contraction of the cricopharyngeal muscles, keeps constantly closed the upper gate, leading into the esophagus, which has been called by Jackson as the gate of tears of those, inexperienced in Peroral Endoscopy. The lower pinching shut, is not at the cardia, but at the diaphragm, where the diaphragmatic muscular system maintains a tightly shut gate at the hiatus esophagus. Besides, it is useful to the esophagoscopist, to remember, that the esophagus has no fixed position; that it is freely movable; that it occupies whatever space among closely surrounding viscera; that the thoracic portion is collapsed but opens from negative intra-thoracic pressure on inspiration; that the walls are exceedingly thin and delicate and that the knowledge of the average length of the esophagus from the incisor teeth, at different ages to the various anatomical landmarks, namely the cricopharyngeus, the aortic arch, the left bronchus, the hiatus and the cardia, will always avert catastrophe. This tubular structure so

deeply placed, is liable to be traumatised either from without, such as by bullet or shrapnel wounds, incised wounds, such as stab wounds or cut throats, or from within, by faulty instrumentation, foreign bodies, corrosive burns. It is the purpose of this paper to review the sequelae and treatment of these injuries in the cases admitted to the E. N. T. Dept., of the K. E. M. Hospital in the past 4 years, and to elucidate the line of treatment followed in these cases.

Regarding the exterior wounds we have had no experience of bullets or shrapnel wounds, and even in the worst cases of cut throats, treated in our Dept., the cervical esophagus was found always to have escaped injury; so also in stab wounds of the lower neck. In only one case where the injury was caused by an exploding Coca-Cola bottle being opened by the teeth, did we find the trachea and the esophagus severed upto the pre-vertebral muscles. In this case exploration of the wound and suture of the esophagus and the trachea, with tracheotomy was done, and after a stormy convalescence, inspite of the nasal feeding tube, salivary fistula developed, which with prolonged rest to esophagus, by maintaining the Ryle's tube and with antibiotics subsequently healed leaving no symptoms from esophageal injury, but the patient still attends the Dept., for the planned repair to the trachea. Such a single case cannot suffice to confirm a statement that the cervical esophagus leaves no sequelae after external injury, but literature being scarce, and the knowledge that in laryngo and laryngo-esophageal surgery where it is sometimes necessary to sacrifice portions of the esophagus, careful repair leaves a well functioning asymptomatic esophagus. As for internal trauma from instrumentation the upper esophagus usually bears the brunt. Today with the use of antibiotics and by immediately introducing a Ryle's tube, thus resting the esophagus, the seriousness of this injury is reduced. In two of my cases both of which developed surgical emphysema of the lower neck after instrumentation, recovery was complete.

Regarding foreign bodies as the etiological factor in causing stricture formation, Jackson has shown that in only those cases where a sojourn of the foreign body has been for a very long period 10 to 18 years do result in stricture formation which on removal of the foreign body are recovered from, by 2 or 3 dilatations. The longest duration of impaction seen by me has been of a week's duration in 3 cases. In them the foreign body was impacted in the cricopharyngeal region and inspite of a

periesophigitis in one case, and abscess formation in the other two, removal of the mutton bone with rest to the esophagus by Ryle's tube and antibiotics, resulted in complete recovery.

The most common and injurious trauma to the esophagus is that by chemical burns and it is by very earliest and closest co-operation between the Otolaryngologist, the Pediatrician and General practitioner can the sequelae of stricture formation be averted. The incidence of these burns is much greater in our country where ignorance and carelessness together with the absence of laws like the Federal Cestic Act of America requiring the use of conspicuous poison labels on the various chemicals used for household purposes. The chemicals causing burns to the esophagus in our series of 6 cases treated, where the following

Acid Burns.	Glacial Ascectic Acid.	(1)
	Acetic	... (3)
	Nitric	... (2)
	Sulphuric	... (4)
	Hydrochloric	... (1)
	Mild Vinegar	... (1)
..	Caustic Soda	... (6) commercial lye for used soap industry.
	Not known	... (8)

Other chemicals which have also been reported to cause severe burns are lysol, phenol, iodine, etc., In our series the Caustic Soda or Lye forms a majority group. Uhde, F. T. Wison et al, report that in children these chemicals are injected accidentally through the carelessness on the part of the parents; while in adults, mostly, it is injected in an attempt of committing suicide. For fear of police persecution many of these patients seeking admission do not give correct information making it difficult to determine the accidental or suicidal nature of the injury. We however, presume that they were mostly accidental especially in the younger age group, that is, 1 to 20 years, in which group there were 17 cases. According to G. Uhde the greatest number of chemical burns occur in children and in his series of 34 patients 27 i.e. 79% were children under 10 years of age. Kernondle in 136 child patients found an incidence of 82% in the 1 to 5 years old group, and remarked in the rarity of the lesion under age of 1 year. McHenry and Clay in 52 patients with benign caustic strictures had none under 1 year; and half were under 3 years.

In our series the youngest patient was 3 years of age. There were 7 cases in the 1 to 10 years age group, 10 cases in the 10 to

20 age group, 4 cases were seen between 20 to 30 age group and 5 cases between 30 to 50 years of age.

The occurrence of chemical burns of esophagus is about equal in the two sexes,—in the younger age group. The greater number of these accidents in males under 15 years of age may be due to the fact that boys are more active and mischievous than girls, and more apt to encounter the contaminant. This was also Uhde's explanation in his report where 74% of his cases were male. On the other hand in the adult group, we find the incidence greater in males, although, in Korea the majority of patients in this group are females, who drink lye with suicidal intent. Stothers believes, that the greater number of suicidal attempts among the females, by swallowing corrosive poisons, more than, equalises, the alcohol accidents of the males.

In these cases the symptomatology depends upon the nature and amount of the chemicals swallowed, and the period at which the patient attends the hospital. Most of the cases reported here attended the hospital within 12 hours of swallowing the chemicals.

Acids such as glacial, sulphuric, hydrochloric and nitric etc., when swallowed are absorbed from the stomach, and besides causing a severe shock may be fatal. In the 11 cases where acids were swallowed shock was present in varying degrees, and in the severer burns which proved fatal, that is in 5 cases of which, 2 were of glacial acetic acid, 2 other, of hydrochloric acid, and 1 of nitric acid, death occurred within 2 hours to 5 days; and post-mortem revealed haemorrhage of the stomach, perforation of the esophagus with mediastinitis, esophago-bronchial fistula and shock.

In the cases of lye burns shock to a mild degree was present, together with the symptoms of salivation dysphagia, odinophagia, frothing at the mouth and regurgitation. These symptoms were more marked in lye burns than acids, together with the discomfort of pain and burning of the mouth, fever and dehydration. All the cases presented, varying degrees of burns of the mucous membrane, of the lips, cheeks, tip of the tongue, soft palate, pharynx and on laryngeal examination showed a positive Jackson sign namely, a frothy secretion in the pyriform sinuses. According to Vinson in acid and alkali burns of the esophagus the mouth and pharynx are always involved and cause a major portion of primary discomfort. When the acute inflammatory reaction subsides (in 1-2 weeks) the patient is able to swallow soft foods and liquids for a month or six weeks at which time contraction of the scar tissue in the esophagus increases the dysphagia, so that the patient is unable to swallow even liquids.

The pathogenesis of corrosive stricture formation of the esophagus, has been clearly described by Belinoff who divides acute corrosive esophagitis into 3 groups, the mild cases, the moderately severe cases, and the severer cases, and classifies them as first, second and third degree burns.

The first degree burns cause superficial inflammation and oedema, involving only the mucous membrane, and submucous layer. These heal without stricture or at the most, only a small eccentric membranous obstruction.

In the second degree burns the coagulation necrosis of the tissues extend more deeply to involve the muscular layers. The initial stage of hyperaemia and oedema, soon passes into ulceration, sloughing out of necrotic membrane, leaving the deeper layers exposed, and about the second week extensive granulations are seen to develop, with the formation of fibrous tissue. Increasing deposition of collagen into this tissue occurs early, and contraction of the fibrils begins; it is this later pathological change which unless prevented or controlled, ultimately narrows the esophageal lumen, with the formation of the esophageal stricture.

The third degree burns causes necrosis, of all the layers of the esophageal wall with peri-esophagitis and involvement of the mediastinal tissue. Perforation of the esophageal wall is a real danger and usually patients with severe burns of this type, quickly die of chemical intoxication and heart-failure.

Uhle describes the pathological changes, as seen endoscopically as follows:—On the first day the mucosa is swollen frequently eroded and covered with brownish exudate. On the 7th, to the 14th day, formation of granulation tissue is seen, which is replaced by fibrous tissue on the 42nd day. The tendency is for the damaged area to be eccentric. This has a bearing on the formation of the stricture and also affects its later dilatability. The nature of the reaction of the esophageal wall depends on the type of the corrosive ingested. The caustic alkalies according to Delph have a severe destructive action due to their being strongly hygroscopic having a saponifying action on lipids and a solvent action on proteins; thus causing a marked oedema, ulceration and necrosis of the tissues imparting a soft, white gelatinous appearance to them. The corrosive acids produce a dry, escharotic lesion of a grayish white or sometimes nearly black colour, with less oedema of the mucous membrane.

According to Jackson the levels most (often) and severely affected are, in order of frequency, the crossing of the left

bronchus, the cricopharyngeus and the hiatal level. In our series of the 12 cases that developed stricture formation 6 were in the middle 1/3rd, 3 in the upper 1/3rd, and the 3 at hiatal level of the esophagus. It is also our experience that in the upper esophagus the strictures are of the eccentric type, but in the mid thoracic region they tend to be short and annular while in the lower segment they are more liable to be of a tubular variety due to a deeper burn. As Abel believes, a quantity of fluid, normally, in adults, passes directly to the cardiac sphincter, where it may be held for a time by reflex spasm, thus permitting deeper burns. Multiple strictures are said to occur in 30 to 40% of cases. In our series only 2 of the 12 cases developed multiple strictures. The strictures when formed is paler than the surrounding mucosa and the scar may form a ridge. The esophagus is often dilated above, and there may be sacculation or diverticulae together with a certain amount of regional esophagitis proximal to the scar.

There is a great diversity of opinion, as to the method of treatment of esophageal burns and stricture. Each esophageal burn is a problem *per se*, and accordingly there is some variation in the treatment. Nevertheless, there should be a standard course of action to be followed in each burn, in order to prevent atresia and all its pitious sequelae.

The routine followed in our department for these burns consists in :

(1) Neutralising the corrosive agent: white of an egg bicarb solution, followed by small doses of olive oil.

(2) Treating the shock, dehydration by intravenous glucose saline and in severer cases, blood transfusion, and the infection by antibiotics e.g., sulphanamides, penicillin, streptomycin, and terramycin.

(3) As soon as the initial discomfort, and in some cases the fever subsides, that is usually between 7 to 10 days; a barium swallow under fluoroscopy is done, and X-Ray plates are taken. It is well to remember here, that very thick barium solution should not be used in young children, as it very often causes complete obstruction of the stricture, and in them 4% iodised poppy-seed oil preferred.

(4) Having located the stricture and studied the extent, esophagoscopy is done, and under direct vision a small bougie is used to detect the presence of any small pockets, and also notice any reaction about the scar, namely granulation.

Heatly, draws our attention to the well known intolerance of the esophagus to all surgical manipulations, and reminds us, that, thin wall separate its infected contents, from, the mediastinal spaces, yet, with care and gentleness this method is safe and preferred by us to that of Salzer, of passing mercury filled bougies, or lead shots bougies blindly, without force, or under the fluoroscope; or the Plummer Vinson's method of getting the patient to swallow 4 yds., of twisted silk as soon as possible, and later using this thread, which gets anchored in the lower intestines, as a guide, for dilatation with olive tipped metal bougies.

Hoag passes a Levine deudonal tube before the formation of stricture, or through an early stricture, after lye burns. Stiffening with stillets, when difficulties experienced in passing the tube or guiding it along a swallowed twisted silk, and believes, that the constant presence of the Levine tube, has a slow dilating effect on the stricture; so that the tissue reaction is minimum, as opposed to rapid dilatation. We have utilised this principal in our cases where it was possible to pass a small size esophageal bougie using the Rile's feeding tube in strictures of the middle and lower 1/3rd, while in the cases of the upper 1/3rd, a fine rubber catheter, size 8 or 9 F. was passed beyond the stricture and left in.

One cannot be dogmatic regarding the necessity of gastrostomy and although Hoag is averse to it, and thoracic surgeons like Elise, and T. E. Wilson have shown that esophageal surgery is more difficult when a gastrostomy has been done. Gastrostomy delays the commencement of the dilatation of stricture, as the patient improving in the general condition through stomach feeding is apt to be forgotten during the period, when the stricture formation could be avoided. In one of our cases where the scar was dense it was not possible to dilate on 2 attempts, gastrostomy had to be done and after 2 weeks, peroral dilatation was commenced. It is only, if the scar is quite short and dilates readily, can gastrostomy be avoided. Tucker in 1924 advised retrograde dilatation in cases where gastrostomy was done, by using his special rubber bougies, which taper at each end and to which, a silk loop is incorporated at each end, on the principal, that traction is much safer in dilating a stricture than pulsion, that the esophagus below the stricture is tubular, while, the part above is ballooned and shows a reaction of recent burns. If this method is to be used, a gastrostomy should be made through the left rectus, and nearer the cardia, I have had the occasion of treating esophageal strictures by this method,

which was the method of choice, in children suffering from lye burns, at Johns Hospital, Baltimore, and found, it required a shorter period of hospitalization. As dilatation was commenced 2 weeks after gastrostomy and for the first 2 weeks it was done daily, and on reaching size 20 F, dilatation was done twice weekly. At this period the child was able to take good amount of nourishment by mouth and was discharged, and attended the O. P. D. for further treatment.

For want of these bougies it has not been possible for us to use this treatment in our department.

In the 12 cases which inspite of the preliminary treatment went into stricture formation, peroral esophagoscopy dilations were done twice a week, using Jackson's gum elastic esophageal bougies, the criteria for increasing the size of the bougies at the next dilatation was absence of bleeding, discomfort, or pain, or fever after the dilatation.

As the size of the bougies increase 18F dilatations were done once a week, and at this stage it was also possible to discharge the patients, and ask them to attend the O. P. D. for further dilatations. At this stage too, the patient is able to take nourishment by mouth. The total period of hospitalization required was from 3 months to 1 year. The dilatations were carried out in the O. P. D. at weekly interval for 6 months, then once a fortnight, for a year. Of the 12 cases, 4 are still attending the O. P. D. for regular dilatations. In 3 cases after a period of 1½ year the treatment was stopped, as barium swallow showed normal functioning esophagus. The patients were asked to report, if the symptoms of dysphagia set in, and one of the cases again returned for dilatations. Of the other cases no records are available, as the patient did not attend the department for follow up.

We are using in the tubular strictures of the lower 1 3rd, full length gum elastic bougies so kindly lent to the department, by Dr. S. G. Joshi, and we find that these bougies, lying within the entire length of the stricture or strictures dilates the entire length at the same time. I am showing one of the bougies here.

McKinney after unusually extensive experience has said, "Once a lye stricture, always a lye stricture, and I do not believe that it is ever really cured." For this very reason in those cases where the stricture easily accommodates a 28 to 30 F. bougie we pass a Hurst mercury filled bougie and observe under Fluoroscopy, its passage into the stomach, and advise the patient to purchase one of these and instruct him to pass it himself, whenever he should feel the slightest difficulty in swallowing.

Following the experience of Norman Rosenberg and Philip Kunderman in the prevention of lye stricture by the use of Cortisone in animal experimentations, in one case a boy of 13 admitted for lye burns and after the preliminary routine treatment and the passage of the feeding tube, cortisone was given; 25 mgm. 6 hourly, for 4 days, together with streptomycin and penicillin. On removal of the tube on the 10th day, barium swallow showed a normally functioning esophagus. The boy has been asked to attend the dept., for further follow up. Various complications have been described in the treatment of esophageal strictures; in our series, in one case, where, inspite of the feeding tube being passed on the 5th, day, the patient was found to be sinking and esophagoscopy was done on the 12th day, and a fistula was found on the lower end of the esophagus with a mediastinitis confirmed by X-Rays. The patient expired on the 14th day and post-mortem revealed perforation, through the strictured area with mediastinitis and sub-phrenic abscess. In another case also, a tubular stricture of the mid thoracic region of the esophagus, which was being dilated for 8 months by the peroral route, but the stricture was found to be fibrous and showed no improvement on repeated barium swallow examinations under fluoroscopy. The patient was transferred to the surgical side where an esophago-gastrostomy was done. The patient succumbed on the 3rd day.

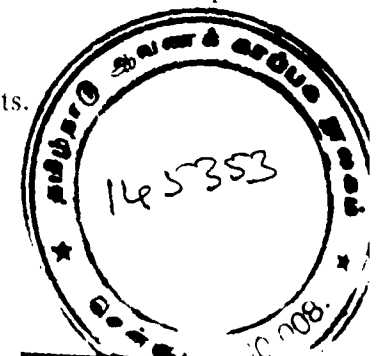
The results of our experience in traumatic strictures of the esophagus may be summarised, that, in the external trauma we have had no stricture formation nor from injuries from foreign bodies.

In the group of corrosive burns of the esophagus 26 cases were treated in our department from 1950 to 1953 in which we had 8 mortalities (i.e., 30.7%). In 6 cases (i.e., 23%), stricture formation was prevented by the routine treatment, described above, and in 12 cases (i.e., 46.1%), where strictures developed, the treatment used has been outlined above.

Before closing this paper I have to thank the Dean of the K. E. M. Hospital for allowing me to use the material for this paper; Dr. S. G. Joshi for his guidance and help and Dr. P. P. Karnick and Dr. S. B. Shah for their co-operation and help in obtaining the statistical data.

Duration - before death since burns.

Death due to complications under treatments.



Studies on the Physiology of Nasal Passages*

BY

H. D. SINGH, M. S. K. RAO & D. V. S. REDDY

I. Measurement of relative patency and air flow on the two sides :

The physiology of the upper respiratory tract and especially of the nose is one of the most neglected subjects. Accurate methods and instruments have been developed for the study of vital capacity, alveolar gas analysis and estimation of intrapleural pressure, but though the nasal passages afford entry and exit into the lungs and though the complexity and anatomical variations of the course and walls of these passages create difficulties in judging the functional lumen of the passages, attempts to study the functional aspect by scientific methods and measurements have been relatively few and restricted in use.

From the literature available to us, the following methods have been culled. Some have attracted more attention, while others have been advocated and accepted by certain groups. Some others have been used only in the laboratory and not in the clinic.

The methods may be classified under 2 heads.

1. Rhino-hygrometric methods.
2. Rhino-manometric methods.

1. **Rhino-hygrometric methods** — In these methods, the nasal patency is measured by noting the quantity of water vapour contained in the exhaled air. Permanent records may be kept by using a paper impregnated with some chemical (e.g., Tannic acid and ferric salt) or by photographing the mist formed. The instruments are called Rhino-hygrometers and the principle is to collect water vapour of exhaled air in the form of a spot of mist gathered on a graded or checkered piece of glass, metal or hygrosopic paper. Among such instruments mentioned by Portmann (1951) are (i) Glatzel's mirror, (ii) Courtade's

pneumograph, (iii) Robert Foy's atmorrhinometer and (iv) Escat's rhino-hygrometer.

Lieb and Mulinos (1939) studying the relative patency of the nasal passages, modified the Glatzel's mirror, in order to obtain quantitative results, by taking into consideration not only the size, shape and position of the exhalation deposits, but also the time taken for the evaporation of the deposited moisture.

Rhino-hygrosopic methods have been employed in clinics, as the technique was simple. As Portmann (1951) has pointed out, among the disadvantages of these methods, are the modification of results caused by variability of the humidity of the nasal fossae (as in catarrhal rhinitis, atrophic rhinitis) and absence of information on the respiratory capacity. In India, there are additional difficulties on account of uncertainties due to variations in the conditions of atmosphere.

2. **Rhino-manometric methods** — These methods are based on the measurement of nasal respiratory capacity, by studying the inspiratory and expiratory flow and pressures. The maximal inspiratory and expiratory pressures are measured by means of a mercury manometer (Donders). Some physicians study the average pressures with the aid of coloured water manometers (Courtade). Others use aneroid manometers. In these methods, only pressure readings are taken.

Sir Leonard Hill (1933) studying the effects of infra-red rays on nasal patency "fitted the end of a rubber tube into one side of the nose and connected this tube with a recording tambour. With the mouth kept closed, the changes of pressure produced by breathing through the other side of the nose were recorded by the tambour writing on a moving drum."

Dufton and Bedford (1933) investigating the same problem used a similar method ; breathing through one nostril and utilising the other for measuring inspiratory and expiratory pressures, by connecting the second nostril by means of a rubber tube to a sensitive manometer of the aneroid type recording on a moving chart. The work of Hill, and Dufton and Bedford did not involve a study of the relative patencies of the nasal passages, but the effect of exposing some parts of the body to rays from certain sources of light, on the lumen of nasal passages. As the effect would be the same on both sides, one nostril could be used for breathing and the other for recording.

*Paper read before the section of Physiology Indian Science Congress, Hyderabad 1954.

Yet other methods have been used to measure the changes in diameter of the nasal airways. Winslow, Greenburg and Herrington (1934) found the tambour method reasonably satisfactory under normal conditions, but the results were complicated by variations in physiological activity, under rather extreme temperature conditions. To overcome this, they used the Spirometer method, where measurement is made of the time taken by a measured quantity of air under fixed pressure to pass in at one nostril and out at the other when the subject holds his breath.

Dishoeck (1935) used another method in which a constant stream of air was blown through a nasal orifice into the pharynx; the outlet was through the mouth, or through the other nostril when the mouth was closed. The input pressure of air was measured with an inclined water manometer, which was connected to the air tube, just before it enters the nasal orifice. This method though reliable for laboratory work, appears unsuitable for the clinic.

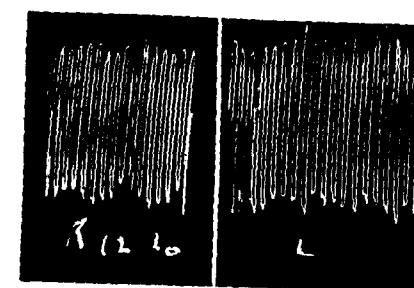
As our problem was the study of relative patencies of the two nasal passages, it was necessary to record pressure changes in both nasal passages either alternately or simultaneously.

We had to employ a different technique; only rhinomanometric methods were used and graphic records of nasal inspiratory and expiratory pressures were obtained.

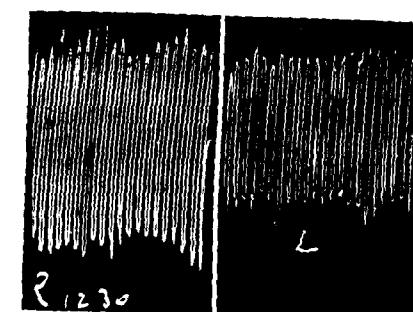
First one side of the nose was connected by a rubber tube to a water manometer, one of the limbs of which was made oblique, so that it was rendered more sensitive to slight changes of pressure. Into the straight limb was placed a float with a writing point, recording on a slowly moving drum. It was, however, found that at the end of inspiration and expiration, the water level showed a number of oscillations which were also recorded, distorting the graph obtained. This method was given up temporarily, till we could get a fluid and a float that will give more satisfactory results.

We next connected one nostril by a rubber tube to a Brodie's tambour, writing on a slowly moving drum. Breathing into the tube and tambour, with the other nostril closed, causes respiratory distress almost immediately. To avoid this, a side tube was included between the nostril and the tambour. As the volume of air escaping outside is constant through out the experiment, there will be no appreciable error in the pressure.

(a) Record with one tambour, with other nostril closed.



(b) Record with one tambour, with other nostril open.



(c) Simultaneous Records of two tambours one in each nostril.

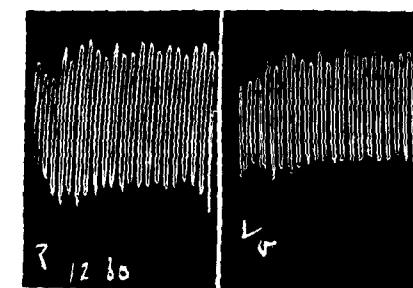


Fig. 1. Graphical records, obtained with Brodie's tambour, of the air flow through the nasal passages.

relations of the right and left nasal passages, although the absolute pressures are modified. But even in this method, respiratory distress occurs after a few respirations, unless the side tube is very wide. So records can be taken only for short periods. Another fallacy in this method as pointed out by Leib and Mulinos (1939) is that "though it might appear advantageous to measure each nasal passage individually, such measurements taken without reservation, do not express the physiologic status of one nostril in respect to the other. As one passage is constricted, the other will carry more than its share of air, but not in direct proportion to the obstruction. The amount of air that may be inspired through one nostril when the other is closed, is but a slight indication of the amount that will be expired through it when the other nostril is fully open." For these reasons this method was given up.

In the next series of experiments, one nostril was connected by a rubber tube to a Brodie's tambour, but records were taken, with the other nostril open. Graphs for the two nasal passages were obtained alternately, one immediately after the other.

For purposes of our experiments, we felt it would be more advantageous if simultaneous records for both nasal passages could be obtained. With this object in view, a slightly different technique was evolved and adopted. Each nostril was connected by a rubber tube to a Brodie's tambour, both recording simultaneously on a slowly moving drum. To avoid respiratory distress, provision was made by the introduction of a side tube in each system, as inlet and outlet, about 4" from the nostrils. The side tubes were of equal calibre and length and so the volume of air escaping outside was equal and constant through out the experiment. This made little difference in the pressure relations inside the two nasal passages. Before the experiments, the tambours are corrected so that for any given pressure, the excursions of the levers of both tambours are equal. This is done by connecting both systems to a common tube and blowing air and adjusting the lengths of the levers to obtain equal excursions.

This technique was finally adopted for our experiments as it was convenient, simple, and gave simultaneous records for both nasal passages, without any distress. We believe it deserves closer study, and further experiments are in progress to improve the method as a means to the clinical evaluation of the respiratory function of the two nasal passages.

SUMMARY

Literature on the methods available for estimating the patency of the nasal passages is reviewed.

At first some of the methods employing water manometer and tambours, were tried. Later a detailed study was made using Brodie's tambours. First, one nostril was connected by rubber tube to Brodie's tambour recording on a slowly moving drum. Breathing into the tube and tambour, records were taken, keeping the other nostril closed. Even when a side tube was included in the system, respiratory distress occurred. Next, we connected one nostril by a rubber tube to a Brodie's tambour and records were taken, with the other nostril kept open. In the last series of experiments, we connected both nostrils, one to each Brodie's tambour, and included side tubes of equal length and calibre, one in each system, and then obtained simultaneous records of air flow through the two nasal passages. The advantages of this method are that records for both nasal passages are obtained simultaneously and without distress to the subject, the apparatus is easily available and inexpensive, and permanent records can be kept. This method was adopted for further experiments and is recommended for routine use in teaching institutions.

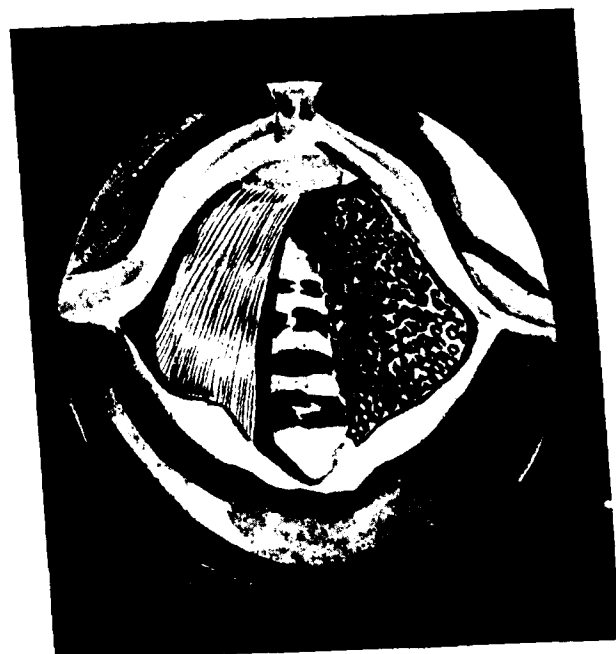
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HAEMANGIOMA OF LATERAL PHARYNGEAL WALL



(Haemangioma) of the Lateral wide of Pharynx



Haemangioma of Lateral Pharyngeal Wall

BY

Dr. R. A. F. COOPER (Bombay).

There is nothing much to talk about in this case, but I have brought before the members for the unusualness of site and extent of this condition.

Patient a young healthy individual college boy came to the Out Patients' Department of Sir. J. J. Group of Hospitals, Bombay for headaches. He was put through the routine examination and no cause for his headaches was detected in E. N. T. While looking into his throat a dark blue mass was noted commencing in left tonsillar fossa, crossing over posterior pillar continuing along lateral pharyngeal wall extending into the larynx covering the whole of the upper surface of the left vocal cord, and the medial free margin of the cord preventing total apposition. I have not tried to look beyond, being afraid of damaging the thin covering. I shall certainly do so after having dealt with the area so far mentioned. The mass is soft firmly attached at the base, the breadth being nearly 1". All along the surface shows nodules the size of each nodule being that of a mustard seed. The surface is bluish and the covering extremely thin. Lately the patient has developed some hoarseness. Patient had no idea of its existence until his attention was drawn to it by me. He was diagnosed as haemangioma. Fourteen months ago when I first saw him I started coagulation diathermy. Patient disappeared after one sitting. My letter to him to come for further treatment remained unanswered. Two months ago he again appeared and this time I have destroyed almost about 1/3rd of the visible growth, commencing at upper end by coagulation diathermy. He has now agreed to co-operate and take complete treatment. My headache will start when I reach the vocal cord. I am thinking of trying Injection of boiling water. I shall welcome suggestions from my colleagues regarding the line of treatment when I reach the cord and the extension beyond.

Abstracts

Intravenous Procaine treatment for menier's disease

(Paper read at American Otolological Society, May 1953)

By EDMOND P. FOWLER Jr., M.D.

Intravenous infusion of 1/10 of 1% procaine hydrochloride results in increased blood-flow, both venous and arterial, and flushing any blockage in the smaller vessels, in menier's disease. This therapy despite the temporary vasodilatation it produces, would be useful as an adjunct to established measures, in moderately severe cases where the patient is thankful for howsoever modest relief he is afforded.

R. P. MUNSHI, Bombay.

An experimental study of the influence of the autonomic nervous system on the inner ear

(Paper read at Am. Otol. Society, May 1953.)

By J. H. T. RAMBO, M.D., DOROTHU WOLFF, Ph.D. & GRANVILLE FREEMAN, F.R.C.S.

Menier's disease, sinsitus, sudden deafness and nerve deafness, according to modern concept, at the outcome of dysfunction of the autonomic nervous system leading to circulatory disturbance in the inner ear thereby affecting the cochlea and the vestibular labyrinth. The study involved observation of effects, immediate and later histological from sympathetic and parasympathetic denervation of blood vessels of the middle and inner ears.

R. P. MUNSHI, Bombay.

Otosclerosis and ACTH

By ZH D ANGELUSCHEFF, New York, U.S.A.

Acta Oto laryngologica, Vol. XLIII, August—October 1953, Frase IV-V Pp. 335-6.

Cortisone (i) depresses the formation of ACTH. (ii) causes morphologic involution of adrenal cortex..... and (iii) depresses endogenous pituitary secretion of ACTH; leading to free osteogenic repair, epithelization, however, remaining unaffected by ACTH. A general depression of the repair elements under ACTH is evident. The epithelization, however, remains unaffected.

The crux of the biological approach to (i) Otosclerosis and to (iii) fenestration surgery would be as under:—

Administer ACTH exogenously, thereby further stimulating secretion of ACTH. This leading in its turn to inhibition of the epithelization process. The former would render obliteration of the fenestration fistula difficult and the latter would permit epithelization to cover the rim of the window, thus preventing its later closing up.

R. P. MUNSHI, Bombay.

Biological problems in Otosclerosis

By ZH D ANGELUSCHEFF, New York, U.S.A.

The author pleads for a biological approach to the problem of progressive deafness due to otosclerosis as opposed to "physical appliances and surgical techniques" which he dubs as "the artisan empiric-cure-habit of procedure". He quotes Holmgren that "no method has as yet been devised which guarantees a permanent fistula" in fenestration operations. He believes that the science of Ultrasonics presents sufficient date, and its biological implications are now well understood vis-a-vis the problem of hearing deficiencies and otosclerosis. Discussing the biological mechanism of sound waves, he talks of toxic perceptible and ultratonic or imperceptible waves. These waves pass from the air through the body medium of ossicle chain and into the watery medium of the laburenthine fluid. Sound waves are weakened as they pass from an air medium to a solid or watery medium. If a tense membrane is interposed between the air and water media the intensity is greater. In the air breathing animals sound waves are conducted the labyrinthine fluid through the medium of solid ossicle chain and air to the tympanum and the oval window.

Discussing the characteristics of Ultrasonics Angeluscheff says, that ultratonic waves are beyond the range of the human organ of hearing, but that they have definite effect on the living tissue, characterised by such alternations in the media they pass through, as the formation of gas bubbles, cracking and depolymerization of molecules. Ph and temperature changes are also noticeable in the tissues. Human blood exposed to Ultrasonics for 10 minutes develops a decrease in concentration of whole plasma proteins, with a shifting of Alpha, Beta and Gamma fractions. Mechanical, chemical and thermic effects of ultrasonics on tissue are detailed. Following the exposure of tissue to Ultrasonics, Palm in 1950 demonstrated thickening of epithelium and of collagenous tissue, and cartilagenous proliferation. Further exposure led to surface tissue necrosis with exudate, leading in course of time to sclerotic changes. It is noteworthy that this experimentally produced collagenous sclerosis is identical with the pathology in otosclerosis. As far back as 1878 Schwartze reported that, deep connective tissue normally arranged in layers of discrete fibrillae, appeared in otosclerosis as homogenous opaque bundles with interspaces filled with scattered encapsulated cells or finely granulated masses. As late as 1950, Palm reports thickening of collagenous fibrils and complete structural disintegration, interspersed with foci of submiliary granules. Both these reports fall in line with the changes noted in the intermediary phase following experimental ultratonic wave exposure, before the final collagenous sclerotic changes develop. These histological collagenous tissue changes following experimental ultratonic exposure are due to the physico-chemical imbalance in the Sol-Yel produced by the impact of ultratonic waves. Thus it would be worth-while examining the ultrason effect on Bone tissue is rich in sol-yel substances. Short wave vibrations, (diathermy) produce thermic energy which is uniformly distributed throughout the tissue exposed. As against this, the thermic energy from ultrasonics is localized, and concentrated at the margins of the tissue exposed. Thus in the case of bone, the periosteum and the endosteum, being marginal layers of bone, react initially and intensively to ultrasonics. The endosteum reacts by initial marginal fibrosis, followed by sloughing. The periosteum reacts by proliferation of connective tissue

cells with increased intra-cellular substance density, leading to osteoid tissue. As in Otosclerosis, changes first appear at the margins. This specific location is at the borderline where the sound waves strike between two different media i.e. at the fenestrae.

In 1951 Nager and Ruedi described in otosclerosis an initial phase of a proliferation of immature bluish tinted bony tissue with few fibrils but rich in collagenous substance (menses e blue coats), followed by the sclerotic phase, characterised by otosclerotic foci; originating in the enchondral layer and leading to exostoses of soft consistency. These phases are similarly produced by ultratoxic exposures, whereas the stimuli, initiating these similar changes in the case of Otosclerosis have so far remained unproven. In otosclerosis, however, the rate and degree of changes from normal to pathological is determined by the rapidity, extent and effectiveness of the organism defense reactions. Inadequate defense results in irreversible damage. The author thus skilfully leads us on to a consideration of a new path in the study and management of otosclerosis, from a strictly biological view point:

(i) The human organism reacts to stress with production of ACTH.
(ii) Bondy osteoporosis is an early manifestation of stress reaction.
(iii) Ultratoxic exposure also stimulates the production of ACTH as an early alarm reaction.
(iv) Following undue use-up of ACTH in the system, its depletion leads to a call-up of the defense mechanism leading to sealing off, the osteo-pore factor of breakage by cell proliferation. This may further lead to irreversible fibrotic changes (ankylosis).
(v) A sustained supply of ACTH may prevent the sclerotic trend.

In potential otosclerosis the injured area is the hearing organ. The author believes that the impact of toxic and ultratoxic waves, in this age of machines and sounds is an ever present stimulant factor labelling otosclerosis as an occupational disease.

Abstractors remarks:—(i) Angeluscheff's approach to this difficult subject refreshes in our mind Prof. G. Portmann's remarks anent fenestration surgery being against physiological principles, in as much as a "fracture" is involved in this remedy. (ii) Will early institution of ACTH in a potential otosclerosis case avert ultimate disaster? (iii) ACTH would appear on big stick for the otologist to fight off frustration in fenestration surgery. (iv) the adrenal cortex needs a much greater watching and study from the stand-point of its embryological development, later growth and exposure to possible disease, infective specific or neoplastic.

R. P. MUNSHI, Bombay.

Changes in otologic pattern following inadequate penicillin therapy

By a NAKO & Gy. HAJTS, Budapest, Hungary.

(From Acta Oto LARYNGO, Vol. XLIII, Aug. Oct. 53, IV-V Pp. 461-5.)

Pathological processes apparently controlled by Penicillin are likely to exacerbate with a typical manifestations, e.g. circumscribed processes, though of short duration, look like chronic processes. Radiological examination and repeated checks of the sedimentation rate are necessary to evaluate the condition.

R. P. MUNSHI, Bombay.

Incidence of Poliomyelitis following tonsillectomy and Adenoidectomy

By I. P. VAL POULSEN, (Copenhagen, Denmark)

Acta Oto laryngo, Vol. XLIII Aug. Oct. '53 Pp. IV-V Pp. 482-7)

750 cases of poliomyelitis seen during the epidemic in Denmark in 1950 have been investigated from the following standpoints:

(i) Does tonsillectomy or adenoidectomy increase the chance of developing poliomyelitis.

(ii) Is the change of developing bulbar paralysis greater for poliomyelitis patients previously submitted to tonsillectomy or adenoidectomy, than other poliomyelitis patients?

(iii) Ought throat operations, if not urgent to be avoided during the months within which poliomyelitis is known by experience to be most frequent?

Statistical analysis shows it is not reasonable to cease with operations at the pharynx and naso-pharynx, if such are indicated, even during months of epidemic.

R. P. MUNSHI, Bombay.

The identification and clinical significance of large Phagocytes in the exudate of acute otitis media and mastoiditis

By WILSON T. K. BYRAN, M.D., Louis M.O.

(The Laryngoscope, Vol. LXIII, July 1953, No. 7, Pp. 559-80)

In this article Bryan lays stress on "large" or "giant" phagocytes seen by Sabnis supravital staining method as applied for the study of living human blood cells. Hitherto in the study of aural-discharge—cytology histiocytes or phagocytes mentioned are the usual cells found in pus, namely neutrophilic leucocytes, lymphocytes, mono-cytes and eosinophiles. Bryan's cells are so large that he names them "giant phagocytes." Hitherto severity of Otitis and mastoiditis was evaluated by the study of viability of leucocytes in aural exudates. Bryan includes in that study the identification of the phagocytes and their diagnostic value in the discharge.

To summarize, the large phagocytes easily seen with Wright's stain are an indicator of relatively severe acute otitis media, and usually mastoiditis. Their absence in the discharge of acute otitis would indicate a relatively mild illness of short duration.

Numerous plates are provided to illustrate the aural discharge cytology. Two tables are given. Table one illustrates that the more 'giant' phagocytes the longer the recovery period; table two gives a summary of the cases of chronic mastoiditis, showing that "large" phagocytes are usually absent in chronic aural discharge, bacteria are numerous and the leucocytes are very degenerate. When a chronic ear gets into exacerbation, the cytology changes and the "large" phagocytes appear. In this age of antibiotics their marking effect from insufficient antibiotic therapy has to be constantly taken into account, and Bryan provides one way of assessing the severity and deciding on surgical interference in cases presenting difficulty and doubt.

R. P. MUNSHI, Bombay.

The filling of hearing aids as an office procedure

By WERNER MUELLOR, M.D. BOSTON MASS

The Laryngoscope, Vol. LXIII, July 1953, No. 7, Pp. 581-92.

(i) First comes the inspection of the patients ears as regards appearance of the canals and drums, followed by (ii) a hearing study with (a) the pure-tone audiometer (b) tuning forks, and (c) the live voice both whispered and conversational. Audiometers and tuning forks register in decibels and cycles. It is the voice test which reveals what the patient understands. For testing voice perception in the deaf the old-fashioned but none the less useful "Speaking tube" is recommended, since it helps the otologist to decide quickly how well a modern hearing aid is going to help. If the patient can understand a faint whisper through the speaking tube, any electric aid is going to help. If he cannot understand a faint whisper but does well with conversational voice of low or moderate intensity an electrical aid will still be useful. If, however, he cannot understand even a fairly loud voice then no hearing aid will give him speech intelligibility, and he will have to rely only on lip-reading. (iii) the next step is to apply the receiver of a hearing aid to the patients' ear by means of a straight plastic nipple provided with a piece of pure gum tubing for purposes of tight fit and instructing the patient in the use of the Volume Control, and then testing perception of conversational voice. Lip-reading may simultaneously be allowed to help in the patients task of arriving at and adjusting volume control at the optimum level. (iv) The choice between air and bone conduction receivers may now be considered. Air conduction receivers should always be the first choice, regardless of how good the patients' bone conduction may be. The reason is that the higher frequencies, say from 1024 cycles/sec. up, which are essential for good speech discrimination, are transmitted much better by air than by bone conduction receivers. Patients with discharging ears or wide open radical cavities, on the other hand, should use bone conduction, provided they have adequate residual hearing by the bone route. (v) The next step is to decide in which ear the aid is to be used. If the hearing loss is severe in both ears the aid is used in both, or in either alternatively. If one ear is better with good hearing, the aid is worn in the poorer ear.

Remarks:—(i) All American Medical Association accepted hearing aids are good. (ii) At least 6 months should be allowed for adopting the patient to the machine. (iii) Persons who by all standards of audiometry have no useful hearing can also benefit from a hearing aid as an adjunct to lip-reading. (iv) Air conduction receivers are to be preferred, because the impact of powerful sound waves upon an ear drum would be more effective than coarse vibrations of a plastic or metal plate against the thick skin over the mastoid area. In this article two plates are provided one showing the speaking tube, the other the straight plastic nipple to fit standard receiver.

R. P. MUNSHI, Bombay.

Some common denominators in 1200 cases of cardiac arrest

By HUGH E. STEPHESON, Jr. Y. SORSAN-REID, and J. WILLIAM HINTON
(Annals of Surgery, 137 : 731, May 1953).

Of the 1,200 cases, 61% were males, and 39% females. Following the initial peak of incidence in the first decade, there is a fall, with a rise

again in advancing age. A Cardiac arrest is a catastrophe that may occur at any time in life. In this group of 1,200 cases gathered from doctors in various parts of the World, occurring in varied circumstances, the age ranged from 2 days to 92 years. 86% of the cases occurred inside the operation room, 14% outside the theatre. Of the 14% occurring outside the theatre, the % successfully resuscitated amounted to 17%. This should encourage us to prepare a hospital's plan of action to meeting this emergency at any point in the premises of the unsuccessful cases the prominent factor was delay in plan of action. A mobile cardiac resuscitation unit can be designed, available within a few seconds. The unit is equipped with a positive-negative type of pulmonary resuscitator with alveolar pressure adjustable for adult and infant lungs, auxiliary tanks of oxygen, endotracheal suction apparatus, electrical defibrillator with varying amperage and voltage adjustments, foot switch, hand button safety lights, interval timers for warning rings to the Surgeon, instrument tray with Scalpel, scissors, forceps etc., intrarterial transfusion set-up, rib spreaders, airways, syringes, needles, bottles of cardiac stimulants, and procaine. A direct writer cardiograph with a 25 foot extension cord, a converter for D. C. Current, and detailed instructions for those unfamiliar with the procedure, are an added help. If the % of a permanent survival is to be increased and if neurological complications are to be reduced, then every possible source of delay in immediate cardiac message must be eliminated. In the present series of successfully and permanently resuscitated cases, 94% were massaged within four minutes. Only 6% of the successful cases were massaged after a delay of four minutes. The severity of neurological complications is in direct proportion to the delay between arrest and massage. With adequate oxygenation of the cortical brain cells complete anoxaemia of over four minutes leads to irreversible cortical damage. So much for the all important time factor. Another point emergency from a study of this series is the importance of the vagovagal reflex as a mechanism in the causation of cardiac arrest. There is a strong sentiment favoring hypoxia and anoxia as etiological factors in cardiac arrest. The following further points were evolved:

(a) Survival was more frequent in the male patient than in the female. (b) Dark skinned people offered poorer prognosis compared to other groups of the operations where cardiac arrest was frequent, were, (i) appendectomies, (ii) minor plastic operations (iii) minor diagnostic procedures, (iv) eye operations, (v) dental extractions, (vi) Ear, nose and throat operations. Thus the type of case was not a major factor. Further cases survived even where a pre-existing cardiac abnormality was known of such cases 27.7% survived. In this group cardiac contractions were at least initially restarted in 56%. Data relative to anaesthesia:—Almost one half of the series had either two or three anaesthetic agents and a large number had four. Spinal was used in 148 cases of which nearly a half were combined with pentothal, nitrous oxide, or curare. Survival rate was almost 10% higher with spinal anaesthesia than with general. It is significant to note that arrest was often noted to occur at the time of the addition of Pentothal to the spinal anaesthetic. The bugbear of resuscitation hitherto has been ventricular fibrillation setting in with the help of the electrical defibrillator 84 hearts were successfully defibrillated of which again 39 were permanently resuscitated. Few neurological sequelae of a permanent nature were encountered. The great majority of patients who die after the heart is restarted will expire within the first 24 hours.

The approach for cardiac massage : the abdominal or sub-diaphragmatic for the following reasons :—(i) Direct visualization of the heart is possible. Ventricular fibrillation is easily recognized. (ii) Thoractomy leads itself to the electrical defibrillation procedure more easily. (iii) Drugs can be injected with more accuracy in the heart, and coronary vessels from tearing. (iv) If pericardial sac has to be opened, it is easier.

Treatment of Atelectasis in the newborn

By HERAL TRACTION : A Preliminary Report. ROBIN P. MICHELSON, M.D.

(by invitation) and SAN FRANCISCO CALIF

(Laryngoscope, Vol. LXIII, May 1953, No. 5, Pp. 379-88).

While Bronchoscopy has been the hitherto accepted method of dealing with atelectasis in the new born, the outcome is not usually successful and the atelectatic lung remains unaltered, particularly in a syndrome of "resorption atelectasis, with hyaline membrane formation." This clinically is suspected to be an irreversible process. Here is a typical description. The newborn breathes spontaneously, seems normal to auscultation and percussion, and then within a few hours becomes cyanotic. This is usually relieved by oxygen, but the respiratory rate and effort become more pronounced. The lower ribs, sternum and abdomen show retraction with each respiration. This becomes more severe, and the cyanosis is no longer relieved by oxygen, death resulting within the next 48 hours. The etiology of the condition remains obscure, although commonly it is attributed to aspiration of amniotic fluid and vernix caseosa ; hence the terms vernix membrane by active membrane etc. The new treatment of such cases is by Hernal Traction. The atelectatic lungs are more resistant to the pull of the diaphragm than the soft thoracic cage. The result is inspiratory collapse, or retraction of the chest walls. By exerting traction on the Xyphoid the diaphragm is given something to "fix" against and more of its contractile force is applied to "pull" the lung open. The xyphoid is grasped with an Allis clamp through a skin incision. The clamp is suspended by 2 rubber bands ensuring gentle resilient traction. Traction may be maintained continuously or intermittently, depending on the result. The infant appears well oxygenated within 10 to 15 minutes. Alternative to the clamp, a suture may be applied through the xyphoid, and traction applied. It would thus appear that hyaline membrane formation is the result of mechanical hyper-ventilation of portions of the already expanded lung in the dyspneic infant, and that "resorption atelectasis" is in reality due to instability of the chest wall which does not allow enough negative pressure to be exerted at the surface to keep open a very elastic lung.

There are 5- x-ray plates depicting results of bronchoscopy and of sternal traction.

Abstractor's note :— Rural obstetric practice with limited means and alimumentarium should welcome and develop this method of helping the new-born Glottic oedema and other possible complicating factors incident to endoscopic instrumentation in the newborn are avoided by using this impressive method of affording sufficient negative pressure, to the chest wall. The importance of Bronchoscopy for aspiration and inflation cannot be overlooked where such specialized help is available.

R. P. MUNSHI, Bombay.

Professor D. RAM

President 1953.



Dr. VENKATA RAO

President 1954.



Association Notes

The Sixth Annual Conference of the Association of Otolaryngologist of India, Hyderabad (Deccan) 1953.

A three-day session of the Sixth Annual Conference of the Association of Otolaryngologists of India was held at Hyderabad (Deccan) starting on 22nd December 1953. Dr. S. K. Jatar welcomed the delegates.

SPEECH OF DR. S. K. JATAR, CHAIRMAN OF THE RECEPTION COMMITTEE

The Hon'ble Shri B. Ramakrishna Rao, Hon'ble Nawab Mehdi Nawaz Jung Bahadur, President and Delegates, Ladies and Gentlemen—

It is a great honour and privilege to me as the Chairman of the Reception Committee to welcome you all to this historic city of Hyderabad also known as Bhagyanagar or Bhaganagar. I must first thank you all on behalf of the Medical Profession of this State and on behalf of the infant Hyderabad Branch of the Association of Otolaryngologists of India, which was formed only last year, for accepting our invitation to meet and hold your annual deliberations in this city. We have made our best efforts to make your visit and stay here as comfortable as possible and crave your indulgence in overlooking our shortcomings, if any, and hope you will carry pleasant impressions of this city when you leave for your home towns.

Hyderabad is the centre of a State formed with a happy blending of Muslim, Telugu, Kanarese and Maharashtrian cultures, all of which have contributed their own share to the history of this State. In the Hyderabad State you will find great attractions in different spheres and there are various important centres of learning, Art of Painting, Pilgrimage and Engineering projects. In this city of Hyderabad you will find the Osmania University, the Salar Jung Museum, the Nirmal Industries, Charminar, the Golconda Fort and the two artificial lakes of Osmansagar and Himayatsagar. I would also draw your attention to the Health Museum situated in the Public Gardens, which is acknowledged to be one of the best in South-east Asia and it is well worth a visit. The Ajanta and Ellora caves in the Aurangabad District are famous and attract visitors from all over the world. For those of you with a religious trend of mind, there are well-known temples at Gangapur, Tuljapur, Ellora, Mahur, Parli-Vaijnath and Paithan. The Sharan Basappa temple and the Darga at Gulbarga and the tombs at Bidar and the Sikh Gurudwara at Nanded are also places of religious interest. The Tungabhadra Dam at Munirabad and the Nizamsagar lake and Hydro-Electric Project in the Nizamabad District are also of engineering interest.

Coming to our subject now, it is gratifying to note that the subject of Oto-Rhino-Laryngology is gradually gaining the importance and the reputation it deserves. The sufferers from this disease can be counted in thousand while the Specialists have not yet reached the figure of a dozen in this State. Facilities for the treatment of this disease are still very inadequate and deserve all the attention that can be given to it. The department of this speciality was first started in 1931 by the then Director of Medical Department, the late Col. J. Norman Walker and Dr. R. V. Rao was appointed in-charge of this department at the Osmania Hospital

and it is to him that all the credit of developing that department to its present status goes. Till recently this department was a part of the Osmania Hospital where 24 beds were allotted for this speciality. In 1952 this department was shifted to the Sarojini Devi Hospital which was opened on 4th November 1952 and named after the great poet-politician Shrimati Sarojini Naidu, to accommodate the Eye and E.N.T. Departments with 150 beds to start with and now the E.N.T. Department forms an important part of this hospital with 50 beds for ear, nose and throat disease. It is now well equipped with all the modern instruments and equipment including Audiometer and we intend getting more up-to-date instruments and equipment, orders for which have already been placed. There are at present one Senior Honorary Surgeon, 2 Junior Honorary Surgeons, one Assistant Surgeon and 2 Housemen working in this department and this hospital is attached to the Osmania Medical College for teaching of the under-graduates and introducing post graduate training leading to a Diploma is under the consideration of the department. The K.E.M. Hospital at Secunderabad and the Sultan Bazar Hospital have also got separate E.N.T. Department in charge of qualified E.N.T. Specialists. We have also got under active consideration opening of E.N.T. Sections in some of our district hospitals so that medical aid in this speciality will be easily available to those in the distant corners of the State. We are also considering organising a Mobile Unit to tour all district headquarters till E.N.T. Sections are opened in each of the district hospitals. This however, depends largely on the availability of trained personnel and equipment which will necessarily take some time.

E.N.T. subject is getting due consideration in the Medical Education of the under-graduates and the Senior Honorary Surgeon is a teacher in this subject and questions are included in the paper for Surgery to which at present it is linked.

Ladies and Gentlemen we have got a lengthy programme before us and before closing, I once again extend to you all a hearty welcome. Now I request the Hon'ble Chief Minister to inaugurate the Conference and the Hon'ble Medical Minister the Scientific Session.

JAI HIND.

Then the Chief Minister of Hyderabad Hon'ble Shri B. Ramakrishna Rao opened the Conference. The Inaugural Address was delivered by Hon'ble Mehdi Nawas Jung Bahadur.

INAUGURAL ADDRESS

Hon'ble Mr. MEHDI NAWAZJUNG BAHADUR

Ladies and Gentlemen,

I deeply appreciate the honour that you have done me in inviting me to inaugurate the Scientific Session of this Conference and I am grateful for it.

May I at the outset extend to you all a cordial welcome to Hyderabad. I sincerely hope that you will enjoy your visit to our City. As medical men you will no doubt be interested in our Medical Institutions here. You will find a number of modern hospitals in Hyderabad and Secunderabad which compare very favourably with some of the best Institutions in other parts of the country.

Hyderabad has been making very satisfactory progress in the Medical and Public Health Departments. During the last few years a number of beds have been increased while the incidence of plague and some other epidemic diseases has been considerably reduced. There has been a steady increase in the State Budget for the Medical and Public Health Departments. During the last five years the figures are as follows :—

1949—50	—	96,48,022.	(Ninety-Six Lakhs etc.)
1950—51	—	1,21,50,562.	(One crore etc.)
1951—52		1,60,62,378.	
1952—53		1,51,47,668.	
1953—54		1,72,22,308.	

It is a privilege to have so many distinguished medical men here from all parts of India. We should be very glad to have your valuable advice and suggestions for any further advancement that may be considered necessary. Your Association of course deals with the treatment of Ear, Nose, and Throat diseases, which is an important speciality. It is a Branch of surgery which deals with a very vital part of the human body. I think this speciality ranks only next in importance to ophthalmology so far as India is concerned. I may perhaps tell you something about the arrangements that exist here so far as the E.N.T. departments in our hospitals are concerned. At the Osmania General Hospital for many years we have had an E.N.T. Department suitably staffed and equipped. Recently a special Hospital for E.N.T. has been established at the Sarojini Devi Hospital with accommodation for 50 beds which can be increased to 100 beds for the purpose. Special E.N.T. Department also exists at the K.E.M. Hospital, Secunderabad, and some other hospitals in the State. They are well-equipped with the necessary instruments and are doing excellent work. Excellent facilities also exist for training in E.N.T. diseases to the students of the Osmania Medical College at present. Later with the increased number of beds and the available facilities relating to staff, equipment, and space, the Institutions in Hyderabad will be most suitable as a teaching, training, and research Centre, in the whole of India. I hope that before long we may introduce Post-graduate Instruction in this subject, which is very necessary.

I am glad to inform you that Radium which is so necessary for the treatment of cancer is likely to be provided in Hyderabad in the very near future. It will of course be available for the treatment of E.N.T. also, which will be a great boon to the unfortunate sufferers.

May I suggest that E.N.T. Specialists should not confine their attention to the treatment only, but also to the prevention of diseases of the ear, nose and throat. Preventive aspect has not yet received the same attention as it deserves. Some of the common ailments that afflict children are enlarged tonsils, adenoids, middle ear disease and Rhinitis. Many of these diseases are preventable and we should do all we can to prevent them. You are no doubt aware that adenoids if not properly treated give rise to deafness. Such children are also often mentally backward. All these unfortunate developments could be avoided by giving timely advice and treatment. I suggest that in every E.N.T. Clinic there should be a nurse or Health Visitor who should visit the homes of the patients and give them advice regarding the prevention of common ailments of the ear, nose and throat. There is need also for more research work in diseases of ear, nose and throat and I hope that many of you will get an opportunity to

undertake this type of work. I understand that the amount of deafness in the country is large. These deaf people need to be rehabilitated and your advice in this matter would be very helpful. There is need also to supply hearing aids to partially deaf people at reasonable price. I have no doubt that you will consider this and many other matters concerning your speciality. Any suggestions that you may put forward will be carefully considered, so far as Hyderabad State is concerned. With the facilities that exist in Hyderabad and Hyderabad Government's readiness to develop every branch of Medical and Public Health as far as finances permit, it would be in the fitness of things for the Government of India to consider upgrading of the E.N.T. Centre in Hyderabad, as they have done for Gynaecology & V.D. in Madras and for diseases of the eyes in Patna. I should have every reason to hope that as a result of your deliberations Hyderabad Government will bring to the notice of the Government of India the need for upgrading the E.N.T. Institution in Hyderabad.

I know that your Association has already had a very successful career. I wish you continued success and I hope you will make important contributions to the advancement of your science. I wish you the very best of success in your deliberations and have now great pleasure in inaugurating the Scientific Session of this Conference.

PRESIDENTIAL ADDRESS

By Dr. D. RAM (Patna)

Hon'ble the Chief Minister, The Minister of Health, Members of the Reception Committee, Brother Delegates, Ladies and Gentlemen,

I, on behalf of the members of the Association of Otolaryngologists of India and myself, take this unique opportunity to express our sincerest thanks and deepest sense of gratitude to the Hon'ble Chief Minister and Minister in charge of Health for their august presence on this occasion, who in spite of their heavy engagements and personal inconveniences could make time to inaugurate our function as well as the Scientific Session.

Anti-Natal Care:—With the independence of our country, it is essential to look after the health of the people from the time of conception. There are a large number of diseases of Ear, Nose, Throat which are inherited by the new born children from their parents. Amongst these *deaf-mutism* is very commonly seen which can be prevented by suitable Anti-natal care, precaution, advice and appropriate treatment. I would invite the co-operation of doctors incharge of Anti-natal clinics, Health visitors, and other personnel to look into this matter and thereby prevent the incidence of such debilitating inherited diseases.

Care of Children:—Many diseases of Ear, Nose, Throat do occur during the early childhood, which due to negligence and due to inappropriate treatment persist for a pretty long time in life. Such diseases can be avoided by suitable care of children by the parents as well as the general practitioners attending on them. Endeavours should be made to get the services of Ear, Nose, and Throat specialists for the proper treatment of these diseases. A co-operation from the parents and from the general practitioners and by the Government by providing plenty of vitamin A free to these children, will remarkably diminish the incidence of these diseases.

Hygiene:—Children in their school-going age are taught general hygiene and how to prevent some general diseases. I would appeal to the Education Department of all State Governments to include a chapter on Hygiene of E.N.T. and how to prevent diseases of this branch, in the general Hygiene Book which the young children read during their early school-life. I would also appeal to the Ear, Nose, Throat specialists to make time to write a chapter for the Education department, when asked for, to be incorporated in general Hygiene Book.

Examinations of School and College Students by Specialists:—

It is very important that all school and college going students should be periodically examined by Ear, Nose and Throat specialists at frequent intervals in order to advise proper treatment for these diseases as the school-going children mostly suffer from throat trouble, especially Septic Tonsils and Ear trouble like Chronic Otorrhoea. A regular examination by Ear, Nose, Throat specialists will diminish the incidence of these diseases and prevent serious complications in future. Such examinations will also diminish the chances of spread of infectious diseases like Diphtheria etc. and so it will be a great boon to the whole community in general.

Teaching of Undergraduates:—These are days of specialisation and Ear, Nose and Throat is a very important specialised branch which requires special types of investigations and special kinds of treatment and it has been observed beyond doubt that a septic focus in Ear, Nose and Throat forms a very important causative factor in the production of disease of the whole system. As such it is imperative that undergraduates should undergo special training in this branch of speciality. There has been, of late, a move from some quarters to make this a part and parcel of general surgery, but in my opinion such a view is detrimental to the interest of Science in general and specialisation in particular. As a matter of fact, in these days of specialisation, Oto-rhino-Laryngology should form a separate subject in the Final M.B.B.S. Examination to train the young students who are going to be doctors. In case this subject is linked up with general surgery it would form only a sub-head of general surgery, without any emphasis to the undergraduates for training in this special branch of Medical Science. I would, therefore, appeal to the government and the Indian Medical Council not to link up this subject with general surgery, rather I would emphasise on their forming this into a separate subject creating special chairs and special departments for Oto-rhino-Laryngology.

Post-graduate Institute of Oto-rhino-Laryngology:—In the last Presidential address Dr. S. Roy had rightly emphasised the need for establishing a Central National Laryngological Institute for the teaching of post-graduates in this branch of speciality and also to carry on research work. I whole-heartedly support this view of Dr. Roy and would like to draw the attention of the Union Government and the State Government to the establishment of an Institute in a centrally located place at an early date. By the establishment of such an Institute in the country, there will be an advantage to the Government as the dollars and sterlings spent on foreign training of post-graduates in this branch of speciality will be cut short and there will be no necessity of sending candidates to foreign countries for this purpose. I can assure the Union Government that there is no dearth of able personnel in this country to man such an Institution. The only thing that we want is to adequately equip the Institution.

School for Training of Deaf Mutes:—The number of *deaf-mutism* cases is quite large in our country. These children are a source of worry and expense to their family and also a problem to the society. Besides giving *hearing aids* at cheap rates, the Government should establish schools in which *lip-reading* should be taught, and if proper training is given to these children, then they will no longer be a problem to their family members and to the society but can earn their own living and have separate existence. I would urge the Union Government and the State Governments to consider these vital problems and they should not turn down these on mere ground of lack of fund.

The next problem, which to my mind is another important one, is of *Cancer of Larynx*. This problem has been taken up and is being studied from different angles in foreign countries. In India also a fund should be created for special research on the treatment of cancer of Larynx cases and I am sure, in no distant date we shall find some remedy by which this disease can be cured radically.

Fenestration and Deafness Clinics:—The other pressing problem of the nation is the incidence of deaf persons. Foreign statistics show that about 1% of the patients coming to the Ear, Nose and Throat Department to attend for treatment of their ailments are either partially deaf or completely deaf. Out of these a considerable number of cases are cases of Otosclerosis. In this connection I want to invite the attention of the Union Government and the State Governments that the facilities for diagnosis or treatment of these physically handicapped patients are very meagre. If I am permitted, may I ask a pertinent question on this point? How many specialised hospitals possess an audiometer and how many Fenestration operations are done? If you go to foreign countries you will find that all E. N. T. hospitals and even the E. N. T. Department of each hospital possesses an audiometer and on every operation day you will find one, or more Fenestration operation on the list of operation cases. Hearing-aids are supplied to deserving cases. But here in our country even some of the teaching institutions don't possess an audiometer and so they can't do Fenestration operations. It is not for the lack of trained personnel but for the apathy shown by the Government in providing necessary funds for the same. In some places Deafness Clinics have been started but what use are they to the people in the absence of facilities of proper diagnosis and treatment? Hearing-aids have become a thing which is beyond the approach of the ordinary people on account of its high price. Why can't the Government set up a manufacturing concern which will provide hearing-aids at very cheap price and will be available to the lay public to alleviate their suffering?

Ladies and gentlemen, I have taken enough of your time in dealing with the special subject of Ear, Nose and Throat diseases and their importance with reference to the general body. This is my personal view and I think my colleagues will agree with me in these suggestions which I have made in the above few lines. Lastly I am very much thankful to the members of the Reception Committee for the nice arrangements they have made to make us comfortable during this conference.

JAI HIND.

HONORARY SECRETARY'S SIXTH ANNUAL REPORT

At the commencement of the year (1952—53) we had 115 members consisting of 90 ordinary and 25 Associates.

We have an Honorary member, Prof. G. Portmann, of France who came to India with W.H.O./U.S.C. team and did splendid work both at Madras and Bombay during February and March 1953. He was last week at Calcutta on his way from Indo-China post-graduate tour. I hope our West Bengal Colleagues had opportunity to see the great professor at work.

Our audited accounts (1952—53) are in your hands. Unless you get more ordinary members to join, the financial position will deteriorate. The Honorary Treasurer will deal about this in his report.

The Journal audited accounts (1952—53) are also in your hands. This shows that the income and expenditure during the year counterbalanced each other. The Chairman of the Editorial Board's report will follow.

Dr. C. A. Amesur was invited to attend a Final Structural Committee meeting of the All India Medical Institute, at the residence of Dr. Jivraj Mehta. He was able to get 3,000 sq. feet space for the O.P.D. including one Sound Proof room, 25 beds and the independent status for the department.

The interim report of the Expert Committee on Deafness has resulted in some States moving to form the Audiology Units and others to form State Deaf Councils. We are waiting to hear the final report and decide on action.

Twenty seven delegates from India paid their subscription for the Fifth International Congress and Dr. S. G. Joshi, represented us. He has read a short paper on this subject and we do hope some of you will go to U.S.A. for the Sixth Congress in 1957.

As requested at Patna by Resolution 8 (xxi) I have re-numbered all the rules serially. I was asked to print the new Memorandum by the Governing Body's resolution No. 5 of 15th July 1953. This I have done and the Memorandum is cited as the one published in 1953 as per General Body's Resolution No. 8 (xxii).

I am very grateful to Dr. C. A. Amesur for much help and guidance and to you all colleagues for the co-operation given, from time to time.

(L. HIRANANDANI),

Honorary Secretary.

CHAIRMAN OF THE EDITORIAL BOARD'S REPORT FOR 1952-53.

Mr. President and Colleagues,

On shouldering these responsibilities at Patna, in December 1952, we decided to improve the print and paper of our quarterly Journal. Here-with are the proofs of the type of December 1952, but we persuaded the printers and got better type ordered, resulting in nicer issue which you received early in the year. Thereafter you have received further issues of March 1953, June, 53 and September 1953. In these issues our Honorary Member, Prof. G. Portmann, of France has contributed two articles and has given third for the next issue. We are very grateful to him for his upgrading here as a member of the W.H.O./U.S.C. Team in their Madras and Bombay phases in February and March 1953. On his way from Indo-China to France he has visited Calcutta last week and given the benefit of his wide experience to our Bengal Colleagues.

The audited account for the year ending 30th September 1953, show printing and paper charges at Rs. 2,372 and advertisement income at Rs. 2,290 resulting in a deficit of Rs. 82/-. The head office contribution was Rs. 660/-. After taking this and other expenditure into consideration, the Journal shows a net Credit balance of Rs. 45, on the year's working. Thus we carry a final credit balance of Rs. 4,349-15-6 against last year's Rs. 4,305-6-0. This credit balance is due chiefly to two head office contributions to strengthen our finances. Firstly by the Madras 1948 resolution giving Rs. 1000 and then a similar contribution by Lucknow resolution of 1950.

Dr. C. Satyanarayana, Dr. Hiranandani and myself are instrumental in getting the advertisements. I would request you all in general and members of the Editorial Board in particular to make greater efforts and get handsome advertisements; otherwise the print and paper may deteriorate. Colleagues, you are so well known in your State and oblige so frequently the members of the drug trade that it would be for the asking that the trade will advertise in our Journal. Please do not stand in prestige for the sake of the Journal.

During the year under report only one member of the Editorial Board viz. Dr. R. P. Munshi, of Bombay, has sent us extracts for which we are grateful to him. Please do your mite in this matter at least, so that a great variety is found for the reading members.

Words are but poor vehicle to convey my thoughts to you, how grateful I am to our Editor Prof. C. Satyanarayana, who at great sacrifice produces our Journal from its inception. Please help him with original articles, case reports, extracts and book reviews. I thank our veteran Dr. P. V. Cherian, who helps me in the Association and Journal matters at our Four meetings held at Madras every year. Finally I must thank you all for your cordial support in the discharge of my duties.

(C. A. AMESUR).

The minutes of the Sixth Annual General Body Meeting held at I.M.A. Building, Hyderabad Deccan on 24th December 1953, under the Chairmanship of the President Dr. D. Ram. The meeting was called at 8-30 a.m. and as the quorum of Fifteen was not present by 8-45 a.m., the meeting stood adjourned and was held at 9 a.m. under rule 15 (f).

1. The Hon. Secretary pointed out that the minutes of Fifth Annual General Meeting were published in our Indian Journal of Otolaryngology in Vol. V, No. 2, June 1953; and resolution 30 (a) re-submitting papers by 15th November, previous to the conference, in Vol. V, No. 4, December 1953 page 157 be taken as read unless some one objects; Dr. S. G. Joshi wanted all the minutes to be read which were done—Proposed by Dr. S. G. Joshi and seconded by Dr. K. K. Ghosh "Resolved that the minutes of the Fifth Annual General Meeting held at Patna on 24th December 1952 be confirmed." Unanimously carried.

2. The following condolence resolution was moved from the Chair (Dr. D. Ram) and carried unanimously, all members standing and observing silence for one minute "Resolved that the Sixth Annual General Meeting of the Association place on record its deep sense of sorrow at the sad demise of Dr. H. L. Vaidya, a member of this Association and conveys its heart felt sympathy to the members of the bereaved family."

3. The Honorary Secretary Dr. L. Hiranandani read his Sixth Annual Report. Proposed by Dr. B. P. Apte and seconded by Dr. P. Brahmaji Rao "Resolved that the Sixth Annual Report (1952-53) of the Honorary Secretary be approved." Unanimously carried.

4. The Honorary Treasurer Dr. R. A. F. Cooper, read his Sixth Annual report and showed his audited accounts for the year 1952-53 as published in the Indian Journal of Otolaryngology Vol. V, No. 4, December 1953, showing at close a credit balance of Rs. 7,939. Proposed by Dr. P. V. Cherian, seconded by Dr. H. L. Anand and supported by Dr. S. S. Dounde "Resolved that the Sixth Annual Report (1952-53) and the audited accounts of the Hon. Treasurer be accepted." Unanimously carried.

5. The Hon. Chairman of the Editorial Board, (Dr. C. A. Amesur) read the Sixth Annual Journal report (1952-53) and showed the Audited Journal Accounts as published in the Indian Journal of Otolaryngology Vol. V, No. 4, December 1953, showing at close a credit balance of Rs. 4,355-15-6. Moved by Dr. K. L. Pathak and seconded by Dr. P. Rama Raju "Resolved that the Sixth Annual Report and the audited accounts for the year 1952-53 be accepted." Unanimously carried.

6. Moved by Dr. C. A. Amesur and seconded by Dr. J. V. De Sa. "Resolved that M/s. Sharp and Tannan the Chartered Accountants and Honorary Auditors at Bombay be thanked for the kind services rendered for the year 1952-53, and are re-elected as Head Office Auditors at Bombay on an Honorarium of Rupees Fifty for the year 1953-54." Carried unanimously.

7. Moved by Dr. P. V. Cherian and seconded by Dr. R. A. F. Cooper, "Resolved that M s. K. John Ltd., the Chartered Accountants and Honorary Auditors at Madras be thanked for the kind services rendered for

the year 1952—53 and be re-elected as auditors for the Indian Journal of Otolaryngology at Madras on an honorarium of Rupees Fifty for the year 1953—54." Carried unanimously.

8. Moved from the Chair (Dr. D. Ram) "Resolved that, as the Air Transport is nationalised so Ministry of Communications, Union Government be requested to grant concession by Air Travel to delegates and their wives attending the annual conferences of the Association of Otolaryngologists of India (Ear, Nose and Throat Surgeons) which is held all over India." Carried unanimously.

After this Dr. S. G. Joshi, suggested that the Minister concerned should also be reminded again, regarding Railway Transport concession. This the Honorary Secretary promised to do at appropriate time, as Dr. Dhukan Ram was anxious to see if he could move the Minister first, for the Air Concession.

9. Dr. C. A. Amesur gave an account of the progress made regarding the All India Medical Institute regarding the E. N. T. Section.

10. Dr. C. A. Amesur read the constitution he had suggested to the Government of Bombay, for the State Council for the Deaf insisting on representation for this body and the Indian Medical Association.

11. Dr. C. A. Amesur gave his reasons for starting E.N.T. Camps, as Mobile Units of the State Hospitals.

12. Proposed by Major K. K. Ghosh and seconded by Dr. R. V. Rao "Resolved that the Association views with great concern the decision of the Medical Council of India to omit E.N.T. and Eye subjects from the final M.B.B.S. examination and requests them to reconsider their decision and make basic training and examination in these subjects as a separate paper compulsory in Universities where it is not so yet." Carried unanimously.

13. Election for Office Bearers: The President declared the following have been elected to the following offices for the following terms:

President	... Dr. R. Venkata Rao, for one year.
Honorary Secretary	... Dr. C. A. Amesur, (in terms of rule 19) for 3 years.
Honorary Treasurer	... Dr. R. A. F. Cooper (in terms of rule 19) for 3 years.

Members:

Dr. Tulsi Das for 3 years	Dr. R. N. Misra for 3 years
Dr. M. M. Nath for 3 years.	
Honorary Associate Secretary...	Dr. K. Keshav Kumar for 1 year.

14. Under rule 15 (c) general discussion followed and the following was agreed by majority. Moved by Dr. K. L. Pathak and seconded by Dr. B. V. Rama Rao. "Resolved that Amritsar be the next venue of the conference." Carried unanimously.

15. Dr. Venkata Rao wanted the conference to be held in September—October. Dr. Subramaniam in February and Dr. Joshi said that it should be in December as usual, to which Dr. Ghosh said near the X'mas holidays. Moved by Dr. C. Satyanarayana and seconded by Dr. T. S. Shetty. "Resolved that the Seventh Annual Conference be held in December about the time of X'mas Holidays." Carried by a large majority.

16. Moved by Dr. K. Sreerama Murthi and seconded by Dr. P. S. Krishnamurthy. "Resolved that if Amritsar refuses for unavoidable reasons, Jaipur invitation of Dr. Narayan be accepted." Unanimously carried.

17. Moved by Dr. R. N. Misra and seconded by Dr. Y. P. Vittal. "Resolved that this conference places on record its grateful appreciation for all the help and facilities given by (1) Chief Secretary to the Government of Hyderabad (2) Vice-Chancellor of the Osmania University and (3) local branches of the Indian Medical Association for holding its meetings at Hyderabad, Deccan." Carried unanimously.

18. Moved by Dr. S. C. Banerji and seconded by Dr. V. S. Subramaniam "We place on record our sincere thanks for services rendered by Dr. P. N. Sinha to the Association during his membership of the Governing Body as Associate Secretary for past twelve months." Carried unanimously.

19. Moved by Dr. S. Dounde and seconded by Dr. G. Narayanan "Resolved that we place on record our appreciation for all the splendid constructive work done by Dr. S. Roy, Dr. P. V. Cherian, Dr. L. Hiranandani, Dr. R. N. Kacker and Dr. N. Dutt (the retiring members of the Second Governing Body 1952—53) at great personal inconvenience." Carried unanimously.

20. Moved from the Chair (Dr. D. Ram) and unanimously carried "Resolved that this conference places on its record its grateful appreciation of the pre-conference bulletins issued and splendid scientific and social arrangements made by the Hyderabad State branch in general and our indefatigable local Secretary Dr. R. Venkata Rao in particular.

21. Moved by Dr. R. Venkata Rao and seconded by Dr. K. K. Ghosh. "Resolved that we place on record our great appreciation for the excellent services and suggestions rendered by Dr. D. Ram to the Association, during his term in office as President for 1953." Carried unanimously with applause.

22. Then the Chairman handed over the Insignia of the President to Dr. R. Venkata Rao with cheers, and so closed the proceedings of the Sixth Annual General Meeting.

After this under rule 18 (b) the newly elected Governing Body went in session under the Chairmanship of Dr. R. Venkata Rao, the Newly elected President and appointed Dr. Tulsi Das as Local Secretary in terms

of rule 15 (d) for holding the next session at Amritsar. It was further resolved that in case Amritsar declines for unavoidable reasons, Jaipur invitation be accepted and Dr. G. Narayanan to be then the local Secretary.

PROCEEDINGS OF THE SECOND ANNUAL CONFERENCE OF THE ANDHRA BRANCH OF THE ASSOCIATION

The second annual conference of the Andhra Branch was held in the Medical Association buildings at Vijawada on 26—10—53. The Conference was inaugurated by Dr. P. Narasimharao of Visakhapatnam. The presidential address of Dr. B. Tirumalarao was read by Dr. Ch. S. John of Guntur as the former could not attend the conference due to ill-health. The Secretary, Dr. G. Lakshmipathi read the Secretary's report. The Scientific Session was held in the evening under the presidentship of Dr. G. S. Ramachandra, District Medical Officer Southern Railways, Vijawada. Papers were read by Dr. P. Narasimharao on Bronchial asthma and the Nose, by Dr. G. Lakshmipathi on Recurrent Nasal Polypi, by Dr. V. S. Subrahmanyam on Otosclerosis and by Dr. V. S. Krishnamurthy on Carcinoma in Noses and accessory sinuses. Dr. Subrahmanyam presented his colour film on Lempert's fenestration operation and there was a film show on the movements of the tongue, film lent by the Imperial Chemical Industries. The Bezwada Medical Association has generously played the hosts for the conference and there was a good gathering both in the morning and in the evening.

In the business meeting held in the afternoon the following office bearers were elected for the year 1953.

President	... Dr. B. Tirumalarao
Vice-President	... Dr. Ch. S. John
Secretaries	... Dr. G. Lakshmipathi Dr. G. Kutumbarao
Treasurer	... Dr. K. Sreeramamurthi
Exec. Com. Members	... Dr. P. S. Giri Dr. K. John Suryodayani Dr. P. Narasimharao

It was resolved to request the Government to start a deaf and dumb school in the state as there was no such school at present. By another resolution it was suggested that there should be an E.N.T. teaching surgeon as one of the examiners in surgery for the M.B.B.S. course. It was resolved to hold the next annual conference at Eluru.

INAUGURAL ADDRESS

By Dr. P. NARASIMHARAO, M.S.

Mr. President, Ladies and Gentlemen,

I thank you for kindly inviting me to inaugurate the second conference of the Andhra Branch of the Association of the Oto-Laryngologists of India. After the energetic and persuasive effort of the Executive Committee have failed to bring in more distinguished people, I had to accept the responsibility as this association is very dear to me.

The high percentage of patients entering the clinic or wards of any general hospital for the treatment of Ear, Nose and Throat conditions is a matter of record. Moreover, a large part of the work of the general practitioner is in this field. This is particularly so in our country where there are few specialists. It is impracticable for general practitioner in a rural area to call in specialists for many of the minor complaints, he may be called upon to treat. Moreover, many cannot afford the time or money to consult more than one practitioner. A questionnaire to the general practitioners to elicit their views on the utility of the under-graduate education they have had, would be very useful. The aim of teaching should be towards a more complete preparation of the student. The present curriculum creates an impression on the student that when he settles down as a practitioner he has nothing to do but refer the cases to the specialists. The scope and extent of general surgery and medicine should not be still lowered but it must be remembered that in modern times the so called general surgery and general medicine are also in a sense specialities confining their scope to a few regions of the body. So for purposes of teaching some of the major specialities must be retained and those so retained should not be treated as isolated unimportant appendices but as essential parts of the main subjects. After all many of the minor and more common maladies for which the patient seeks relief in general practice belong to these specialists. I hope this conference will go into this question and represent to the concerned authorities how best this change can be brought about.

Progress in this various arts and sciences continue to move forward with the workers in the respective branches of the profession making ever increasing efforts to keep pace with the rapid advance. Oto-Laryngology has not lagged behind and has made several advances during recent years. The foremost among them is the recognition that Ear, Nose and Throat are neither anatomically nor physiologically independent organs but integral parts of the human body. Many new surgical techniques have been evolved and many refinements of operative techniques have been developed. Tonsillectomy is now an art perfected to a high degree requiring skill and dexterity for its proper execution. Inadequately carried out it not only fails in this but often aggravates them. Today, Laryngectomy, while not an easy operation, is freely undertaken. More than the development of technique the present day tendency is towards physiological surgery, that is to say, remedy pathological process in a manner to conserve normal function as far as possible. New diagnostic instruments have been developed. The science of Broncho-Oesophagology has reached a high standard. With the modern hearing aids and the fenestration operation, the hearing of severally deafened people can now be restored to a useful level. Advances in endocrines, Vitamins, blood chemistry etc., and the advent of new drugs and Chemotherapeutic agents and antibiotics have left their imprint upon this speciality. The modern concepts of nasal physiology and the influence of nasal Allergy on nasal manifestations have caused the replacement of many intranasal procedures by intelligent conservative management. In spite of all this much remains to be done. So far Indian Oto-Laryngology has not contributed anything worth mentioning to this advancement. We should not be discouraged by this because it has been the same with every subject country. Now that we are a free nation we must strive hard to achieve something really worthy of our great nation. Conferences such as these help establishment of social contacts among workers, afford opportunities for exchange of ideas and can contribute to advances in knowledge.

THE SIXTH ANNUAL CONFERENCE—(I.J.O.)

PRESIDENTIAL ADDRESS

By Dr. B. TIRUMAL RAO, F.R.C.S., D.L.O.

Distinguished guests and fellow members,

I must tender to you my humble apologies, as President of the Andhra Branch of the Association of Oto-laryngologists of India, for my inability to be with you and extend to you personally a most cordial welcome. Secondly, I must express my grateful thanks to the Vice-President Dr. John who has kindly consented to preside over this conference at such short notice. I am no less bound to give vent to my feelings of high appreciation and admiration for the generous manner with which Dr. Sreeramamurthy and other members of the Bezwada Medical Association have taken upon themselves the huge and the heavy responsibility of making all the necessary arrangements for the success of this conference. This is the second conference that is being held under the auspices of the Andhra Branch, the first one having been held at Visakhapatnam in the month of April last year. I am sorry to say that we have not been so far able to hold any clinical meetings or to claim any other activity to our credit which is worth mentioning. It may not have been possible to hold even this conference this year but for the bold lead given by Dr. Sreeramamurthy. The Hyderabad Branch, whereas, which was formed only just a few months back has been able to hold clinical meetings and to invite the Sixth Annual Conference of the Oto-Laryngologists of India to be held in December next. Let us heartily congratulate the Hyderabad Branch on their splendid achievement.

Now you would perhaps expect me to say something in explanation of why the Andhra Branch is so very slack and backward. There are, of course, many circumstances which are not quite conducive at present for the successful prosecution of the aims and objects of our association in the Andhra. Our members are few and far between. They are scattered about over the wide extent of Andhra-Desa. We have no outstanding city which can claim the intellectual and cultural atmosphere of Madras, Bombay or Calcutta. I cannot think of any place in the present Andhra state which could satisfactorily function as the head-quarters of our association. This is our great misfortune. The people in a state need, not only a good political capital but more important still is the possession of an intellectual capital for their progress in arts, science and literature. Till now the city of Madras, the political capital fulfilled the latter purpose also to a great extent for all the peoples of the composite state. But now we have been deprived most unkindly and unceremoniously from sharing with others the educational facilities and the cultural traditions that have been built up over a long period of history, by the common labours of all the peoples. It has therefore been forced upon us that we should develop, as speedily as possible, a new intellectual capital, no less than a political capital, so that it would function as the spearhead of all the activities of the people, political, social, and educational. It would naturally be the head-quarters of professional bodies like that of ours. Personally I consider this a very important aspect to be borne in mind when a decision is finally taken about a permanent capital for the state. Let us all hope that, ere long, the Andhra state would be a Visala-Andhra comprising in its fold all the contiguous Telugu-speaking tracts now mixed up with other states. One need not unnecessarily be apologetic about this which is a perfectly legitimate and reasonable

aspiration of the Andhras in the present democratic set up of the constitution of our Motherland. There is absolutely no reason for any one to suspect, any ideas of expansion in the minds of the Andhras at the expense of our neighbours, or any other sinister purpose behind. I am sorry if I have, perhaps, a little bit digressed into politics quite unawares, which is far remote from the purpose with which you are assembled at this conference.

For the time being, we should feel profoundly thankful to the Union Government for this present truncated Andhra state at least, though only after the supreme sacrifice of that good and pious soul Potti Sriramulu that we got it. Now it remains with us to work it up. But the great bane of the Andhras has been, during recent years, multiplicity of leadership and dearth of followers. As it is the responsibilities that have been cast upon the shoulders of our leaders are stupendous. Let us hope that the very immensity of the task ahead would impell them to compose their natural differences and realise the importance and the absolute necessity of the unity of purpose and concerted action at this juncture. However fine the machinery and however efficient the foreman, no government can function well and achieve any results except with the whole-hearted co-operation of the people concerned. Every Andhra therefore should now set his shoulder to the wheel so as to make possible the smooth and even progress of the state. I am sure that I am voicing the determination of the entire Andhra medical profession when I say that we are prepared to play our part in this huge experiment. We are always ready to pull our weight in any programme formulated for the prevention of disease and relief of human suffering.

Let us leave aside, for the present, the responsibilities of the medical profession in general and confine ourselves, as befits the occasion, that we, the association of oto-laryngologists, can hope to do in this respect. You are all aware of the good work that our parent association was able to turn out ever since its foundation, of which the most important is that they have drawn the attention of the Union Government for taking adequate steps for the amelioration of the lot of the deaf and the deafened. The appointment of an expert committee for its investigation is very significant. As a result it is expected that we will have an accurate estimate of the number of people so afflicted. From the statistics available of western countries it is shown that about 5% of school children are either totally or partially deaf. It is sad to reflect that, till now, neither the medical profession nor the general public have paid any serious attention or realised the gravity of this problem. There has been a ruthless neglect of the sad miserable plight of the deaf. The man who is born deaf, as you know, becomes necessarily dumb, for the power of hearing is absolutely essential for the development of speech, unless otherwise educated. This terrible handicap unfortunately evokes often a reaction, in the social world, of irritation and impatience rather than of sympathy and toleration. This is in somewhat of a strange contrast to the feeling or compassion that are aroused at the sight of the blind, the lame and the limping. This is accounted for by the simple fact that the deaf is deprived of the divine power of speech, the art of communicating with his fellow men. He becomes completely shut up in isolation so far as social life is concerned. It is the power of speech that distinguished man from the animal. The strange irony of it is that he has got his intellectual and emotional faculties intact, and yet ineffectual for

his full development as a human being. The eye somehow has been given, for long, the pride of place amongst the organs of special sense. But on a deeper consideration, it becomes a moot point to decide which is the greater misfortune, the loss of sight or the loss of hearing. The appalling human misery which results from the loss of the hearing power has been well described by a great American Otologist in the following words, "Those most nearly connected with the maintenance of the hearing power know only too surely, that deafness is almost the chief of human tragedies, more fearful than Blindness only a little less terrible than insanity—Loss of sense of hearing which develops last and subserves more than any other sense, the intimate spiritual life, involves a correspondingly more devastating effect on the life and happiness of the victims. The deaf are hungry people. The feast of humour and love, the quick exchange of sympathy which distinguishes life from existence is spread before them in their very sight and yet they cannot eat thereof". The stupendous importance of the problem has been well recognized by the western countries and adequate steps are being taken there for the rehabilitation of the deaf and the hard of hearing. A new science under the name of Audiology has come into existence. An international conference on audiology was for the first time held at Stockholm in the year 1950. Audiology was also one of the main subjects discussed at the international congress of oto-laryngology at Amsterdam this year.

In the countries where there is a well-knit organization, as soon as the parents suspect that a child does not respond to sound stimuli, he is taken to special clinics. There the hearing defect is correctly assessed. Hearing aids are prescribed. Lessons in lip-reading are given. A suitable educational programme is drawn up for him. Every care is taken and every attempt is thus made to bring up the hard of hearing child to the level of the ordinary school children. There are separate schools for children who are so deaf that they cannot be improved in their hearing power under training. In Britain there are at present 4000 deaf children in 60 schools. It would appear that there are 6 deaf and dumb schools in the Madras state. But, as far as I know, not even a single school exists in the whole of the Andhra-desa. This is again enough to show how very backward we are in the modern methods of care and education of children.

It is difficult to trace the origins of audiology. It is also difficult to say to what extent the otologist himself has contributed to its growth and development. There could, however, be no doubt whatsoever, that the conception of the operation of fenestration for otosclerosis gave a considerable impetus for research into the anatomy and physiology of the auditory system. The invention of electro-acoustic instruments and their utilization for diagnostic purposes and as hearing aids, also greatly helped the growth of audiology. Audiology has now become firmly established itself as a branch of science. It has impressed into its service several categories of workers, speech correctionists, teachers of deaf, otologists, acoustic physicists, clinical and experimental psychologists, social service workers and so on. However born, and however nurtured and however dependent it is upon the combined labours of so many classes of professional people, it is fortunately recognized that audiology realizes its ambitions best as an auxiliary of otology, and that the guidance of the otologist is essential for the successful working of any audiological programme. It now lies with the otologist to avail himself of the opportunity and properly equip himself for this leadership.

The otologist came to look upon himself as a surgeon and lived more or less in isolation. He developed a spirit of self-sufficiency. The time has come however, when he could no longer afford to overlook the vast and rapid changes that are taking place in the practice of otolaryngology as well as of medicine in general. We are at the threshold of a new era, in many ways different from the past. Infections of the nose, throat and ear dominated the practice of oto-laryngology till very recently. But now, acute suppurative otitis medial, mastoiditis and its complications are of rare occurrence. Surgical procedures have now largely given place to chemotherapy and antibiotics. There are constant inroads moreover by other specialities into what the oto-laryngologist usually considered as his own proper domain. As a consequence, it has been said sometimes that Oto-laryngology is a shrinking speciality. I am sure, however, that there is absolutely no room for such pessimistic apprehensions regarding the future of Oto-laryngology. This is amply demonstrated by the striking manner in which it has upheld its status even after these fresh developments in medicine. All such fears have been completely dispelled. The surgical treatment of otosclerosis and of Meniere's disease, plastic surgery of the nose and ear, surgery of neck, and so on offer now for him a wide scope for the exercise of his surgical talents and technical skill. All this is no doubt quite true. But he should no longer pin his faith absolutely to surgery. It may desert him altogether at any moment. What I would like to suggest is that he should develop a broader outlook and take a greater interest in some of the other problems as well. For instance it must be admitted that the social and rehabilitation aspects have not as yet received as much attention as they deserve. He must actively interest himself in future in the rehabilitative measures included under the audiological programme. He must know something of lip-reading the trial and fitting of hearing aids, speech audiometry, galvanic skin resistance objective hearing tests, auditory training, the psychology of the deafened and so on. In short I think he should equip himself fully and assume leadership in audiology. Even from his own individualistic point of view, he could no longer afford to be indifferent to the methods of audiology. For it is audiology that provides a service which is so very much needed for his patients handicapped in hearing. For the otologist to make himself fully useful to the community and for the community to derive the fullest benefit from his services, it becomes obvious that steps must be taken for the implementation of the audiological programme in this country as early as possible. The possession of mere theoretical knowledge is of no use unless there are facilities for practical application. Nor diagnostic equipment itself is of any value unless there are facilities for treatment and rehabilitation.

The Institute of Post-Graduate Medical Education at Delhi is designed to have a full fledged modern E.N.T. Department with facilities for research and an audiological centre attached to it. But a single centre for a whole sub-continent is certainly not going to touch even the fringe of the problem. There should be one such centre in each of the major states. Each district hospital must have E.N.T. department with a hearing clinic. I would like to call it a hearing clinic instead of a deaf clinic. This is a subject I thought to be of sufficient importance to be offered for your consideration at this conference. If these ideas are approved, I consider further that this association should undertake the responsibility for their propagation amongst

the people at large. It also rests with the association to appraise the Andhra Government and seek for its help in tackling this problem at the proper moment.

Finally let me take this opportunity and offer my sincere appreciation of the great honour done to me by having me as the President for the last two years. I do earnestly hope that this honour will be offered to somebody who is young and energetic and who could do full justice to the responsibilities of the office. I make an earnest appeal to all the members of the medical profession who are interested in oto-laryngology to become members of this association, and make it a strong and efficient instrument for the service of the people.

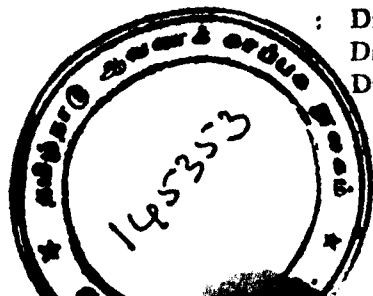
Let me offer finally my grateful thanks to Dr. Narasimha Rao and the Hony. Secretary Dr. Lakshmipathi for their unfailing courtesy and co-operation shown to me during my term of office.

JAI HIND!

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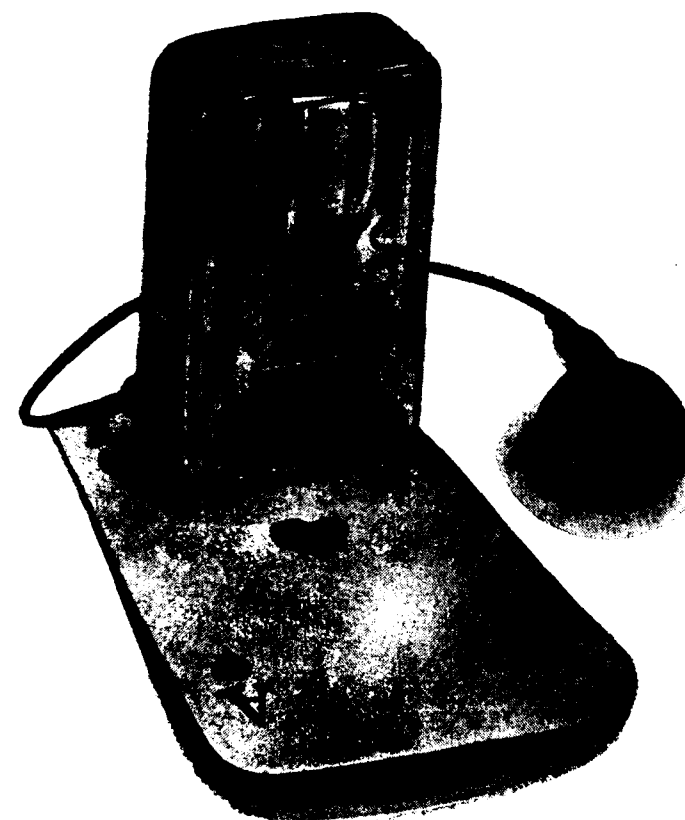
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JUNE 1954

No. 2

Scleroma in Punjab

(Brief review and report of two cases)

BY

Dr. TULSI DAS & Dr. M. R. CHADDAH.

Rhinoscleroma was discovered in 1870 by Von Hebra¹, who described it as an unusual form of cutaneous cancer. As the disease is not confined to nose only but may involve any part of the upper respiratory tract, the prefix of "rhino" was abandoned and the term "scleroma" adopted at the second International Congress of Otorhinolaryngology held in Madrid, Spain², in 1932 where 4 cases were reported to have occurred in India. So far a number of cases have been reported from Guatemala, El Salvador, Mexico, Poland, Italy, Egypt, South Western Russia and many other places. The disease is endemic in some of these areas like Guatemala and El Salvador. In India, however, the disease is so uncommon that only 7 cases were reported upto 1941³. But in Punjab it is still rarer as so far as our knowledge goes no case has been reported from this province which makes it an otorhinolaryngologic curiosity. It is this rarity of the disease in this province and its likelihood of being confused with lupus (as occurred in our first case) and other granulomatous conditions of the nose that has prompted us to present these cases. It is further desired to suggest the otorhinolaryngologist to keep this disease at the back of his mind while examining a case of granulomatous condition of the upper respiratory passages and with this vigilance we may find that the disease is not so rare in this country as it has been considered so far.

CASE REPORTS.

Case No. 1.—K. R., a young male, aged 25, barber by profession, reported to the outpatients department of this hospital complaining of a firm and nodular swelling inside the left vestibule of nose since $2\frac{1}{2}$ years. $1\frac{1}{2}$ years later the right side also got involved. It was followed by blood stained crusty discharge, anosmia, hoarseness generalised weakness and constant but partial obstruction of the nose which was more marked on the left side. The nodules went on increasing in size unaccompanied by any pain, fever or loss of appetite. No history of such malady or tuberculosis in the family. Has never suffered from any venereal disease.

On inspection, the upper part of the nose was found to be normal, while the lower part was flattened due to spreading out of the alae nasi by the growth (Fig. 1). On pinching the tip of the nose, the alae nasi gave a bony feel and could not be pressed in. The central half of the upper lip at the base or columella was also infiltrated and was firm to feel, more on the bony side. Anterior rhinoscopy revealed circumscribed, dirty red nodule, 1 cm. in width and 3 mm. in height extending into the right nostril. It had infiltrated the floor and lateral wall. It was firm and tender. There was no ulceration or scarring and regional glands were not involved. On the left side also the nodule was infiltrating the lateral wall and floor and was 2 cm. in width and 5 mm. in height. Septum was deflected to the right so much so that no probe could be passed between the growth and the septum. On examination of the throat it was found that the soft palate was cartilagenous and both the posterior pillars were infiltrated. Uvula was scarred and posterior pharyngeal wall had a leathery appearance. Laryngoscopic mirror reflected infiltration of the false vocal cords while the true vocal cords and epiglottis were normal. Digital examination of the nasopharynx showed that the soft palate was four times its normal thickness and both the posterior nares were narrowed. Scleroma being quite rare in the Punjab, diagnosis of lupus was made. Seriological tests for syphilis, E. S. R. and X-ray Chest were normal. A piece of the growth was sent for histopathological examination and the Pathologist reported scleroma (Fig. 2). Culture from this area was positive for *Klebsiella rhinoscleromatis*. He was put on dihydrostreptomycin, $\frac{1}{2}$ G twice daily by intramuscular injection. After 15 days therapy there was no improvement so the treatment was discontinued.

Case No. 2.—R. K., a female, aged 25, developed firmness of the left anterior nares about one year back. Right side also got involved a month or so later. Alongwith this she felt that the anterior nares were getting flattened and she experienced some difficulty in breathing through nose. Since the very beginning there is a change in her voice. A few months later she began to have scanty, purulent and blood stained discharge on blowing the nose. It was accompanied by pain at the anterior nares. No history of trauma, anaemia, cough, fever or contact with tubercular patients. No history of venereal disease or similar trouble in the family.

On inspection of the nose we found that the alae nasi were spread out (Fig. 3). On pinching the tip of nose it was found to be bony hard. Anterior rhinoscopy showed non-ulcerated, nodular and pink growth involving the lateral wall, floor and medial wall of the right anterior nares. It was 2 cm. in width and 3 mm. in height. The surrounding tissues had firm infiltration. Clinical picture was more advanced on the left side. In this case the infiltration of the upper part of the lip was more marked than the previous one. On examination of the throat we found that the uvula was missing and the left palate was scarred. Larynx normal. Digital examination revealed that the posterior pillars were infiltrated and tonsils were firm. In the outpatients department this case was again misdiagnosed as that of lupus. But on examination in the inpatients department the case was diagnosed as scleroma. E. S. R., seriological tests for syphilis and X-Ray chest did not show any abnormality. Histopathological examination was done and Pathologist's report was chronic inflammation. As we were sure of the clinical diagnosis another biopsy from the deeper tissues was taken and the Pathologist confirmed the diagnosis of scleroma (Fig. 4). Patient left the hospital before any treatment could be started.

COMMENTS

Rarity of the disease precludes its early diagnosis and most of the cases are often mis-diagnosed and treated as those of lupus. But if one has already seen a case and keeps this disease at the back of his mind the clinical diagnosis is quite easy. There is no doubt that the complaints of these patients are almost the same as those in lupus nose but bony feel of the nodules, which is quite easily appreciated when the tip of the nose is pinched between the thumb and index finger and absence

of ulceration are of great help in the diagnosis of this disease. In early stages, however, the lesions may be soft and in later stage of the disease they might get ulcerated. Other conditions from which it has to be differentiated are nasal diphtheria, atrophic rhinitis, syphilis, carcinoma, leprosy, rhinosporidiosis and sarcoma etc. For early diagnosis the following examinations should be carried out before proceeding to anterior rhinoscopy :—

1. Pinch the alae nasi towards septum.
2. Press on the filtrum at the base of columella.
3. Lift the central part of upper lip and palpate the reflexion of mucosa from the gums to the mucosal lining of the upper lip.

All these procedures will give a bony feel. These should be followed by anterior rhinoscopy, posterior rhinoscopy and examination of throat and larynx. Diagnosis is confirmed by histopathological examination which shows Mickulicz cells, Russel bodies and *Klebsiella rhinoscleromatis*. Complement fixation test using preparation of this organism as antigen also helps in diagnosis. Culture from these areas reveals *Klebsiella rhinoscleromatis* which has been blamed as the causative agent of this disease. There are some workers who oppose this view and presence of *Klebsiella rhinoscleromatis* in the throats of normal persons and in other diseases and its inability to produce similar lesions in the animals come to support their idea. Other factors which have been held responsible for causing this disease are contagion and heredity. The latter does not seem to play any part but prolonged contact under poor hygienic conditions, as in leprosy, has a definite role in the causation of this disease. This fact is supported by the reports of Lasanga⁴ and Hara et al.⁵ Former reported an Italian family in which 15 persons suffered from scleroma while the latter's report of 7 cases of scleroma in a family in United States, where this disease is rarely seen, is still of greater interest.

As regards the treatment, a number of caustics—mercury, arsenic, antimony, etc., electro-coagulation, autogenous vaccine, X-ray and Radium therapy along with minor surgery have been tried but none has so far given promising results so as to be selected as the treatment of choice. Based on the assumption that *Klebsiella rhinoscleromatis* is the causative agent of scleroma, various sulphanomides have been tried. Hara and



Fig. 1.



Fig. 2.



Fig. 3.

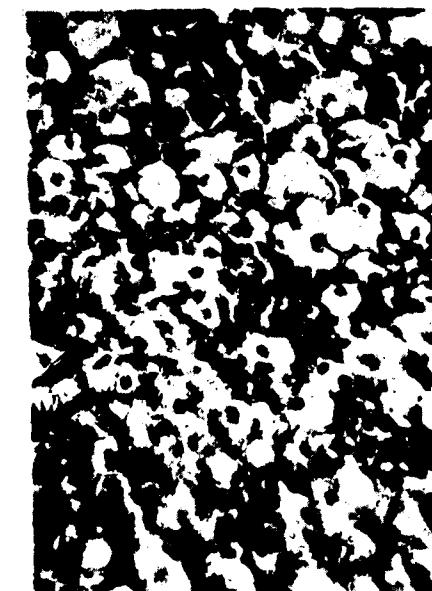


Fig. 4.

coworkers⁶ and New et al⁶. have reported good results with streptomycin but it proved ineffective in our case. Though streptomycin does not solve the problem yet it is the only drug which meets the challenge of the disease to some extent and at the present state of our knowledge streptomycin associated with minor surgery is the best weapon at our command.

SUMMARY

1. Two cases of scleroma from Punjab are presented.
2. Importance of scleroma in differential diagnosis of granulomatous conditions of the upper respiratory passages is stressed.
3. Literature on the disease is briefly reviewed.

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Tumours of the External Ear

BY

B. TIRUMALA RAO, F.R.C.S., D.L.O.

Tumours of the ear are generally classified into three categories: (1) extrinsic—those occurring in the auricle, concha or the external canal; (2) intrinsic—those occurring in the tympanic cavity, tympanic membrane or the mastoid and (3) indeterminate—the origin of which cannot be accurately ascertained^{1, 2, 3}. This report is confined to a discussion of the tumours of the first group. They are uncommon and references to this subject in the literature are rather scanty and meagre. There are not more than ten cases of these tumours on record out of a total number of 75,000 patients seen in the E. N. T. department of the King George Hospital, Visakhapatnam during a period of nearly two decades. And yet they may not be so very rare, for patients as a class do not present themselves for treatment unless the condition becomes too conspicuous and ugly or some other serious symptoms develop. As to their pathology, there is nothing peculiar to their origin in this situation. But it must be admitted that their surgery requires some special skill and care, for here the cosmetic result assumes a paramount importance.

Eggston and Wolff¹ give the following classification of these tumours:—

A. Mesenchymal Tumours:

1. Benign: (a) Fibroma (1) Keloid. (2) Xanthoma.
(b) Osteoma.
(c) Chondroma. (1) Enchondroma.
(d) Angioma.
(e) Naevi.
(f) Lymphoma.
2. Malignant: (a) Fibrosarcoma.
(b) Osteosarcoma.
(c) Angiosarcoma.
(d) Lymphosarcoma.
(e) Metastatic Tumours.

B. Epithelial Tumours:

1. Benign surface epithelial tumours:
(a) Papilloma: Simple, Multiple, Hyperkeratotic.
2. Malignant surface epithelial tumours:
(a) Epithelioma: Squamous, Prickle, Basal.
3. Benign glandular epithelial tumours:
(a) Adenoma.
4. Malignant glandular epithelial tumours:
(a) Adenocarcinoma.

Some of these tumours must be very rare indeed. The discussion will therefore be confined to such of those as were recorded in the E. N. T. department of the King George Hospital during the above mentioned period.

BENIGN TUMOURS.

Fibroma.—Of the benign tumours, fibroma is considered the most common if keloid also is accepted as a fibroma. A true fibroma has not been seen by the writer. Eggston and Wolff¹ state true fibromata do appear in this region either singly or as a part of Von Recklinghausen's disease.

Keloid.—Keloids may be bilateral and even symmetrical. Of the etiological factors, trauma is considered the most important. The lobule and its neighbourhood are the most common sites for their growth. The lobule also happens to be the most common spot chosen for the boring and wearing of ornaments amongst all the peoples of the world. The negro race is said to be specially liable to this affection in whom it also attains huge dimensions resulting in great deformity. Fig. No. 1 presents the picture of a case of recurrent keloids of large size and of remarkable symmetry in a young girl. Fig. No. 2 & 3 present the same case two years later with a recurrence again. A natural predisposition and a family tendency have been recorded. There is persistent tendency to recur and spontaneous regression is uncommon. Fig. No. 4 is an instance of a keloidal formation in the scar tissue after a mastoid operation. Repeated trauma is also mentioned as a cause as seen in the cauliflower ear of boxers.

A keloid presents a hard surface usually smooth and occasionally nodular. Microscopically it shows dense white fibrous tissue. It may be however softer presenting a more cellular



Fig. 4.

Fig. 4 presents Case No. II of recurrence of mastoiditis with keloid formation the previous scar. Underwent radical operation in 1939 when the keloid was also excised.



Fig. 5.

Fig. 5 is that of an adult male with a unilateral soft keloid. He refused to have surgical treatment. Case No. III.



Fig. 8.

Fig. 8 is that of Case No. V a female child of 4 years of age. Admitted with angioma, treated with radium and electrocoagulation.



Fig. 9.

Fig. 9 is that of a male aged 45 years. Admitted in 1940; Fibroangioma external canal. Treated by excision and diathermy coagulation. A mixed tumour on the palate removed at the same sitting. Case No. VI.



Fig. 6.

Before Operation.



Fig. 7.

After Treatment.

Fig. 6 and 7 present Case No. IV, male child aged 10 years admitted in 1938 with keloid lobule left ear. Treated with excision and radium.



Fig. 10.

Fig. 10 is that of a male aged 11 years; admitted with lipomacae in 1941; Refused surgical treatment. Case No. VII.



Fig. 11.

Fig. 11 is that of a male aged 20 years admitted with a sebaceous cyst, lobule left ear, which was excised. Case No. VIII.

structure. Fig. No. 5 is that of the latter category in an adult male, Case No. III. It is unilateral.

Lederer⁷ remarks that true keloids and hypertrophic scars are sometimes considered as separate entities while some believe them to be different manifestations of the same disease. In a true keloid the skin glands and hair follicles are retained except in the keloidal scars. There is a distinct difference between more or less of a neoplastic response of tissue in the form of a tumour mass and thickened scars. Eggston and Wolff¹ say positively that keloid and xanthomata are not true neoplasms but are borderline cases between inflammatory and tumour processes.

Excision and suture appear to be the most obvious and simple method of treatment. But there is a fear of its reformation in the new scar. Repeated applications of carbon dioxide snow is said to be effective for small tumours. X-Ray and radium have been found to give satisfactory results. Lederer⁷ recommends electrosurgical excision followed by radium for massive keloids and this was the method that was adopted for Case No. I when it recurred a second time. The nature, size and location of the tumour should determine the choice of treatment, always having a due regard to the symmetrical appearance of the auricles.

Of the four cases of keloids in this series one was a female and three were males, of which the former was bilateral. All of them appear to have arisen from the ear-ring scars excepting one which started from a mastoid operation scar.

Angiomata.—Angiomata are seldom met with in the external ear. They are mostly congenital and differ only in degree from the common birth mark or portwine stain.

Treatment depends upon the size and character and the coincident presence of similar lesions upon some other parts of the face. Complete excision is said to be the best procedure but may be attended with troublesome bleeding. Less drastic methods are continued pressure, ligation of afferent vessels, irradiation, electrocoagulation and injection of sclerosing fluids.

Fig. No. 8 presents a case of a congenital angioma in a girl aged about 5 years. It was a pigmented mass of irregular outline blocking up the entrance of the external canal and extending over the submaxillary region. 600 mgm. hours of radium was applied locally and was followed by electrocoagulation bit by bit at several sittings. There was considerable reduction in size and improvement in appearance.



Fig. 1.
On admission in 1937.



Fig. 2.



Fig. 3.

On Admission in 1939.

Fig. 1, 2 and 3 present case No. 1, a young girl with recurrent bilateral large keloids. First excised in 1935. Came back with recurrence in 1937 when she was treated with excision and radium. Readmitted with recurrence a second time in 1939.



Fig. 12.



Fig. 13.

Fig. 12 and 13 belong to Case No. IX. A male aged about 50 years. Presenting Epithelioma pinna of left ear, in the year 1943.



Fig. 14.

Fig. 14 is that of a female aged 60 years admitted in 1945 with a large ulcer, Malignant, basal celled carcinoma. Case No. X.

Fibroangioma.—Fibroangioma is also a rare tumour in this region. Fig. No. 9 is that of a case of this condition in a male aged about 45 years, of seven years' duration. It was of the size of a small lime and papillary in appearance protruding from the external auditory meatus of the right ear. It was operated 3 years back in a mofussil hospital where it appears to have been partially excised with subsequent further increase in size. There was bleeding readily on touching. It was slightly tender and painful. There was some fullness in the zygomatic region. A few dilated venules were noticed round about especially near the temple. There were no palpable glands. The tumour was removed with cold wire snare and cauterised with the diathermy current. The pathology report was that it was an angiofibroma showing inflammatory infiltration and surface ulcerated. He was re-admitted in about a month with the signs of the tumour growing again. Then it was completely excised and the base and margins were cauterized by diathermy. He had also a growth on the hard palate, a mixed tumour. It was excised at the same sitting. There was no further recurrence of either tumour when he reported himself at the clinic 2 years later.

Lipoma.—Lipoma is another rare tumour in this region. Fig. No. 10 is an example of this in a boy aged 14 years. He was discharged having refused operation.

Cysts.—Dermoid cysts are rare in the external ear. Sebaceous cysts are more frequently met with. They are usually due to injury or infection of the sebaceous glands which are specially numerous in the lobule. The cysts are usually tense the result of blockage and accumulation of sebaceous secretion. It may also contain hair and epithelial masses. These cysts are dissected out. The wound is closed with a silkworm gut drain, the walls of the sac having been painted with Tr. Iodine before closing.

(Fig. No. 11) shows a sebaceous cyst of the lobule which is the favourite site in a young man.

Malignant Tumours—Some of the old textbooks^{6,8} say that the external ear is seldom affected by malignant tumours. Lederer⁷ states that they are not uncommon. A study of recent literature^{2,9} would tend to support his opinion. They all agree however on one point namely that the extrinsic lesions are much more numerous than the intrinsic. It would further appear that these lesions of the external ear are more frequently seen by the dermatologist, radiologist or the plastic surgeon than the otologist in the American clinics. Carcinoma of the ear is said to be rare

in the negroes⁹. There is no statistical evidence as regards its incidence in India. It is perhaps very uncommon.

Like cancer elsewhere in the body, it affects the external ear seldom in individuals under the age of 50 years, though there are instances of its occurrence in early life recorded. The peculiar position of the auricle exposing it to the elements may be a predisposing factor. The following conditions have been mentioned by Towson and Shofstall⁷ as precursors to carcinoma of the external ear; chronic eczema, and other chronic dermatoses, trauma, frostbite, keratosis, sebaceous cyst, papilloma, chronic mastoiditis, with polypoid and chronic otorrhoea, cutaneous horns, psoriasis, lupus vulgaris, xeroderma pigmentosa, burns and razor cuts. Exposure to sunlight and ultra violet rays, heredity, old age, a background of degenerative changes are some of the other etiological factors mentioned by them. White males are more predisposed than the white females. Persistent mechanical irritation is considered the most important factor by Dench⁶.

Tragus, border of helix and meatus are the common sites. The most common pathological type is a squamous celled epithelioma. The typical lesion is described as a small ulcer with firm undermined edges or a crusted area. The sore bleeds readily when the crust is removed. The progress of the disease is insidious and slower than in the other regions of the body. Secondary enlargement of glands and systemic involvement are much less noticed. The pain and other distressful symptoms are less noticeable in the early stages. Prognosis is better and the results of treatment are more favourable under early radical surgical treatment.

If surgical measures are long withheld it may take on rapid growth spreading generally through the auditory canal to the tympanum or to the parotid in front or to the mastoid behind. Fig. No. 12, 13 shows an epithelioma still limited to the auricle and presenting the typical appearance of a malignant ulcer in a man aged about 50 years.

The basal-celled type of carcinoma appears to be the next most frequent. It is said to comprise about one third of the lesions⁷. It produces destruction by extension to the entire auricle the external canal, parotid, mastoid, dura and brain. Fig. No. 14 presents an extensive lesion of this nature in a female aged about 60 years (Case No. 10). The duration is 4 years. It started first as an ulcer at the lobular ear-ring. It gradually extended

and involved almost the entire lobule and a huge area of the neighbouring scalp. The right pinna was almost completely destroyed. The ulcer was roughly circular, margins slightly raised and hard and the base adherent. It was covered by dirty looking granulations and a foul-smelling discharge.

The lymphatic glands in the posterior cervical and the submaxillary regions were palpable but not adherent to the surrounding structures. B.W.R. : Negative.

Biopsy report.—Infiltrating carcinoma of the rodent ulcer type. This patient appears to have been discharged with instructions to get readmitted after a fortnight for treatment but she never got back to the hospital.

CONCLUSION

Tumours of the external ear are uncommon. The references on this subject are rather scarce and brief in literature. The subject has been briefly discussed above along with the presentation of a few illustrative cases.

My grateful thanks are due to Dr. R. Mahadevan, M.S., F.R.C.S., at present Professor of Surgery, Madras Medical College, Madras, for the loan of the clinical photographs of Case No. IX and to Dr. S. N. Gantayat, M.B.B.S., D.O., Superintendent of the K. G. Hospital, Visakhapatnam for permitting me the use of the hospital records.

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Vertigo*

BY

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When I took upon myself to read this paper 2 years ago, I thought I would be able to present to you my experience of a large number of cases. I am afraid expectation has failed me. Unless our physicians co-operate, I am sure every Otologist is going to meet with the same fate. In this country physicians will go on treating cases of Vertigo under one excuse or other. Hyper or Hypotension, Neurosis, Anaemia, Tobacconism, Hepatic conditions, indigestion are but a few of the garbes under which physicians justify their treating these cases. If at all these cases consult an otologist, it is because of a stray remark heard outside. In whole of Bombay I have come across only two physicians who never undertake to treat a case of Vertigo unless Meniere's is excluded by an Otologist. As against this I shall read to you what Gower said as early as 1898. "It is certain that in the majority of cases in which vertigo has been ascribed to other causes, these have only had an exciting influence, and the labyrinthine disease".

Mind you Gentleman Gower was a neuro physician and not an otologist. In 1861 a French writer named Meniere described the fatal illness attended by deafness vertigo and vomiting of a young girl in whom postmortem studies revealed a sanguinous fluid that was interpreted as haemorrhage in semicircular canals and vestibule; he later amplified this report by the addition of nine case histories showing deafness, tinnitus and vertigo. This triad of symptoms became known as Meniere's disease or more properly Meniere's. Symptom Complex and included all such cases where pathologic cause could not be discovered. At the time Meniere wrote: physicians were lumping together all cases which were characterised by vertigo, nausea, vomiting, deafness, under the diagnosis of "apoplectiform cerebral congestion" and were treating persons presenting these symptoms by means of copious blood letting and violent purgation. When Meniere presented the post mortem findings,

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I am sure he did not believe it to be haemorrhage in the labyrinth as the true and only pathology of the disease. His original description if followed in details according to his subsequent papers prove him to be a superb clinical observer with an open and wide analytic mind. To avoid the above tortures inflicted on poor sufferers of this disease all he wanted was, to show that the seat of the disease was in the labyrinth, and not either in the cerebellum or cerebellar penduncles. He pronounced favourable prognosis of life with which the condition is associated, and said that this disturbance is never the direct cause of death. Even Shakespeare knew the existence of this condition because in his play Caesar he first talks of falling sickness and later Caesar speaking to Anthony says "Methinks I am heavy on my right ear" etc. Early historical persons to suffer from this disease barring Caesar was Martin Luther, who to a man who complained of itch said "I would give 10 florins to change with you, you know not how distressing vertigo is. At this very moment reading letters give such buzzing in my ears that I am on the point of falling off my seat. On the other hand the itch is a useful thing". Dean Swift was also tormented by giddiness and was finally committed to mad house. He stubbornly argued with his physicians that the cause of his illness lay in his skull and not in his blood nor yet in his belly which they are treating. Only in the last decade postmortem studies have revealed the true pathology, to be a hydrops of the endolymphatic system especially of the ductus cochlearis, although utricle, saccule and ductus reuniens, may also be involved. Degenerative changes have been found in the maculae, cristae and spiral ganglion. The term endolymphatic hydrops more properly describes the pathological changes responsible for the symptoms.

The collective opinion to-day is that Meniere's disease is caused by an irreversible distention of the membranous internal ear which Brummer calls hydrolabyrinth in order to provide relationship to hydrocephalus. Although it was known that a hydrolabyrinth may be discovered in patients having suffered from spells of vertigo (Bruehl,¹ Alexander, F. and Manasse,² Mayer,³ Brunner,⁴ Yamakawa⁵), it was Hallpike and Cairns⁶ who stated, for the first time, that the hydrolabyrinth constitutes the essential morbid anatomy of a specific disease of the internal ear, viz., of Meniere's disease. The concept of Hallpike and Cairns was confirmed by several investigators (Rollin,⁷ Hallpike and Wright,⁸ Altmann and Fowler,⁹ Lindsay,^{10, 11} Cawthorne¹²). However, there are cases on record, having suffered from

dizzy spells, which did not show a hydrolabyrinth at autopsy (Hellmann,¹³ Berggren and Gray,¹⁴ Brunner and Grabscheid,¹ Arnvig¹⁶). The latter findings render the problem again controversial. According to the studies of Siebenmann,¹⁷ Herzog,¹⁸ Zange,¹⁹ Wittmaack²⁰ and others hydrolabyrinth is, in general, not a pathological entity, but the result of a serious labyrinthitis and for this reason, it is a comparatively frequent finding in congenital deafness ("Type Scheibe" after Siebenmann), in deafness due to cholesteatoma (Siebenmann, Nager)²¹ to tuberculous otitis (Herzog) to scarlatina otitis, in chronic progressive labyrinthine deafness (Manasse²²) and in other types of deafness. Wittmaack claims that a hydrolabyrinth may be caused not only by a serofibrinous labyrinthitis, but likewise by a hydrops of the labyrinth which consists of a distension of the membrane due to a hypersecretion of endolymph. However this does not imply that a serous labyrinthitis or a hydrops must invariably cause a hydrolabyrinth. According to Brummer it is rather a firmly established fact that a serous labyrinthitis may eventually be a reversible disease. Some otologists like Alexander even claim that serous labyrinthitis, in contrast to a purulent labyrinthitis, is invariably a reversible disease. For unknown reasons, serous labyrinthitis does cause eventually irreversible changes in the labyrinth and among these, an irreversible hydrolabyrinth. Herzog has emphasized that very virulent, particularly purulent infections never cause a hydrolabyrinth. Only those instances of serous labyrinthitis are supposed to result in a hydrolabyrinth in which the infection is of low virulence and is active for a long period of time as for instance the tuberculous otitis. If there is an abnormal amount of serous or serofibrinous fluid in the endolymphatic inner ear, the endolymphatic pressure increases, the membranous walls, particularly those which are not endowed with sensorial epithelium and nerves, become distended and eventually the sensorial epithelium is damaged. Since serous labyrinthitis is never a localized disease, the entire inner ear is involved. In other words, the increased endolymphatic pressure must be effective upon all walls of the internal ear. But the distention involves particularly and primarily the pars inferior, viz., cochlea and saccule, for various reasons: (a) the endolymph is chiefly produced in the cochlea; (b) in the cochlea and saccule there are thin walls, not endowed with sensorial epithelium and nerves, which may bulge far into large perilymphatic spaces, if the endolymphatic pressure rises; (c) there is no perilymphatic tissue in the cochlea and saccule, interfering with the distension of the membranous walls. For this reason, there is primarily

a reversible or irreversible distension of Reissner's membrane and of the free wall of the saccule, if the endolymphatic pressure rises. The influence of the accumulations of fluid upon the sensorial organs was ably analysed by Herzog and Zange who emphasize that Corti's organ and its nerves are more extensively and more rapidly damaged than the maculae and cristae.

The most significant feature, however is the distension of Reissner's membrane. The distended Reissner's membrane may be mobile or may be fixed in an abnormal position. The fixation may be mobile or may be caused by newly formed connective tissue which originates from the organization of the serous exudate, or by serofibrinous exudate. In the microscopic specimen the distended Reissner's membrane will be seen, therefore, in various position when the endolymphatic pressure has ceased. In extreme cases the enormously distended membrane is fixed towards the walls of the scala vestibuli, causing an enormous dilatation (ectasia) of the cochlea duct. In the vestibulum the increased pressure may even cause a rupture of the membranous walls. In less extreme cases a part of Reissner's membrane is fixed above the stria vascularis, the rest of the membrane is mobile. This is called "the high insertion of Reissner's membrane". In other cases, the entire membrane is mobile and wavy. Or, the distended membrane may sag toward the basilar membrane of the cochlea and may become fixed by fibrinous exudate to Corti's membrane, Corti's organ, external spiral sulcus and vascular stria, causing a considerable narrowing of the cochlear duct. This is called "collapse of Reissner's membrane".

The distension of Reissner's membrane is frequently associated with a similar distension of the free wall of the saccule and eventually with a marked degeneration of Corti's organ and spiral nerves. These findings constitute the hydrolabyrinth, which is a partial hydrolabyrinth because it involves cochlea and saccule but not the other parts of the internal ear. In more advanced cases the utricle and eventually one or more semicircular canals become likewise dilated. These findings constitute the complete hydrolabyrinth. The ampullae of the semicircular canals almost never become dilated (Alexander²³).

Credit goes to Hallpike and Cairn to be the first to state that a hydrolabyrinth partial or complete, represents the pathology of Meniere's disease. In cases of absence of an infection, regarding pathogenesis of the hydrolabyrinth they mention "that

the endolymphatic dilatation in these cases is due at any rate in part to some failure in the normal absorptive mechanism". This may be the result of fibrosis of the vascular tissue surrounding the endolymphatic duct. This concept is untenable because such fibrosis may also be found without hydrolabyrinth, and further because Lindsay's²¹ experimental evidence indicate that normal endolymph is probably not absorbed in the endolymphatic sac. Hallpike and Cairn apparently feel likewise not sure about their own concept because they continue by saying that "the primary changes may still be either an increase production of the endolymph itself or else some inscrutable type of alternation in its physico-chemical constitution".

In a case of Brummer, where the patient died 14 days after the diagnosis of Meniere's disease was made, the following post-mortem changes were found:—Labyrinths were filled with a fluid which was neither pus nor peri nor Endolymph, which had rather the appearance of serofibrinous exudate, containing a few lymphocyte-like cells. This raises the question of the origin of fluid. The fluid was not produced by a hypersecretion of the stria because the fluid contained fibrin and cells. For this reason the microscopic findings cannot be classified as a hydrops labyrinthii. However the term "serous labyrinthitis" is also not quite correct because in this case there was no infection of either tympanic cavity, meninges or blood stream which could have caused an inflammation of labyrinth. One would like to know the factor which rendered the blood vessels of the labyrinth permeable in this case. Obviously the concept of an allergic or hormonal influence upon the blood vessels immediately turns up. Brummer terms this otitis interna vasomotoria (vasomotor labyrinthitis) to designate the collection of serofibrinous fluid in the internal ear in instances which have no infection in the tympanic cavity or in the meninges or in the blood stream (Brummer²⁵). As the arteries of internal ear are the branches of the cerebral arteries, the headache frequently is associated with Meniere's attacks and which even may replace the dizzy spells. Encephalographic studies, performed immediately after the attack failed to reveal any pathology in the posterior cranial fossa.

According to Asherton of London aural vertigo rarely develops before the sufferer has celebrated his demi-centenary. Cases occur where the sudden and completely permanent unilateral deafness of the perceptive (Nerve) type develops. He has observed cases after an attack of influenza, after herpes zoster oticus, after mumps, after acoustic trauma and in the elderly

when sudden vascular occlusion (embolism, thrombosis) must be assumed to be the cause. In his opinion, vascular occlusion whether spasmodic (temporary) or embolic or thrombotic (permanent) is the cause in all the cases. The main blood vessel (end artery) to the cochlear nerve is occluded, and paralysis of the cochlear nerve (usually the high tone branch) results. Consideration of the blood supply to the cochlea throws some light on the possibilities. The labyrinthine artery always arises as a branch from the anterior inferior cerebellar artery: "It is never found as an independent artery of the basilar" (Nabeya). The vestibulo-cochlear artery arising from the bifurcation of the common cochlear artery is always a terminal end artery (Nabeya). It is distributed to the basal coil and adjacent parts of the middle coil of the cochlea (the region concerned with perception of the high frequencies). Occlusion of this vessel will produce a high tone defect. From this division a constant branch (the ramus vestibularis) arises and is distributed to the saccule and adjacent part of the labyrinth and semi-circular canal. It is in this latter distribution that the aetiology of aural vertigo (Meniere's syndrome) is to be sought.

1. Occlusion distal, i.e. peripheral, to the ramus vestibularis will leave the semi-circular canals or vestibular apparatus unaffected.
2. Occlusion proximal or centripetal to the ramus vestibularis will affect the vestibular apparatus.

Unilateral occlusion will account for the onset of aural vertigo (Meniere's syndrome), some time after the hearing has been affected. The series of audiographs show that in cases of aural vertigo there is always advanced deafness of the high tone type (perceptive deafness) and that the perception for the higher frequencies has invariably been completely lost.

Gradual occlusion of the vestibular cochlear artery commencing peripherally and spreading centripetally will produce gradual loss of perception for high tones—the presbyacoustic defective ear; when the spread extends beyond the ramus vestibularis, the equilibrium is affected, and the case now develops aural vertigo or Meniere's syndrome. Thus it explains why regular administration of nicotinic acid will control the attacks by ensuring an adequate blood supply through this branch. To sum up, the blood supply to the cochlear division of the VIIIth nerve—the vasa nervorum—includes the cochlear vestibular division, and a part of the labyrinthine, i.e. the region

of the horizontal canal. Consequently vascular occlusion commencing peripherally affects in sequence (a) the high tone branch of the cochlear nerve—presbyacoustic defective ear; (b) then in addition the low tone branch of the cochlear nerve (the presbyacoustic deaf ear): (c) if the occlusion extends centripetally, the branch of the blood vessel to the horizontal canal.

While the vascular occlusion remains below level (a), or if the changes are symmetrically bilateral, aural vertigo is not possible, but if, on one side only, the occlusion does rise to level (c) then a Meniere's attack is precipitated.

To clinch this theory it is necessary to prove that in the first Meniere's attack one horizontal canal is thrown out of action.

This theory will explain why it is that the patient deaf for a long period (with unilateral or bilateral nerve deafness) will suddenly, unexpectedly and for no apparent reason get a most violent attack of vertigo. The vascular occlusion has now extended to the level where the vestibular branch of the vestibular cochlear artery has become involved.

Lyman of St. Louis has analysed the different opinions regarding the confusion caused by pathology of the disease and the confusion resulting from the indiscriminate use of Meniere's name.

Author A states: "Meniere's disease is not a disease sui generis but a typical reaction of a predisposed labyrinth to an almost infinite series of exo-and endogenic influences, which, however, have this in common, that they express themselves through the vessels, especially the capillaries".

Author B says: "Meniere's disease or perhaps more correctly Meniere's syndrome is characterized by a sharply defined group of signs and symptoms that is almost pathognomonic: Sudden and recurring attacks of dizziness, nausea, vomiting, partial deafness and tinnitus. The two essential features of the syndrome are dizzy spells and deafness. Meniere's disease may be unilateral or bilateral. Pseudo-Meniere's disease is Meniere's disease minus the deafness and tinnitus. When dizzy attacks precede unilateral deafness and tinnitus the diagnosis of pseudo-Meniere's disease must be made. If a patient has recurring attacks of dizziness, the diagnosis is either Meniere's disease or

pseudo-Meniere's disease, other signs or symptoms notwithstanding. That there is an organic lesion is, of course, evident at once from the omnipresent deafness.....Since both the vestibular and cochlear divisions of this nerve are involved, it is evident that the lesion is in the nerve itself and not in the end organ".

"Meniere's disease has probably nothing to do with the inner ear. It is merely an explosion of the functions of the inner ear and is due to lesion of the auditory nerve.

"We know of no cause of Meniere's disease. Certainly there is no infection. Never does Meniere's disease follow infections of the middle ear. And so far as we have been able to learn from our series of cases there has been no focal or systemic infection to which this condition might be ascribed. It is necessary to assume that we are dealing with a lesion not in the middle ear nor in the inner ear, but rather in the auditory nerve. A lesion of the inner ear could not affect both the acoustic and auditory (vestibular?) divisions of the eighth nerve".

Author C—States that a disturbance of the chemical or nervous control of the auditory artery causes Meniere's disease.

Author D—States that in Meniere's syndrome there may be either a primary vasodilator or a vasoconstrictor mechanism at work. Later in the same article he speaks of the treatment of patients with "Meniere's disease" of the vasoconstrictor type.

Author E—States that microscopic studies of the temporal bone in cases of Meniere's syndrome show a dilatation of the endolymphatic system, especially in the cochlea and saccule and abnormalities around saccus and ductus endolymphaticus where the absorption of endolymph is believed to occur. The eighth nerve showed no abnormalities. He further states that it seems justifiable to regard this work as establishing a morphological basis of this disorder.

Author F—States, "The term 'Meniere's disease' as used in this report is not synonymous with 'Meniere's symptom complex' and 'Meniere's syndrome' as they have commonly been used in the past. The term 'Meniere's disease' is herein restricted to this (hydrops of the labyrinth) entity".

Author G—Believes the condition is due to bacterial intoxication or the labyrinth and describes it as "focal labyrinthitis".

Author H—Reported as Meniere's disease a series of cases of epidemic meningitis and two cases of leukemia with sudden deafness and dizziness and one case of tabes with sudden deafness.

Author I—Suggests that a localized central lesion is responsible for Meniere's symptom complex.

Author J—States that, at present, Meniere's disease is used for any collection of aural symptoms for which the user does not know some other name.

Author K—States, "If the attack of vertigo is characteristically sudden and severe and if it disappears, only to recur again, I believe the condition should be referred to as 'Meniere's syndrome' even in the absence of tinnitus and deafness".

Author L—Suggests that Meniere's disease is a local labyrinthine process most likely an altered permeability of the capillaries, resulting in local oedema. He does not believe loss of hearing is necessary for the diagnosis.

Author M—Ascribes the condition to a disorder of normal conditions of pressure and chemical constitution of the endolymph.

Author N—Says, "We are justified in assuming that there is no primary cause of Meniere's syndrome".

Author O—In an article on hydrops of the labyrinth uses the term "Meniere's disease" for this condition simply as a tribute to Meniere, although the pathological condition is quite different.

And so on ad infinitum.

If such confusion prevails among the writers on this subject, what must be the state of mind of those for whom I plead the readers?

As one sees, the pathology of meniere is still fluid, and having put before you different opinions I shall proceed.

Clinical Features.—Of the 102 cases under review 72 were males, 30 were females. 65 cases i.e. 65% occurred between the ages of 30 and 60, 14 cases between the ages of 20 and 30 and 23 cases occurred over the age of 60 years. Signs and symptoms were more or less common except that both the intensity and their order of appearance varied greatly. In all cases there was

periodic attacks of vertigo usually attended with nausea, but vomiting only occurred in 22 cases. Deafness of perceptive type of varying intensity and of fluctuating type was complained of in 62 cases, mostly unilateral, only in 5 cases bilateral. Bilateral tinnitus in 60 cases and unilateral in 20 cases. The description of tinnitus practically varied with each patient, but it was fluctuating in about 40 percent of cases. Psychological disturbances of a large variety were noticed as both the vertigo and tinnitus incapacitated the patients, kept them back from their daily duties and the onset of next attack of vertigo was alarming. The social handicap following deafness made them shy and seclusive.

The nature, intensity and duration of the attacks varied with each patient, and from attack to attack even in the same patient. The intervals between the attacks varied a great deal, the common description being a series of attacks at close intervals or even on the same day followed by a relatively long period of total absence for months or years.

The attacks were never uniform in intensity, often they were transient followed by a series of sudden and severe ones. Usually the pattern was of mixed type.

No particular cause or time was attached to these attacks. In my series a very large number of patients did complain of attacks on getting out of bed either in the middle of the night or morning. Quite a number of patients kept on getting attacks even while resting in bed.

About 40% of cases did mention of warnings prior to attack. The warnings cited were. (1) A headache of burning or bursting type. (2) heaviness round the ear. (3) increased intensity of tinnitus, or onset of tinnitus in cases where it had disappeared. (4) apathy for loud sounds or (5) sudden increase in deafness. These premonitory symptoms persisted during attacks, and in some cases continued even long after. Aura preceded the attacks by few hours to minute.

72% of cases complained of objects moving round while only 20% felt it subjectively. Sometimes the attack being very severe, the patients being unable to open their eyes were not in a position to describe accurately. In 44% of cases, vertigo lasted for less than 5 minutes while in 56% over five minutes, and in some cases the period mentioned was hours. Vertigo has been

described as faintness unsteadiness, staggering, weakness, backward swaying, and sensation of falling, by different patients. In some patients the attacks were so transient that they did not even need to sit down, while a good number had to be carried home. One of my cases a lorry driver after the attack took the lorry to the destination, but would not consent to drive any more. Some of the cases where attacks occurred in the middle of the night, were only a little worse in the morning after a sound sleep for the remaining part of the night while a good few felt the after effects for some days.

Vomiting occurred in only 22 of my cases while nausea was complained of in large number of cases. The accompanying pallor, cold sweats and slow and thready pulse are ascribed by Cawthorne to a strong vagal storm provoked by impulses spreading to vagal centres from nearby vestibular nuclei.

The two associated symptoms of deafness and tinnitus were constantly present in well established cases of Meniere's. The deafness which was of perceptive type was fluctuating between attacks. These variations could be attributed to the varying endolymphatic pressure in the early stages. Once the cochlear membranes are permanently damaged and lose their resilience the deafness becomes permanent. The clinical observation proves this as I found that in well established old cases where patient had repeated attacks the deafness was permanent and stationary. Cawthorne speaks of discomfort due to distortion (I) of loud sounds particularly when they are high pitched, but I have not been able to confirm this in my series. In my series some patients did complain of aversion for loud sounds.

Loss of consciousness was noticed only in a single case. This must be a rare phenomenon.

The impairment of vision during severe attacks due to violent eye movements were complained of in about 25% of my cases and diplopia of a very short duration in one case only.

Because of the retching and nausea severe pains in the upper abdomen or chest have been complained of by several sufferers, which have been often considered as of coronary origin. Cawthorne quotes of 3 cases where abdominal section has been done before the true nature of the disturbance suspected.

Headache was present in 58% of the cases under observation. Some patients have complained of heaviness either in or round the ear followed by feeling of numbness.

Hall Pike's Caloric tests were performed in all cases by myself, even though some of the cases were very kindly done by Dr. K. U. Shah. In quite a number of cases, these tests were repeated by me every 4 to 6 months. Goltz was the first to reason, since interference with the labyrinth causes dizziness, the normal function of the labyrinth is to control equilibrium.

It was Bruer who first connected nystagmus during and after turning, in both animals and man with stimulation of semi circular canals. He stated that whereas the canals are stimulated by rotary movements, the otoliths are stimulated by movements of the head out of the horizontal plane and by linear or progressive movement. Various rotation tests developed by Kridle Janes Warner and other were not done in my cases as they have the disadvantage of stimulating both labyrinths simultaneously as against the caloric test where each labyrinth is stimulated independently. It has got advantage over galvanic test in that it stimulates only the end organ and not the vestibular nerve as well. In the caloric test carried out at the Queens Square hospital London, the eye reactions which result from alternate hot and cold water stimulation are compared. Cawthorne Fitzgerald and Hall pike use water at 7°C above and 7°C below the body temperature because they believe these to be comparable stimuli. They report that thus stimulating horizontal semi circular canals with alternate hot and cold stimuli when it is in the vertical plane with its ampulla up (patient lying supine, face to the ceiling), the reactions which result from the ampullopetal and ampullo-fugal flow of endolymph are equal. It is with Caloric test that one can isolate the damaged labyrinth with a reasonable certainty. It is the most consistent sign of a vestibular disorder also revealing the extent of damage. This helps ideally in basing the treatment particularly when one proposes of the destructive type as labyrinthectomy. In the series under valuation this test was done on 80 cases as the rest did not consent. Of the 80 cases 62 showed $\times$ ive Caloric by that meaning either of one labyrinth or both were damaged. In 15 cases the reactions being very severe, patients refused to co-operate. 29 cases showed paresis of left canal while 27 cases of the right canal and in 6 cases both the canals were seats lesion.

Audiograms were advised in all cases but only 72 cases consented. In 16 cases the tracing were within normal limits, while 56 cases showed deafness of perceptive type (high tones) in one or both Ears. It was interesting to note that, while in 41 cases both Caloric and audiographic results tallied, this was

not so in 31 cases where in 14 cases caloric revealed damage to the labyrinth. Audiogram showed normal hearing and in 17 cases vice versa. Loss of ABC was present in 76 cases.

In three cases there was history of past injury to skull. History of allergy was noted in 35 cases.

The diagnosis was seldom in doubt in well established attacks with vertigo, perceptive deafness (getting worse with each bout) and Tinnitus. The paroxysms of vertigo alternated irregularly with periods of freedom. Disorders of central nervous system were eliminated in all cases by physicians. The diseases of C.N.S. include tumour of 8th nerve, disseminated sclerosis which was present only in one of my cases, tumours of the brain stem, lesions of the posterior cranial fossa and intra cranial vascular disturbances. Cases with disorders of labyrinth due to other causes than endolymphatic hydrops were excluded from this series e.g. otitis media, labyrinthitis.

According to McNally in differential diagnosis of central vertigo, it is important, where selecting vestibular tests, that the examination should include both the vertical and horizontal semicircular canals because in some of the intracranial lesions one set of canals may be affected and the remaining set of canals may be normal. For instance, in certain posterior fossa lesions there may be complete absence of labyrinthine response on one side and absence of response from the vertical canals on the opposite side while horizontal canal on that side continues to respond.

Vertigo may be a symptom of Toxic disorder as one finds in septic conditions, after administration of drugs e.g. Streptomycin. It may be a manifestation of a nervous disorder e.g. anxiety neurosis. Otologists must be careful not to try to fix some cause to the symptoms, as that would aggravate the neurosis. It is a symptom of hypertensive disorder.

Mils Atkinson of New York lays stress on intradermal histamine test. He says it satisfactorily separates a small group of patients who are sensitive to histamine from such a larger group of patients who are insensitive and that the effective treatment of these two groups radically is different. He uses 0.01 mg of histamine hydrochloride ("Imido Roche") and this dissolved in 0.1 cc of water gives a 1:17,544 solution of base. The criteria adopted for a positive reaction were a wide area of erythema $1\frac{1}{2}$ to 2 inches, a large wheal $\frac{1}{2}$ to $\frac{3}{4}$ inch and presence

of long trailing pseudopodia an inch or more in length which appear in 3 to 5 minutes begin to fade only after 20 minutes and are still apparent at the end of 30 minutes. Small buds at the edge trail wheel which fade in 10 to 20 minutes are not assessed as positive". 36 of my cases with history of allergy having permitted the test were submitted to it. 26 of these showed positive reaction.

All my cases except five were put on conservative line of treatment Salt free diet fluid intake restricted to about 3 pints a day. Patients were asked to keep off bread, butter salted and tinned provisions. Seeing allergy playing such a prominent part, every single case was advised some antihistamine drug preferably Phenargan.

Vasodilator in the form of Priscol and lately Prescopen were prescribed in all cases and all patients were advised to report in 3 months' time. About 25 to 30% of cases responded favourably to the treatment. Attacks of vertigo were either less frequent or absent, or diminished in intensity-relief from headaches. Tinnitus and deafness persisted in all cases without any relief. In rest the symptoms persisted with the same or increased intensity. In all cases general E.N.T. examination was carried out and focus of sepsis was eliminated wherever present. There was no occasion to try intravenous histamine as recommended by Sheldon & Aston as not one patient had violent vertigo during the investigation. I recommend this to my colleagues in case they come across a suitable case as I have seen good results following this treatment both at Queen's Square and Kings College Hospitals, London.

Nagar of Zurich University recommended use of Vitamin A Injection twice a week for 6 months. In his series of 113 cases, hearing improvement for pure tones was noted in 38% for speech in 39%. Relief of Tinnitus occurred in 27% and marked improvement in 30%.

In educated class of patients I have found a heart to heart chat explaining the cause of the condition is very helpful. An assurance of favourable prognosis as far as mortality is concerned allays the fears and doubts that may have been suggested or impressed upon by previous professional or friendly counsel.

Today the previous perilous surgical treatment of the type of vestibular nerve section has been replaced by more modern ones directed at the site of the lesion (endorgans) and fortunately free from risks of mortality.

In 1927 Prof: Portmann of Bourdeaux University came out with puncture of the succus Endolymphaticus. This operation though successful in his hands, has not met with the same success in other hands. I had the good luck to assist him doing this operation on two of my cases of the present series during his last visit to India. Until about 6 months ago, on my inquiry I was told they were both free from attacks of vertigo though the Tinnitus persists. 12 months is too short a period to judge the results.

Day started with passing a needle through a trephine opening in lateral semicircular canal and coagulating the membranous labyrinth. The hearing deteriorated progressively in all cases. In one of his cases the hearing which showed average loss of 70 decibels before operation improved to within normal limits and until 1947 had remained so far 4 years. This led him to believe that the technique could be modified to give a better prognosis for the maintenance and improvement of hearing.

Cawthorne of London improved on the results by submitting the sufferers of this condition to an operation of Labyrinthectomy. Barring an early post operative nystagmus and exaggeration of symptoms for first two to three weeks the results are very striking. Through either an endaural or post aural incision external semicircular canal is exposed and opened up under magnification of 10 diameters through an operation microscope. Membranous canal is picked up with a Cawthorne's dissecting forceps. If subsequently the removed canal is put in liquid, one finds the curve of the canal maintained and easily confirmed. Five of the cases of my series having consented were submitted to this operation. In spite of the wound healing by first intension, patient had to be kept in the hospital for over two weeks because of exaggeration of symptoms. With the exercises recommended by Mr. Cawthorne and Avomine tabloids the symptoms subsided. In all 5 cases bilateral lesion was excluded and ear loss was on average below 65 to 70 decibel loss. The point raised against this operation is the loss of cochlear function. But if one tries to elicit proper history from these patients, they always complain of high tones being jarring on the Ears and causing a lot of discomfort and annoyance. In the words of Mr. Cawthorne it is like a pilot of twin engined plane who, when he finds that one of the engines is partially damaged, would shut it off, and fly on single engine rather than have constant annoyance of an additional partially damaged one. A half working organ is more of nuisance than a help and particularly in a labyrinth, where distorted noises act as a handicap than help. I have seen patients after this operation

follow their occupation of window cleaning, and even riding a cycle in streets of London. One of my cases is driving a motor lorry in Bombay.

Lately much attention has been focussed on sympathetic nervous system. If one injects Stellate Gengtion one would immediately notice following changes.

(1) Prominent blood vessels on drum.

(2) Hearing loss would be reduced by about 15 decibels particularly for low tone. Stellate ganglionectomy has been done, but the results are not lasting. Late Mr. Garnett Passe of London had originated an operation on the same basis. He used to cut white ramii communicantes at the level of the third dorsal and covering up the cut ends with silver clips to prevent regeneration. Results have been striking in his hands but his efforts were unfortunately cut short by a premature end of his life.

Lempert has come out with another operation for decompression of Endolymphatic hydrops. According to him removal of stapes and round window membrane causes complete degeneration of the endolymphatic labyrinth and the organ of corti thus preventing the recurrence of endolymphatic hydrops. Of his 10 patients so treated 9 were completely cured from both Tinnitus and Vertigo and one from Vertigo only.

Lately Rosen of America advocates section of Chorda Tympanii nerve and teasing of Tympanic plexus through a semicircular incision near external ring.

I have found that the persistent attacks of Vertigo and Tinnitus are highly demoralizing to the patient and lack of knowledge on the part of the family doctor ruins the prognosis still further. The vague symptoms presented by these patients, particularly in India where illiteracy is pronounced and the absence of physical signs during interval, coupled with deficient knowledge and want of patience on the part of either the attending family doctor or otologist make the diagnosis of neurosis, nervous break down or any other functional disorder very tempting. It will not be out of place to recommend my colleagues that one has found, a little reassurance about the occurrence of next attack, security of life, and a favourable prognosis as far as mortality is concerned goes a long way in easing the mind of the patient, in avoiding the fright and looking upon the next attack with a bit of confidence.

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OBITUARY



DR. HEMANTKUMAR LAXMISHANKAR VAIDYA.

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Chief Medical Officer, Gohilwad District, Saurashtra, India; Superintendent, Sir Takhtasinhji Hospital Bhavnagar; Superintendent of Vaccination and Chairman of the Red Cross Society, Bhavnagar.

Son of Laxmishankar Govindram Vaidya, Ayurvedic Physn.

Born at Jetpur 1901. Died 19th February, 1953.

Educated—Primary Middle School, Jetpur; Alfred High School, Bhavnagar; College, Junagadh; Grant Medical College, Bombay; Stood second in final M.B.B.S. and was Gold and Silver Medalist in Surgery and Medicine.

House Surgeon, J. J. Hospital, Bombay (1925); Clinical Assistant at Golden Square Ear Nose Throat Hospital and Central London Ear, Nose, Throat Hospital (1926—1927); St. Thomas' Hospital, London (1927); London Hospital Medical College (1928); Royal Infirmary Medical College, Edinburgh (1929); Honorary Surgeon, Wadia Children's Hospital and Professor of Surgery, National Medical College, Bombay (1929).

Chief Medical Officer, Bhavnagar State; Superintendent, Sir Takhtasinhji Hospital, Bhavnagar; Superintendent of Vaccination and Chairman of the Red Cross Society, Bhavnagar State (1930).

Introduced Maternity and Child Welfare Scheme for villages (1931).

Planning and supervision of the expansion of Sir Takhtasinhji Hospital of 60 beds to 230 beds (1936-'39).

Honorary F.C.P.S., Bombay (1945).

Founder and President of the Indian Medical Association, Bhavnagar.

OTHER NEW WORKS DONE BY HIM WERE:—

Planning and Supervision of new Tuberculosis Hospital of 120 beds at Jinthri, via Songadh (Saurashtra); the Mental Hospital at Akwada (for 16 patients); Dispensaries in 3 small District Towns, 6 Maternity Hospitals in District Towns and 22 Village Medical Relief Centres each working in a radius of 10 miles; A Nurses' Training Centre and a Blood Bank in Bhavnagar.

He read a Paper on Urinary Lithiasis at Surgeons Conference, Lahore (1945); Paper on Enlarged Prostate at Medical Conference, Rajkot (published in the Indian Medical Journal, and again on the same subject at International Conference of Surgeons, Bombay (1950); Paper on Acute Abdomen at the Medical Conference, Rajkot (1948); Was President of the Surgical Section of the All India Medical Conference at Ahmedabad in 1953.

He belonged to a family of hereditary Ayurvedic Physicians, well known in Saurashtra; in the best traditions of Hindu Culture, that looks upon medical aid as a selfless religious duty, he worked in the full belief that his knowledge and hands were for the service of God. He was known for studied care of the poor and villagers, often asking Mrs. Vaidya to send them special diet from his own house. People used to come to him from all parts of Saurashtra and even Gujarat. It became a common belief that patients felt better from his very presence, and it sometimes happened that people preferred to be under his care rather than follow his advice to go to Bombay where there were greater facilities for their treatment. He used to say to his colleagues that such psychological element deserved investigation and development by Medical Science.

On the morning of 19th February 1953 while on duty at the Hospital he simply said to his assistants that he was "feeling giddy" and on going to help they found his heart had ceased to function. Rarely has the death of a medical man caused such shock and deep sorrow to his colleagues, patients and all who knew him. The Maharaja and Maharani of Bhavnagar to whom he was personal physician looked upon him as one of the family and a dear friend.

He leaves behind his widow, four sons and two daughters, the eldest son is studying medicine, one is in business and the others at College.

A Preliminary Report on the Treatment of Sub-Mucous Fibrosis of Oral Cavity with Cortisone

BY

DR. R. VENKATA RAO & DR. P. RAMA RAJU.

Every year we see on an average 4 to 5 cases of submucous fibrosis of the Oral cavity. This condition is characterised by slow progressive inability to open the mouth; and some times the two jaws are stiff and the patient finds it difficult to introduce even a morsel of food into his oral cavity and very often the food is almost made into a thin paste and swallowed. The characteristic features are:—(1) the movements of the lower jaw is restricted; (2) the colour of the mucous membrane of the oral cavity is whitish instead of pink; and (3) on palpation the tensed-portion of the mouth are fibrous in consistency. In the earlier stages the soft palate and the faucial pillars seem to be involved first. In advanced cases this appearance has been traced down as far down as the pyriform fossae. These are our findings:—

Case.	Age.	Sex.	Blood Picture.	W. R. or Kahn.	Biopsy.	Remarks.
1. Mrs. A	38	F	Normal.	Negative.	Not done.	...
2. Mrs. B	18	F	RBC: 3.75 m. HB: 70% WBC: 11,800 Lymp.: 40%	Negative.	do	...
3. Mrs. N	19	F	RBC: 2.8 m. HB: 50% Hypochromic.	Negative.	Done.	Increased fibrous tissue sub-mucosal.
4. Mrs. M	19	F	RBC: 3.45 m. HB: 65% Lymp: 35%	Negative.	Done.	do
5. Mrs. W	18	F	RBC: 4 m. HB: 70% Lymp.: 40%	Negative.	Not done.	Extension downwards pyriform fossae.
6. Mrs. L	40	F	RBC: 4.0 m. HB: 60% Lymp.: 32%	Negative.	Not done.	Dental sepsis *
Mr. L	25	M	Normal.	Negative.	Not done.	...

Cases No. 1, 2, 3, 6 & 7 were treated with cortisone. Case No. 2, relapsed after three months. A maintenance dose of 20 mgm. per day was readministered and the recent report is that she has maintained the progress.

VENKATA RAO & RAMA RAJU

Case No. 6, developed slight edema (passive) after a total dosage of 1500 mgm. The Cortisone was discontinued for a week and again resumed. She is doing well.

Case No. 7, developed edema of the entire body after 1700 mgm; Cortisone was stopped for 5 days and then resumed.

On an average 2000 mgm. of Cortisone mostly by the oral route has been administered to every patient within a period of 3 weeks. Wherever anæmia is present appropriate treatment for the condition is simultaneously administered.

Gradual vascularisation can be clearly seen under the mucosa. The central part of the oral cavity gets vascularised last. With vascularisation the fibrous tissue becomes more elastic and allow the lower jaw to resume its movements.

All these cases are under observation. Case No. 1, is the earliest since September, 1952. We feel reluctant to draw any definite conclusions now.

V. Subramaniam, Madras.—(1) Frequent ulcers in the mouth pre-disposes to this condition.

(2) Did you get any bad side effects of cortisone in those cases—?

Dr. Misra, Lucknow.—(1) Early stage—of ulceration patient complains of burning sensation in the oral cavity and throat.

(2) Late stage—Fibrous tissue replacing muscular tissue—Cortisone cannot be of help, since it is not possible to regenerate muscular tissue which is already replaced by fibrous tissue.

P. S. Lalchand, Delhi.—This condition was seen by me in Nepal in 1950, and in large numbers (Fifteen in 25 days) rich and poor had their malady.

Only thing abnormal we noticed in that country was unfiltered water from river most of them drank—Vitamin deficiency was ruled out as rich and poor alike had it—Tissue examination showed only fibrous tissue + + +. It was suggested that the condition was? Silicosis Age limit was from a child of Eight years to a man of sixty.

All the cases seen by me were Males.

A. H. Siddiqui, Hyderabad.—One of the female cases of mine with diffuse sub-mucous fibrosis of oral cavity also complained of dyspnoea of about 6 months duration. Is this a symptom distributed with mucosal manifestation? was dyspnoea a feature of the cases?

Dr. R. A. F. Cooper, Bombay.—We in Bombay get a large number of these cases. So far this condition has been a despair—we have tried different treatment without any result. Our investigations have been through but we have failed to find out the causes. I am happy that Dr. Rao has been successful with Cortisone but I do not believe we have reached our goal. As after relief because of Cortisone the disease might reoccur.

Early symptoms of this disease have been noticed by us—they simulate stomatitis, relapsing ulcers all over the month—Blood picture shows anæmia and oral symptoms simulate those following anæmia. The speaker seems to have missed these.

Dr. S. G. Joshi, M.S., Bombay.—1. Ulceration—stomatitis—is not the same in distribution in cases of sub-mucous fibrosis—as compared with cases of Vit. B complex and deficiency:—

It is in the nature of vesicular eruption on the hand and soft palate and on the pillars of the tonsils.

They erupt and granulate—They show minute ulceration in the wall up with fibrosis.

2. There are two types of cases—symptom less—and fibrosis is only accidental during a routine examination.

The symptoms in the next group vary—

(1) Inability to eat pungent articles.

(2) Varying degrees of difficulty in opening the mouth—in extreme cases—almost leading to Lock jaw.

(3) Section taking for biopsy exam. is very difficult. It shows only fibrous tissue and no further indicative information.

(4) I have not been able to do a single post mortem exam.—which would show the degree and extent of fibrosis and this extends to and involves the deep muscles of mastication.

(5) A culture from the vesicle is worth while during an acute attack.

(6) How long the effect of cortisone lasts—The usual cortisone effects are short lasting.

(7) I would request other members to carry the following investigation in each case—as we are doing at present at K. G. M. Bombay.

(a) Gastric analysis. (b) Total Blood count. (c) Kahn test. (d) Stool exam for ch. dysentery. (e) evidence of deficiency disease.

"Clinical record of a case of Suppurative Otitis Media showing many intracranial complications"

BY

Dr. R. S. SETH.

This case of chronic suppurative otitis media is recorded because it shows more than one complication of the disease namely, Mastoiditis, lateral-sinus-thrombosis, labyrinthitis and meningitis. It also shows that it is not necessary in every case to open the sinus and ligate the internal-jugular-vein.

K. R. 11 years male child, was admitted to the G. M. Hospital as an emergency on 18—9—53 at 6-30 p.m., with pain in left ear and fever for 15 days, headache and vomiting for four days. History of past illness revealed, otorrhoea off and on since childhood, during which time he had two acute exacerbations (dates not known), and was treated with penicillin, sulpha drugs and some ear drops.

15 days back the child got severe pain, in his left ear with increase in discharge, repeated bouts of high temperature with rigor. He was treated with antibiotics and local fomentation by some general practitioner. The temperature and pain subsided in five or six days time, but the discharge continued. Condition went on deteriorating. The child was brought to the hospital in a semiconscious condition.

The general examination showed the child to be semiconscious and seriously ill. He could be roused with difficulty and again lapsed into deep slumber. Tongue was dry and coated, the temperature ranged between 101 F. to 103 104 F, pulse 110 p.m., Blood pressure 10 m.m. of Hg. Systolic and 68 diastolic. Nervous system examination showed very slow cerebation, uncooperativeness, cranial nerves normal, pupils equal and reacting normally on both sides, deep reflexes brisk, rigidity of the neck ++, spontaneous nystagmus present on right side, Kernig's sign positive. Other labyrinthine function tests were not done due to danger of flaring up the condition.

Local Examination.—Left ear pus + + +, thick and yellowish, no trace of tympanic-membrance seen. Right ear full of granulations. Membrane not seen.

Investigations.—Total WBC. 15,000 per c.m.m. Diff. WBC count—Polys 90%, lymphos 10%. Urine—Normal.

Treatment.—Patient was immediately put on penicillin (4 lacs units state and 1 lac units six hourly). Dial 1 tablet B. O.

On 19—9—53 radical mastoidectomy was done under general anesthesia through post-auricular approach. Antrum was opened, tegmen tympani and antri were removed, and the dura of the middle cranial fossa exposed in an area of $\frac{3}{4}$ " x 1". It was greyish in colour and covered with granulations all over. The perisinus plate was necrosed. Sinus, was exposed upto the turn. It was greyish in colour and covered with granulations. Palpation revealed it to be inelastic. On aspirating the sinus only a few drops of fluid were aspirated. The sinus was then opened by a fine knife for about $\frac{1}{4}$ cm. It was fibrosed and organised, no lumen was found. Therefore, it was not further tackled. Attic was opened and was full of granulations. Incus and malleus were necrosed, loose and were covered with granulations around. They were removed with the granulations. Posterior meatal wall was lowered flush with the floor. Packing was done through external auditory meatus, the postauricular wound was completely stitched and sterile dressings applied. The patient was given sulphadiazine 1 tablet Q.I.D., and penicillin 1 lac units every six hours (postoperatively).

Progress.—Vomiting stopped after operation, but the temperature and neck rigidity persisted. The patient still had a slow cerebation. Lumber puncture was done. The C.S.F. was under tension and slightly turbid. Culture of the fluid was sterile. No pus cell or organisms could be found. Protien 300 mg., Chlorides 650 mg. per c.c., 21—9—53 temperature continued, headache + +, cerebation slow, lumber puncture was again done. C.S.F. was under tension but clear. Blood culture was done and was sterile after 48 hours incubation. On 22nd and 23rd patient had rigor, the temperature shot up to 104 F. Lumber puncture was again done, fluid was under tension and about 10 c.c. was removed. Patient was put on aureomycin 250 mg. Q.I.D., Streptomycin $\frac{1}{2}$ gm. B.D., in addition to penicillin. But the temperature persisted in spite of these drugs. Patient developed diarrhoea and stomatitis, So Aureomycin was discontinued on 27—9—53, streptomycin on 28—9—53. Patient was given four lac units of

crystalline penicillin in 25 c.c. of 5% glucose in saline intravenously. Intramuscular injections were continued as usual. On the second day the temperature came down to normal. Intravenously the penicillin was continued till 30-9-53. The patient now felt better, there was no headache. He was given orally vitamin B and C. Penicillin was discontinued on 5-10-53. Patient again started getting the temperature upto 100 F. On 10-10-53 temperature again shot up. So one lac units of penicillin 3 hourly was started till the temperature again came down to normal. On 11-10-53 and remained so till the patient was discharged on 16-10-53. At the time of discharge the postauricular wound had healed. There was no temperature. The left ear was still discharging. He was discharged and advised to get Mastoidectomy done on right side also later on.

Discussion.—In this case the history of discharge from the ear was of a long duration, with two acute exacerbations each time he had an acute attack he was given penicillin and sulpha drugs. (The actual amount of drugs given is not known). Only some ear drops were put without proper cleaning of the ear. The antibiotics and sulpha drugs were stopped as soon as the pain subsided. In the last acute attack 15 days back, the patient got pain and increased discharge, with repeated bouts of high temperature and rigor. But rigors in this case as known by the history were not of typical lateral sinus thrombosis type, in which usually the temperature remains normal in the morning, the patient feels well and there is a rise of temperature in the evening with rigor. The temperature goes upto 103-104° F. During this time patient is ill with rapid pulse. After some time the temperature comes down to normal with crisis and sweating. The patient feels exhausted but otherwise well. In this patient the rigors were there, the temperature rising one or two degrees, but never touched normal, the temperature came down to normal by lysis, but it is not always that these typical attacks occur. Some times the thrombosis may be quite insidious (Logan Turner).¹ During this time the patient received penicillin for five or six days. The actual amount given is not known but it was stopped as soon as the temperature came down to normal and thus it was not enough as becomes evident by rise of temperature again after a week. This time again the temperature shot up with rigor and the patient's condition became bad. He had severe headache and repeated vomiting, inspite of penicillin and sulpha drugs, this time patient went down hill, and was brought in a semiconscious condition to the hospital with high temperature, thus pointing to some intracranial complication.

The examination given above suggested that the patient had meningitis (positive kernig sign, and rigidity of the neck with slow cerebation). The deep reflexes were brisk. Spontaneous nystagmus was present to right side and suggested labyrinthine involvement. The history of repeated rigors suggested lateral sinus thrombosis, as the patient was already receiving penicillin for last four days, condition was rapidly deteriorating, operation was decided upon, thinking the condition to be primarily sinus thrombosis with meningitis and labyrinthitis super added.

As seen in the operation notes sinus was found organised, lumen was obliterated; dura was greyish in colour and covered with granulations. Thus it seems that this time the sinus may not be the cause of trouble, but the previous attack of rigors were due to sinus thrombosis. As no lumen was found and sinus was organised, it was not further tackled, in order that the natural defence barriers may not be broken. But even this operation and the antibiotics could not make any noticeable change in the general condition of the patient. The neck rigidity was present, Kernig's sign was positive, and general condition of the patient was bad. The temperature persisted and nystagmus was also present. Therefore lumbar puncture was done C. S. F. was under tension, slightly turbid, no organisms could be found, culture was sterile. This indicates that the meningitis was serious in character. Blood culture was also done but no organisms could be found. Still it is seen that the patient had rigor on 22nd and 23rd respectively and temperature shot up to 104° F. and the lumbar puncture on 23rd revealed that the C. S. F. though under tension was clear. It was concluded that the patient was getting resistant to penicillin, and so was put on aureomycin and streptomycin, but these drugs also failed to produce the desirable effect on temperature. Moreover the aureomycin caused toxic effects in this patient, namely diarrhoea and stomatitis. So it had to be stopped after 4 gms, Streptomycin was stopped after 5 gms. On 28-9-53 it was thought that probably intravenous penicillin might be more helpful, so the patient was given four lac units of crystalline penicillin with 25 cc. 5% glucose in normal saline intravenously (I.V.) O.D. and 1 lac units I. M. I. 8 hourly. This produced very good result, and the very next day the temperature dropped down to normal. The patient looked brighter, the headache was less. Intravenously the penicillin was continued till 30-9-53, but the intramuscular penicillin was continued till 5-10-53. Thus the patient received about seventy lac units of penicillin in all. The temperature was normal, he became bright answering to

questions and there was no headache. The post Auricular wound was healing, the discharge from the ear was+. During this time patient was given vitamin B complex orally and by injections for this stomatitis and diarrhoea due to Aureomycin. It is further seen that the patient again got slight temperature 100° F. or so towards the evening of 10-10-53, and this time it was decided to give heavy doses of penicillin from the very beginning. So he was given 1 lac units penicillin I.M.I. every 3 hours. The temperature became normal the next day and continued to be so till the patient was discharged. This emphasises the need of continuing antibiotics even few days after the temperature has come down to normal. At the time of discharge, the postauricular wound was healed and the discharge from the ear was+. Audiometry showed a loss of 60 decibels in all the frequencies in the operated ear. Caloric response was not done. This shows that the nystagmus which the patient had was due to serous irritative labyrinthitis and as soon as the drainage was done and the condition of mastoid and middle ear cavity improved, the labyrinth condition also improved. One similar case has been reported by J. B. Scott², but in his case only meningitis and labyrinthitis were present. There was no sinus thrombosis and his case also healed after radical mastoidectomy.

This emphasises the fact that acute attacks of mastoiditis in children although respond very well to chemotherapy and antibiotics, they must be treated for a sufficient length of time, with adequate doses, so that the symptoms are not masked. Mr. J. H. Otty³ has also emphasised the fact that adequate doses of chemotherapy should be given. The patient should not be allowed to go out of the hospital, unless the tympanic membrane had returned to normal and remained so for about fifteen days. This very case under discussion when he got his first attack, if properly treated must not have developed this chronic state. In cases of chronic otitis media, not responding to conservative methods and where recurring acute exacerbations occur, as in this case, should be operated. The primary aim in doing this operation is to remove the source of potential danger to life, to preserve the hearing of the patient and to improve it if possible. If this case under discussion would have been operated earlier, he would not have got all these intracranial complications.

Without going in further details of various indications of mastoidectomy, I would like to emphasise the fact that recurrent acute exacerbations and the failure of the case to respond to conservative treatment for more than six weeks is a fair indication

for mastoidectomy, to make the ear safe and that is why this patient when discharged has been advised to get his right ear also operated later on.

This patient did not show a typical rise and fall of temperature as is usually seen in the cases of sinus thrombosis. In my opinion it was due to superadded complications of meningitis and labyrinthitis that the picture was distorted. If the clot is sterile and unobstructive, in some cases it may produce no signs at all or very few signs or symptoms (Morrison).⁴ In this case the sinus was not further explored, and no ligation of the internal jugular vein was done, as the sinus was organised.

The meningitis in this case was of a serous character and it is seen that in these cases it is enough to do a radical mastoidectomy and then to rely on chemotherapy and antibiotics. Similarly the labyrinthitis also subsided after the operation of mastoidectomy. The serous nature of the labyrinthitis is proved by the fact that the functions of the labyrinth returned to normal. Although there was a loss of 60 decibels in all frequencies in the operated ear, but this was due to chronic otitis media, and radical mastoidectomy which had to be done in this case. No labyrinthine function tests were done in this case, because of the danger of flaring up the condition. Donald Watson⁵ has also emphasised on this fact. He is of the opinion that "Even if the labyrinthine symptoms are very serious they may not be due to a purulent infection, they are simple labyrinthine upsets 'Serous labyrinthitis' if you like the term. And this labyrinth disorder will recover without any interference with the labyrinth provided of course, the patient recovers from the original mastoiditis and its other complications, that meningitis is not as a rule caused by labyrinthitis as many observers think. It is always a primary complication of mastoiditis. The labyrinthine upset may be associated with meningitis, but the two conditions are entirely separate." And this case also shows that it is not necessary to operate on the labyrinth in the first stage, a fact which has been emphasised by Mr. J. B. Scott, while reporting his case.

CONCLUSIONS.

1. When treating a case of acute mastoiditis with antibiotics and chemotherapy, sufficient doses should be given for a sufficient length of time after the temperature has come down to normal to avoid masking the symptoms and making the disease a chronic one.

2. When proper indications for operation are present mastoidectomy should be done to make the ear safe and to remove the source of potential danger to life.

3. When the sinus is found organised on operation it can be left as such and the antibiotics relied upon.

4. It is not necessary to operate on the labyrinth, in the first stage only mastoidectomy should be done and the patient put on rest and antibiotics relied upon. In most of the cases the labyrinth will recover.

5. The treatment of meningitis similarly is antibiotics and lumbar puncture done at suitable times.

6. Where intramuscular penicillin fails to produce a desirable effect I.U. Penicillin should be given a trial.

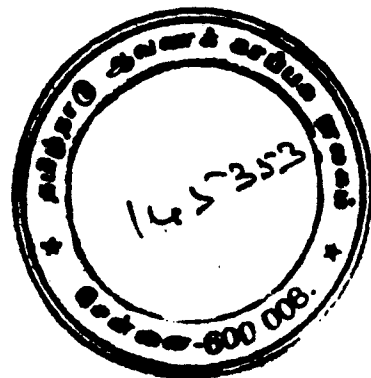
7. The patient should be carefully watched for the toxic manifestations of antibiotics used.

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