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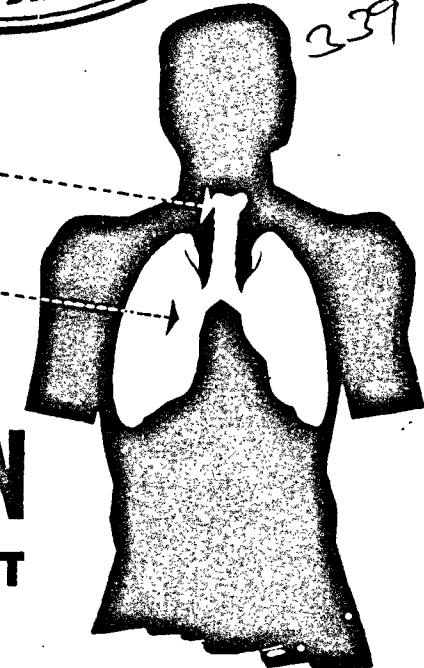


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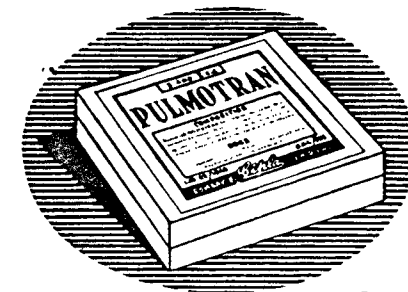
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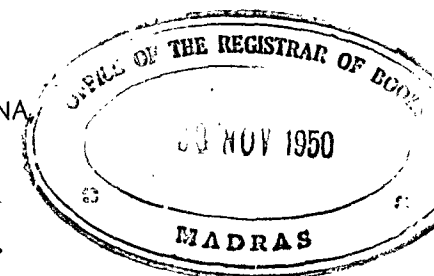
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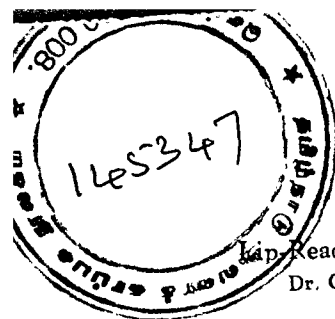
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CONTENTS

Lip Reading Dr. C. A. Amesur.	Page 83
Vertigo of Non-Infective Origin Dr. C. M. Leelavathi.	89
King's Operation for bilateral abductor paralysis Dr. S. G. Joshi.	99
Pyribenzamine in the treatment of Nasal Allergy Dr. Joe V. De Sa.	103
A Case of Branchial Cyst in Connection with the Second to Sixth Embryonic Arches Dr. C. A. Amesur.	108
Abstracts	109
The Association of Otolaryngologists of India	119

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LIP - READING

BY

Mr. C. A. AMESUR, M.S. (Lond.); D.L.O. (Engl.).

It has been known in pre-christian days that deaf-people used to hear with the eyes, and breathe through the ears; but the credit goes respectively to Dr. John Bulwer who in 1648 wrote "that subtle art, which may enable one with an observant E-ie to see what any man speaks by the moving of his lips"; and to Eustacheus for the discovery of the auditory tube connecting the ear with the nose. The spoken language is not suitable to the requirements of fine lip-reading, for some of our sounds are formed within the mouth and throat. Thus the lip-reader cannot distinguish between "hat" and "at". He further is not sure of the tongue consonents as t, d, n and y; or the double tongue consonants as nt, nd, lt and ld. This is the first difficulty for the eyes to overcome viz. the obscurity of many of the movements formed in the mouth and throat, his second is rapidity of the formation of movements, for the average time per movement in ordinary speech is one-twelfth of a second. Therefore too much emphasis should not be given on training in single words or slow speech; but on the contrary the deaf strain from the beginning to learn the formations, as are noticed rapidly in ordinary speech. Therefore Nitche has laid down that in the third place, the method should aim at, to inculcate a nearly infallible accuracy and quickness of perception of the easier movements, leaving to the mind in large

measure the task of supplying the harder movements. This mind training should aim at, to grasp thoughts as whole or what women call quick intuition at races. We may say, thought skips, looks ahead and anticipates, thus avoiding word for word accuracy in lip-reading. It is therefore wise for the lip-reader not to interrupt any sentence or para, provided he can grasp the meaning of what is being talked. In this way he can not only bring a great joy in home and social life to himself, but this lip-reading becomes a great help in his business or profession.

The two objections to lip-reading are firstly that it is too great a strain on the eyes, which is avoided in the beginning by ceasing to lip-read on the first feelings of tiring eye. You will be surprised to notice that eyes become automatic in the course of weeks and do not get tired for hours. People also say that if you relieve the ears of their task, they may get deafer, which is not so, for it helps them, if eyes and ears co-operate in unison.

Nitche suggested that the eyes must be trained (1) to be accurate, (2) to be quick (3) to retain visual impressions, and (4) to do their work subconsciously. Having-taught the pupil the formations, one should not insist on accuracy in repeating when one comes to the sentences or paras, for it is much more important to grasp the idea as a whole in quick sentences. Now to retain visual impressions, grasp the thought, and do not rely on accuracy of formations, which is done subconsciously. Repetition is essential to master this.

After training the eyes, tackle the mind to develop (1) synthetic ability as in formation and paras, (2) intuition, (3) quickness and (4) alertness. Make your personality felt, at the same time stir the pupil to stand by his own efforts and work out his own salvation. It is not sufficient only to praise for the work well done, but also to show the bright side of the picture to the duller pupil. For then deaf to get the maximum benefit from the friends or well-wishers, he must open his heart to them and not hide his deafness. He should be less sensitive being broadcast, that he is hard of hearing,

for by this very broadcast his well-wishers will try to co-operate with him. He should be less inattentive, for what he has lost by the ears, he should try to gain by the quickness of his eyes. In social life he should avoid exclusiveness, otherwise he will be miserable throughout life. Now having helped themselves, the joys of companionship and fellowship should be brought to them, by their well-wishers, by following the advice:—

1. Do not irritate them by shouting, but speak clearly with a vibrant voice.
2. While introducing people to them, the emphasis is to be laid on—the name of the person, for the deaf knows his own name well.
3. Talk to him, failing that give him the subject of conversation in a couple of sentences, so that his lip-reading is made easier and thus enjoy subsequent conversation you and your friend are having.
4. Let the light be as nearly as possible on a level with your face, so that the formations are seen well; and speak distinctly, smoothly, and connectedly.
5. Use long phrases rather than short ones.
6. In choice of words, use the ones which have the most movements of the lips as in "What beautiful weather we are having" instead of "Isn't a nice day?"

Conversation practice should be started with a teacher or home-members. Constant repetition of stories and questions based thereon are essential. Thereafter let subconscious mind do the reading of formations by your looking at the speaker and you concentrate on grasping the thought. Remember that it often happens that one loses the thought, if one goes on thinking of the words lost and thus diverting the mind.

Now look at the lips, mouth and the surrounding part of the face and notice how the vowels and consonants are

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formed. Repeat this for yourselves at home by sitting in front of a mirror and your formations, when you say the words.

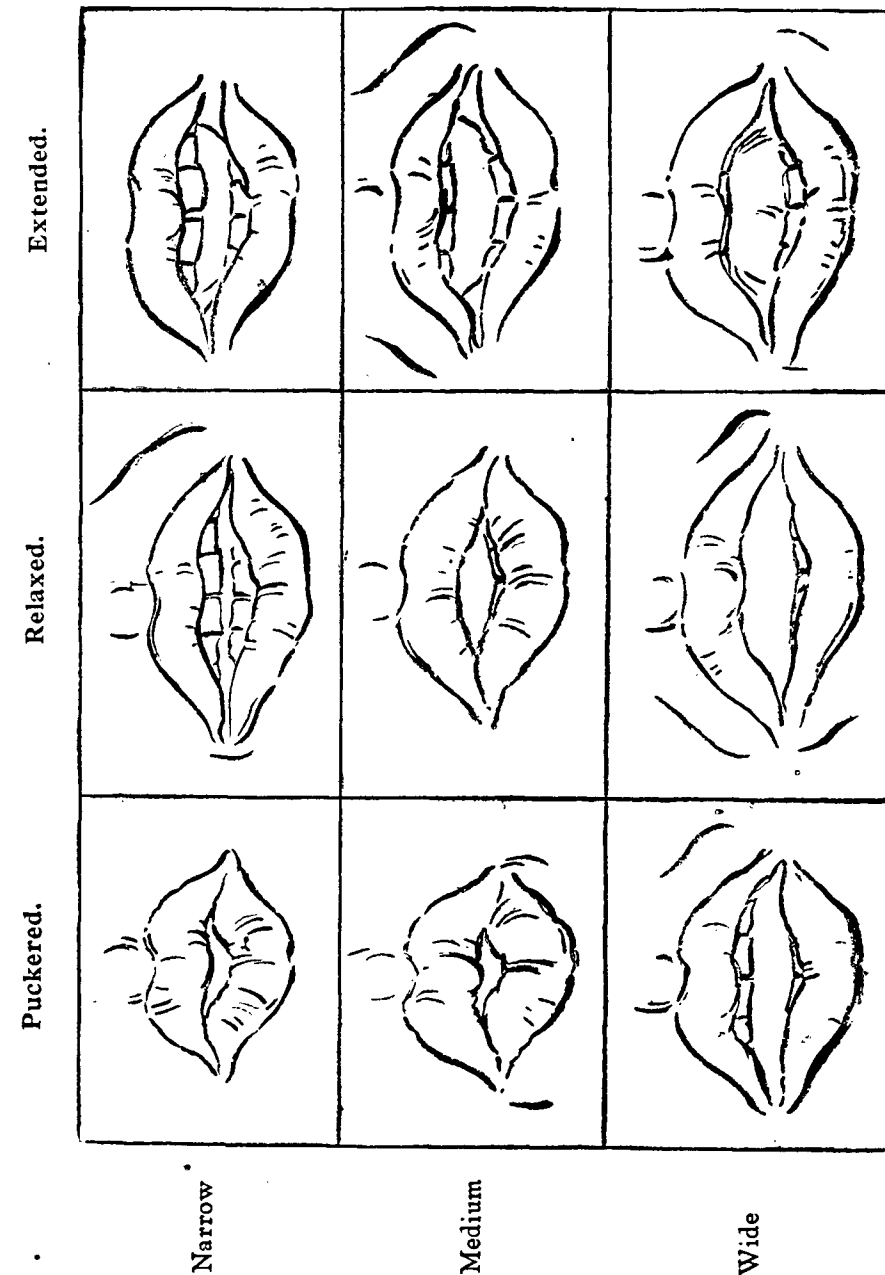
Puckered Vowels as in		Lips are	The distance between lips is
Long oo	Coon	Puckered	Very narrow
Short oo	Food	Puckered	Medium
Aw	Cawed	Puckered	Wide
O	Orb or Ore	Puckered	Wide
Relaxed Vowels			
Short i	Kid	Relaxed	Narrow
Short u	Cut	Relaxed	Medium
Ah	Cart	Relaxed	Wide
Short o	Cot	Relaxed	Wide
Extended Vowels			
Long e	Keen	Extended	Narrow
Short u	Get	Extended	Medium
Short a	Cat	Extended at the corners	Widest

The consonant movements are quicker than vowel movements and for many there are multiple sounds as in pie, by and my; or few or view. Thus the differences could only be deciphered by mind from the context.

Consonants revealed by lips:

P, B, M as in pie, by and my. Lips open from the shut position.

F, V as in few and view. The centre of the lower lip touches the upper teeth.



Wh, W as in what and wet. The lips are puckered to a variable degree.

R as in reef puckering is at the corners of the mouth.

S, Z as in saw and zone - show tremors - of the muscles just outside the corners of the mouth.

Sh, Zh, Ch, J as sham, azure, chap and jaw the lips are projected.

Consonents revealed by the tongue :

Th as in thin and then, the tongue shows between the teeth or behind the upper teeth L as in leaf, the point of the tongue touches the upper gum.

T, D, N as in tie, die, nigh the flat edge of the tongue touches the upper gum.

Consonents revealed by the content :

Y as in yes we have no hannas to-day; The lips are relaxed and mouth narrow.

K, G (hard), hg as in kiki go and ring a bell. Here drawing of the throat muscles just above the Adam's apple may sometimes be seen.

H as in hat could only be deciphered by context as in " she wears a nice hat at church service ".

Word practice should not be encouraged except in proper nouns and difficult words. To develop quickness of response by eye and mind words should be learnt in sentences e.g. short, in my time was very short; or nation. The nation celebrates its freedom on the fifteenth of August.

In mirror practice, which should be about half an hour every day, avoid vagueness and false associations. You should speak softly and always associate the movement with the right sound, till recognition becomes a habit. For a while concentrate on b o o m in boom till the formations are noticed subconsciously,

and you only see boom. The same idea is subsequently formed for sentences, and ultimately of the thought when teacher stands behind you and whispers stories which you read from the mirror, having known the thought before hand in the beginning.

After this stage the deaf should make use of the deaf clinics and deaf clubs for reasonable periods so that the social worker can give them lessons in a mixed class of different degrees of deafness. He must tell them a story before hand; and question them on it. The members of the club then help themselves on topics such as stories, conversations relating to the weather, the home, restaurant phrases, dinner-table talk, meeting a friend or a stranger on the road, useful information for the journeys, schools and colleges, sport, religion, shopping and business.

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Vertigo of Non-Infective Origin

BY

Dr. C. M. LEELAVATHI.

Though vertigo was recognised since the days of Hippocrates, it was only in 1861, that the French physician, Meniere pointed out that the labyrinth was the seat of the disorder Vertigo with its often associated symptoms of tinnitus, nausea and vomiting. In the first century A.D., Soranus noted the group of symptoms which he attributed to some intracranial disease, "Heaviness and giddiness in the head, an inner noise which is felt in the occiput too, tension in the eyes, ringing in the ears together with vertigo".

Even Shakespeare has commented on this group of symptoms. He draws attention to Caesar's physical defect; *Caesar to Antony*, "Come on my right hand for this ear is deaf" and *Brutus to Casca* (about Caesar) "It's very like he has the falling sickness".

About a century later Dean Swift wrote to John Hunter, "This wildness you must allow because I am so giddy and deaf". There was no doubt that Swift suffered from what we now know as Meniere's disease. Swift's medical advisers lavished their attention on his digestive system and submitted him to numerous blood lettings but Swift stubbornly and shrewdly maintained that the cause of his illness was not in his blood nor in his belly but in his head.

Considerable speculation regarding the function of the labyrinth was in evidence early in the 19th century. The view held was that the whole of the labyrinth was concerned with the perception of sound, the semicircular canals in particular being responsible for directional hearing. In 1824, Flourens was the first to suggest otherwise when he found that the semicircular canals in animals exerted a modifying influence on body movements. Later it was other workers like Mach, Brewer and Crum Brown who explained that the end organ

(Cristae) in the semicircular canals are stimulated by the movements of the endolymph inside the canals initiated by acceleration or deceleration of the head.

Baginsky (1881) noted the effect of syringing the ear on balance and eye movements and later Barany (1906) explained the significance of caloric stimulation and developed the caloric and the rotatory methods of testing labyrinthine function. Brewer was the first to suggest that the utricle was stimulated by the position of the head in space rather than by rotary movement which has since been confirmed by later workers like Magnus and De Kleyn and Macnally. The labyrinth is also concerned with the perception of sound which is subserved by the organ of Corti in the cochlea. One would wonder why the two diverse functions like hearing and balance are so intimately connected, but it should appear clear if it is appreciated that stimulation of both cochlear and vestibular end organs in the labyrinth is by means of a fluid wave of endolymph produced in the case of the cochlear end organ, by sound waves and in the case of the vestibular end organ, by movements of the head.

The effect of vestibular stimulation noted as in seasickness, etc., by nausea, vomiting, pallor and sweating suggests an intimate connection between the vagal and vestibular centres in the brain stem. This characteristic syndrome described by Meniere as the result of acute labyrinthine failure never causes death and hence pathological study available is scarce. It was, however, in 1938, Hallpike and Cairns found on histological examination of the labyrinths from two cases exhibiting the classical features of the condition that the abnormality lay within the labyrinth and they found that the disturbance was due to an obstructive mechanism of the endolymphatic system with some changes in the ductus endolymphaticus. This was corroborated later by Lindsay and others.

Many other conditions there are in which vertigo is a symptom with or without deafness in most of which a definite causative lesion is demonstrated either in the labyrinth, 8th

nerve or its central connections in the form of basal skull fracture, inflammatory conditions as in suppuration extending from the middle ear, neoplastic as in acoustic neuro-fibroma, vascular as in thrombosis of the anterior inferior cerebellar artery; toxic, as in streptomycin therapy etc.

PATHOLOGY

The causes of vertigo of non-suppurative origin arising within the labyrinth may be classified under. (1) Hydrops. (2) Injury and (3) Haemorrhage.

Hydrops:—Fifty years ago Cheatele put forward the idea that vertigo associated with deafness where no cause was found may be due to increased endolymphatic pressure and drew an analogy with glaucoma. *Mygind* and *Dederling* in 1932 suggested that the condition might be due to disordered water metabolism. *Furstenberg* and *Lathrop* and others (1934) attributed the condition to retention of sodium within the body. *Wright* thought it was due to inflammatory changes in the endolymph and suggested the possibility of a focal sepsis. *Crowe* attributed this increase of endolymphatic pressure to physico-chemical changes. Others attributed the condition to deficiencies of vitamins (those responsible for spasm of blood vessels as deficiency of thiamine, nicotinic acid or choline compounds) while some others to (a) allergy (b) action of the non-decarboxylated fraction of histidine histamine and (c) disturbances of endocrine glands and so on—

It was, however, in 1938 that Hallpike and Cairns described the histo-pathological changes they found within the labyrinth of two cases of Meniere's disease. They found on the affected side an extreme dilatation of the endolymph system and in some changes in the absorption area of the endolymph around the saccus endolymphaticus. There was nothing to suggest an inflammatory cause for these changes. These changes are most apparent in the cochlear part of the membranous labyrinth. The central canal of the cochlea may be enormously dilated and the organ of Corti compressed.

This condition is generally known as Meniere's disease. Meniere in his original paper in 1861 described the case of a young woman who had vertigo, unilateral deafness and vomiting and after a few days' illness, died. From the course of her illness which proved rapidly fatal and together with his post-mortem findings of a reddish plastic exudate within the semicircular canals, it was suggested that the condition was due either to infection or haemorrhage possibly of leukaemic origin, but not due to hydrops. However Meniere's name is perpetuated by association with the syndrome of acute vestibular failure, namely hydrops.

Predisposing causes of hydrops also is not known. Before its true nature was known, conditions of the external and middle ears were blamed. Toxins circulating in the blood like alcohol and streptomycin might predispose but they are more likely to affect the vestibular neurones than the end organ. In some cases a trauma or bomb blast seems to have produced typical symptoms of Meniere's disease soon after—this may have been a mere coincidence or may have been a possible predisposing factor.

The exciting cause :—As regards the exciting cause, little is known but the theory of water and salt retention may be given due consideration as the restriction or otherwise of fluid and salt intake was found to have striking variations in the symptoms of Meniere's disease.

Injury :—The labyrinth is injured in basal fractures, concussion or surgical trauma as in labyrinthectomy for intractable Meniere's disease or labyrinthotomy (Fenestration) now frequently employed for otosclerosis.

Haemorrhage :—Repeated references were made regarding haemorrhage into the labyrinth causing vertigo but often this is the result of injury. Thrombosis of the antr. inferior cerebellar artery supplying the labyrinth is known to occur producing vertigo but this is very rare.

As cases of injury and haemorrhage producing vertigo are rare, attention is paid mostly to those of hydrops or Meniere's disease.

Clinical features of Hydrops (Meniere's disease) :—This condition occurs at any age but is usually seen at the third and fourth decades of life and occurs equally in both sexes. Meniere's disease constitutes paroxysmal attacks of vertigo, alternating with intervals of freedom, perceptive deafness almost invariably more noticeable in one ear and the absence of any sign of disorder within the central nervous system. The patients present with the complaint of vertigo as the chief symptom. In a typical case, patient will give a history of having had an attack or several attacks of vertigo coming on usually suddenly associated with movement of the head. Often they are woken up while asleep with an attack. The attack disables them for sometime varying from a few hours to a few days. Deafness is complained of more in one ear accompanied by tinnitus. In some, these clear up in between attacks while in others they get steadily worse. Often there is a history of distortion of some particular sounds—specially high pitched ones. With the attack of vertigo the patients usually do not fall or become unconscious but feel unsteady on their legs, things around them appearing to move away from the affected to the sound side. The sudden change from health to the discomfort and often helpless misery of one of these attacks often engenders a feeling of insecurity that in some cases may turn the patient into a nervous wreck and most of these patients exhibit evidence of a psychological disturbance which is the effect and not the cause.

EXAMINATION

A careful clinical examination of the cases will not reveal any evidence of disease of the cardio-vascular, central nervous, or digestive systems. On examination of the ear, nose and throat usually no lesion is found. The upper respiratory tract is as a rule healthy, the ear drums on examination appear normal and there usually is no evidence of obstruction of the eustachian tube.

Deafness which is usually unilateral to start with is always of the perceptive or nerve type and a test of the vestibular function, (the caloric test, done after the method of Cawthorne and Hallpike) reveals a lack of balance between the two labyrinths, usually due to 'impaired function on the affected side. Thus the only positive clinical sign of Meniere's disease is the impairment of function of the end organ of the 8th nerve situated in the labyrinth. It is surprising how such a tiny organ as the labyrinth can cause this profound disturbance.

DIAGNOSIS

Meniere's disease should be diagnosed from other causes of acute labyrinthine failure like injury, infection, new growths, diseases of the digestive system and diseases of the cardiovascular system. In injury, there usually is a history and the giddiness will be continuous or possibly induced by sudden head movements. In infection, there usually is evidence of active otitis media with fever and constitutional disturbance leading to meningitis.

NEW GROWTHS

Involving the 8th nerve, the so called acoustic neuromata, rarely give rise to sudden giddiness because the loss of labyrinthine function is gradual. A slight giddiness associated with unilateral deafness and total loss of vestibular function should, however, lead to the suspicion of acoustic neuroma.

DISEASES OF THE CENTRAL NERVOUS SYSTEM

Any sudden involvement of the central connections of the 8th nerve may cause sudden giddiness and the most likely of these is sudden haemorrhage or disseminated sclerosis. These don't specifically involve the vestibular tracts and associated symptoms will point to the true nature of the cause. In epilepsy there rarely is a vertiginous aura, but the repeated attacks with loss of consciousness and other symptoms will suggest the underlying cause.

Diseases of the digestive system:—The nausea and often severe vomiting which is a permanent feature of a Meniere's attack are, it is believed, due to a stimulation of the vagal

centres and the consequent increased activity of the stomach and gall bladder with its accompanying symptoms can be very misleading. Once it is appreciated that vomiting is often the effect of a labyrinthine disturbance and not the cause, there need not be any difficulty in recognising the cause.

Diseases of the Cardiovascular system:—The slow thready pulse during an attack and the pallor and discomfort in the epigastrium from vomiting are often mistaken for a heart attack. But severe vertigo and nystagmus in the acute phase are distinguishing features.

SPECIAL INVESTIGATIONS

1. Audiometric tests including recruitment which is present in Meniere's and not present in acoustic neuroma according to the recent findings of Hallpike and Dix.

2. Caloric tests done after the fashion of Cawthorne, Fitzgerald and Hallpike, using 30°C cold water test lasting for 40 seconds and 44°C hotwater test lasting for 40 seconds.

3. X-ray of the skull including Towne's view to exclude acoustic tumour, and also to exclude infection of the sinuses or any other intracranial lesion.

4. Wasserman tests are also helpful in the diagnosis.

TREATMENT

Non-operative treatment:—Before treatment is started the first thing is to explain to the patient the underlying cause of the condition. This information is generally thankfully received by understanding patients. Often, in a large proportion of cases, the eradication of the disease is not possible but such relief may be given that the patient is enabled to lead a useful life of activity. If both sides are affected even the proportion of cases that can be relieved is very small.

Restriction of water and salt in view of the pathology of the disease seems to have given very great relief, at least for a time, in several cases and even in hopeless cases conservative treatment should be tried. No salt nor soda should be used in cooking. Preserved foods like bacon, corned beef, Marmite,

tinned soups, tinned fish, smoked fish, shell fish, cheese and salt butter should all be avoided. Not more than two and a half pints of fluid should be taken in 24 hours. Sedatives like phenobarbitone seem to give some comfort to patients though they do not have any specific effect. Hyoscine in small doses seems to have given relief and recently 'Dramamine' the American remedy for sea-sickness has been tried with some relief. But the side effects of these drugs like drowsiness, dryness of the mouth and blurring of vision make it inadvisable to continue the treatment. Other sedatives like Dilantin sodium etc. have also been tried.

Histamine - based on the vasoconstriction theory put forward by some—has been tried and the attacks seem to have been controlled or modified. Histamine is given as an initial dose of 1.9 mgr. intravenously in 240 c.c. of saline, repeated after 2 days and then a maintenance dose of 1 mgr. in 1 c.c. of saline given weekly for 6 to 12 weeks. The patient is generally hospitalised for the 1st five days. Histamine action is probably due to vasodilatation relieving the distended endolymphatic system.

Antihistamine drugs like Phenergen, Benadryl etc. seem to have had some beneficial results.

Nicotinic acid has been tried based on the vaso-dilation theory. It is given by mouth or subcutaneously. A small proportion of cases seem to respond but it is not clear why. Usually 50 mgm. are given twice a day by mouth and, if well tolerated, the dose is increased. 50 mgr. by injection once a day is also useful.

Ammonia and potassium chloride have been tried with the idea that ammonia or potassium will replace the fluid binding sodium ion within the tissues thus helping fluid excretion.

A combination of quinine and papaverine hydrochloride which act on smooth muscles diminishing the tonus, thus relieving the angiospasm of the labyrinth, has been tried.

Other forms of medical treatment that have been tried with no marked effects are atropine, adrenaline, acetyl choline, Vitamins A, C.

Physiotherapy including faradization, high frequency diathermy, radiotherapy etc., have also been advocated.

Whatever treatment is given, it has been found that the patient feels well for a while.

Operative treatment:—When the attacks cannot be controlled by any of the above measures, surgery is resorted to. The object is to destroy the end organ thus preventing impulses reaching the central nervous system. This is done either by

- (a) severing the 8th nerve or
- (b) by obliteration of the labyrinth.

Severing the 8th nerve is done intracranially at its short course between the internal auditory meatus and the brain stem. This operation is not without risk. Some have advocated division of the vestibular part of the 8th nerve, thus trying to preserve hearing. In the majority of cases, however, hearing on the diseased side is usually badly affected and so it is not worth while taking the risk of an intracranial operation unless both sides have to be done.

Obliteration of the labyrinth is done by different methods. Wright injected alcohol through the oval window through the external auditory meatus. Day tried coagulation through a trephine hole in the external semicircular canal and a fine needle passed into the vestibule. A light coagulating current is applied 2 or 3 times. (Davis-Bovie. Electro surgical unit with dial set between 18 and 25). The objection to these methods of ablating the end organ is that powerful agents of destruction such as alcohol and diathermy are employed in an anatomically crowded area and once introduced there is no control.

Focal sepsis is very rarely present in these case and if one is found every attempt is made to eradicate it.

Labyrinthectomy is the most popular operation in cases where one side is obviously affected and the hearing on that side is considerably impaired. This is done under general anaesthesia and through a post auricular mastoid route; the posterior half of the external semicircular canal is opened, the incus being removed to get better access to the canal. With magnification either by using a loupe or a dissecting microscope the bony external semicircular canal is opened by a dental drill and the membranous canal is identified and removed with fine ophthalmic forceps after which the mastoid wound is closed. Following the operation, there has been complete and permanent loss of both cochlear and vestibular functions. Symptoms and signs of acute labyrinthine failure are present soon after operation and it is wise to warn the patients before hand that there would be an exacerbation of the preoperative symptoms. Most patients leave their bed in a week's time and are happy to return to work 2 months after operation. Some residual dizziness provoked by sudden head movements remains for a while; post operative rehabilitation including head exercises has hastened recovery.

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King's Operation for bilateral abductor paralysis

BY

Dr. S. G. JOSHI, M.S.

Bilateral abductor paralysis is not a condition of common occurrence. One occasionally meets these cases. I have seen only five. Two after thyroidectomy and in three others one arose out of C. N. S. disease and in two no etiological factors could be attributed to this condition.

Commonest cause for this condition is thyroid operation.

In the past, many unsuccessful attempts were made to relieve respiratory obstruction for this condition—like chordectomy—laryngo-fissure etc. The credit goes to Dr. King who successfully devised a method for displacement of the arytenoid cartilage and which now he has modified by displacement and lateral rotation of the vocal process. There have been other modifications of King's operation and the same object has been achieved by different operative procedures—like Kelly's arytenoidectomy and Woodman's modification of King's operation.

Woodman analysis of 23 cases:

Average age		44	Years.	
Sex.	Male		5	Cases
	Female		18	Cases
Etiology.	After thyroid operation.	20	Cases	} 23 Cases.
	Undetermined		3	Cases
	? C. N. S.			

In our series.

	after thyroidectomy.		2	
	due to C. N. S. disease		1	
	of undetermined		2	
Age.	3 cases.			Between 30-50 Years.
	2 cases.			" 14-18 Years.
	(undetermined cases)			
Sex.	Females		2	
	Males		3	

Symptoms:—Acute or gradually increasing effort for breathing and even severe dyspnoea—almost asphyxiating the patient. This respiratory difficulty may not be noticeable during quite respiration; but manifests itself on exercise or with physical effort. It is aggravated during acute respiratory affection, like bronchitis and common cold.

Voice may be sharp and shrill—and stridor and croaking noise during sleep. Their main difficulty is dyspnoea on exertion.

We had made unsuccessful attempts in the past—in one case—by excision of one vocal cord through the laryngeal route and in another by laryngo—fissure route and we had to be satisfied by allowing the patient to carry on with a tracheotomy canula.

I had the good fortune to watch Dr. Louis Clerf of Philadelphia doing the King's operation and Dr. Kelly of Manhattan Ear, Nose and Throat Hospital of New York doing his method of arytenoidectomy through a window in the thyroid ala. Since then I have seen three cases of bilateral abductor palsy but so far only one has submitted to operation with successful result.

The main steps of King's operation are:—

1. Tracheotomy—which may precede the operation or may be done at the same time; in 25% of King's cases tracheotomy for 1 to 11 years. This is done under local anaesthesia.
2. Incision—along the anterior border of sternomastoid—exposure of the thyrohyoid muscle anteriorly and inferior constrictor behind.
3. Division of the inferior constrictor along the posterior border of the thyroid ala.
4. Recognition of the facet of articulation between the cricoid and the inferior cornu of the thyroid.

This is a good landmark to locate the position of arytenoid cartilage which is not very easy.

Recognition of cricothyroid posterior and division at its attachment to the arytenoid and exposure of the cricoarytenoid joint. Division of interarytenoid and completing the disarticulation by division of short but strong internal lateral ligament.

By passing a fine double hook the arytenoid cartilage is abducted laterally and a few fibres of cricoarytenoid lateralis are divided.

A $\frac{1}{2}$ diam. needle atraumatic—(0) is passed round the arytenoid cartilage without perforating the laryngeal mucosa and retracted outwards.

The laryngeal mucous membrane is closely attached to the arytenoid cartilage and to avoid injury to laryngeal mucosa, is admirably done by the use of a magnifying loupe. King advises to pass two sutures.

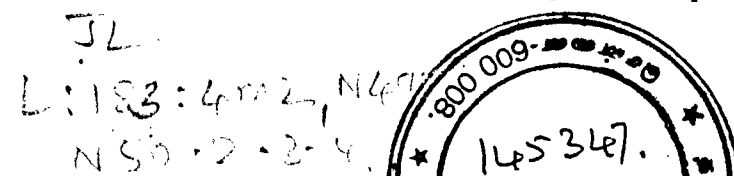
At this stage a direct laryngoscope is passed (after covering the wound with sterile dressings) and the actual amount of tension required to obtain satisfactory glottic space is ascertained. This is very essential to do.

If the glottic space is less than 3 m.m. respiratory obstruction is not relieved. If it is more than 6 m.m. the voice production will be of a poor quality.

I have not been able to accurately measure this and I must say being my first operation, all I was concerned, was to give the patient satisfactory breathing space.

The suture is tied to the posterior edge of thyroid ala by perforating through the thyroid.

During the operation there is great difficulty of fixing and holding the arytenoid cartilage. It slips and may get



fractured. Injury to the mucous membrane of the pyriform fossa and mucous membrane of the larynx in glottic space are to be avoided.

The greatest difficulty I found was to pass a needle and catgut round the arytenoid.

A drainage is placed at the lower end of the wound which was removed on 4th day.

The present case—boy aged 16 years had respiratory distress for one year with croaking noise when asleep.

He was admitted in collapsed condition with severe dyspnoea. It was a cyclone day and all lights and electric connections were cut off. A direct laryngoscopy was tried for passing a bronchoscope unsuccessfully. With a torch, tracheotomy was done. During the operation before trachea was opened the patient had stopped breathing for nearly 3 minutes and was taken for lost. He recovered after tracheotomy.

8 months later—King's operation was done (on 22-8-49). Post operatively, Penicillin and Sulpha diazine tablets were given for 6 days. Drain removed on 4th day and decanalisation after 6 weeks. Patient made uneventful recovery.

Pyribenzamine in the treatment of Nasal Allergy

BY

Dr. JOE V. De SA, M.S., D.L.O. (Lond.).

The Otolaryngologist who is mindful of the ever widening knowledge of allergy and its causes and applies such knowledge in his practice, has a definite advantage over the practitioner who still looks upon allergy as a fanciful and imaginative field of medicine, for allergy plays an important part in the etiology of various diseases in otolaryngology and is not only restricted to the seasonal sneezes or the all-year-round sneezes for the nose and paranasal sinuses, larynx, ears, eustachean tubes and mouth may be involved in allergic reaction. These may take the form of seasonal or perennial hay fever, allergic hyperplastic sinusitis, impairment of hearing due to oedema of the middle or inner ear, Meniere's syndrome, dermatitis of the external auditory canal, migraine, ulceration of the tongue etc.

Wolfe states that the importance of the allergic factor in chronic nasal and sinus diseases is well known; it has been estimated that 70% of all cases of chronic sinusitis are due to this condition of hypersensitivity, while the remaining 30% are caused primarily by infection.

It is not possible within a short space to discuss all the above mentioned allergic manifestations, but I have chosen the commonest manifestations of allergy in otolaryngology, that of allergic rhinitis, and have studied the results of its treatment with an antihistaminic drug, *i.e.* Pyribenzamine.

I have used the term allergic rhinitis to include all other synonyms like vasomotor rhinitis, perennial hay fever, nasal hydrorrhoea and atopic coryza, which describes the malady characterised symptomatically by intermittent attacks of sneezing, watering of the nose, redness and itching of the eyes, of the throat, roof of the mouth and posterior pharynx with

blocking of the nose and nasal voice and clinically by a swelling and turgescence of the nasal mucous membrane which is pale bluish white in colour with watery mucoid discharge and in more advanced cases a starting polypoid change may be seen.

There may be no evidence of infection and the patient never has a temperature. The onset of the disease appears to the patient as a common cold but the fact that it improves by itself by the evening instead of continuing for the usual period of duration of a common cold, and that the attacks recur with shorter periods of freedom, make them believe, and very often report to the doctor, that they are suffering from a very peculiar attack of cold.

It is not possible in this short paper to deal with the intricate mechanism of allergy or the varied etiology of this disease. Clemens von Pirquet was responsible in 1906 for the concept of allergy and its introduction to clinical practice. The term allergen was also suggested by him and his method for the demonstration of tuberculin-allergy (Pirquet reaction) was of great consequence in the diagnosis of tuberculosis in children. According to his concept the allergic manifestation is explained in the following manner:

If antibodies come into contact with their particular antigen, a reaction takes place between them (antigen-antibody reaction). The substance forms a compound, no reaction or outward symptoms are observed in the case of a reaction between antigen and circulating antibodies. If, however, a reaction takes place with sessile antibodies certain apparently histamine-like substances are formed which produce the allergic manifestations. Dale and Laidlaw had already shown that histamine formed when the cyclic amino acid histidine loses its carboxyl radical is capable of producing the typical symptoms of anaphylactic shock in the guinea pig.

That histamine thus liberated by the antigen-antibody reaction together with other histamine-like substances so-called (H-substances) acetylcholine and heparin are responsible for

the manifestation of allergy, is shown by the fact that allergic diseases like asthma and migraine can be precipitated by the injection of histamine or the detection of an increased sensitivity of allergic patients to histamine in skin tests. Furthermore, by the reliable methods of quantitative determination of histamine as elaborated by Basoain and Goddum it is possible to establish that during the shock state the histaminic level of the blood can increase ten fold or more and that the blood corpuscles of sensitized animals or of the allergic patients produce histamine when brought in contact with specific antigen.

Thus the allergic reaction can be described as an equation:

$$\text{allergen} + \text{tissue} = \text{specific antibodies.}$$

This is the original sensitization or allergization of the individual which may occur even during intrauterine life or in early childhood.

$$\begin{array}{ccc} \text{Allergen} + \text{Specific antibodies} & & \\ \text{or} & & \\ \text{Reagin} & = & \text{Allergic reaction} \end{array}$$

Contact with the allergen in an allergized patient will produce the above equation and manifest in allergic reaction. The tissue in which this reaction occurs is known as the shock organ. Heredity plays an important part in allergic diseases and a list of other allergic manifestations in the family is always obtainable in 75% of cases of allergic reaction. In the cases studied, some of the patients gave a history of urticaria and eczema before being a sufferer of allergic rhinitis.

What are the allergens? I vividly recollect my teacher's opening words when describing eczema to the students that the etiology of allergic diseases was "anything under the sun even the sun itself". Thus all naturally occurring or synthetically produced substances can act as allergens, but for practical purposes these may be divided into 3 main groups:

1. Exogenous—Penetrating the body from outside
 - (a) Inhalants
 - (b) Ingestants.
 - (c) Contacts.
 - (d) Injections.

2. Endogenous—Produced by the body itself or by microbes present in the body e.g. focal infections.

3. Invading allergens produced by helminths such as worms and fungi.

Nasal allergy is thus a manifestation of the allergic reaction in the shock tissue of the nose caused by allergens of the inhalant group coming into contact with the nasal mucous membrane. This is quite true in the seasonal nasal allergy called hay fever, but in the all-year-round sneezers or otherwise called vaso-motor rhinitis, this cannot hold true and allergens belonging to the other group may be responsible. A history of definite allergy was obtained in only two cases studied, one being a patient who whenever he passed a flowering *goldmohar tree* during the season, got an attack of allergic rhinitis and the other a female patient who sneezed whenever she used Max Factor face powder but on reverting to the brand used by her before, her attacks disappeared. In both these cases the allergens belonged to the inhalant group, pollen and oris root and their removal gave good results, but such is not the case with the other cases studied.

The treatment for allergic conditions including the nasal manifestations may be directed either towards the exclusion of the known allergen, the desensitization of the patient with the known allergen as determined by skin sensitivity tests, or lastly by administering antihistaminic drugs which helps the patient by neutralizing the histamine-like substances liberated by the allergic reaction.

In the following study of 50 cases of allergic rhinitis the last method namely, administration of Pyribenzamine, an antihistaminic drug was the treatment used.

The youngest was 10 years old and the oldest 58 years of age; there were 15 females and 35 males. The cases were all clinically examined and wherever sinus disease was suspected, a diagnostic sinus puncture was carried out; further in these

cases with marked deflection of the septum and with infection of the tonsils, these were first treated surgically and the patients then put on Pyribenzamine. Large doses of Pyribenzamine were administered but it was found that the patients could not stand more than one tablet three times a day preferably after food starting with $\frac{1}{2}$ tablet and increasing it to 1 tablet; this was continued for a period of 7 days and the patients asked to return; those cases which showed an improvement, a further course of 2 tablets a day for 7 days were given and then 1 tablet a day. With this line of treatment the following results were observed:

Total No. of Cases.	Toxic Symptoms, e.g. drowsiness, palpitation and diarrhoea.	Became worse.	No relief.	Not traceable and probably relieved.	Relieved.
50	3	1	9	5	32

With this treatment the female patients had marked relief with the tablets, the males required, in addition, surgical treatment—sub-mucous resection of the septum, turbinectomy, etc. The response of the nasal mucous membrane to the treatment was a gradual diminution of the oedema, the mucous membrane returning to its normal colour with the cessation of sneezing attacks and relief from nasal obstruction and watery discharge. In those cases not relieved with Pyribenzamine, a course of auto-haemotherapy was given.

It is, therefore, seen that 64% of the cases treated with Pyribenzamine were relieved of the distressing symptoms and only 3 cases showed toxic symptoms.

Before I close this study, I have to thank Ciba Pharma Ltd., Bombay for giving the tablets of Pyribenzamine for trial and also Dr. S. G. Joshi and the Dean of the K. E. M. Hospital, for allowing me to carry this investigation in the Aural Dept. of the K. E. M. Hospital.

A Case of Branchial Cyst in Connection with the Second to Sixth Embryonic Arches

BY

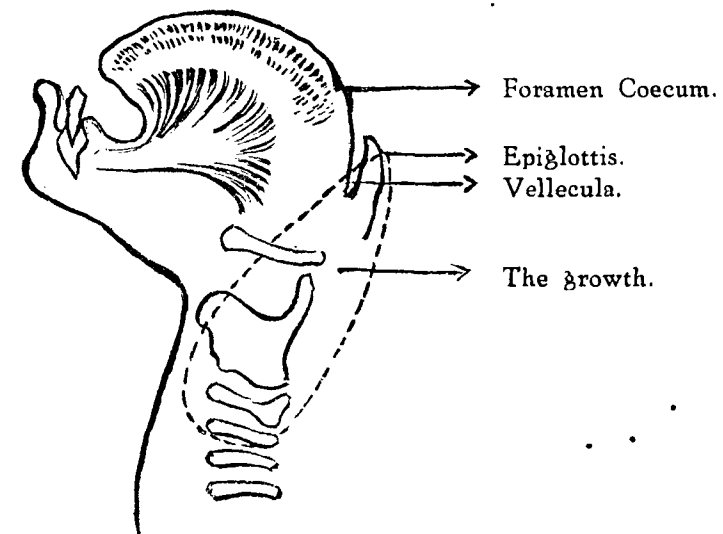
C. A. AMESUR, M.S. (London), D.L.O. (Eng.), Bombay.

A male aged 21 complained of difficulty in swallowing solids for over two years and swelling on the right side of the neck for six months. Both symptoms were increasing rapidly, especially dysphagia.

Indirect laryngoscopy showed a very large pinkish fluctuating swelling on the right side of the epiglottis filling part of the valliculus above and extending down to the right sinus pyriformis. X-ray with barium bolus showed no evidence of pharyngeal pouch. Wasserman reaction was negative.

Patient was admitted at the J. J. Hospital, Bombay on 21st June 1950. Under direct laryngoscopy one tried to aspirate the cyst, but as the fluid was too thick to draw, it was decided to do external operation. A curved incision one and half inch long was made over the swelling on the right side of the neck. Lateral surface of the cyst was defined, but plenty of adhesions were found on the laryngeal side. The cyst inadvertently burst and two ounces of thick greyish matter was removed, which on examination showed plenty of pus cells and squamous epithelial cells; culture found to be sterile after 72 hours. The cyst cavity was explored by finger successively on its internal side and felt the thyroid, hyoid, and upper tracheal rings, suggesting that it was in connection with the second to the sixth embryonic arches. The outer part of the cyst wall was excised, but the inner being adherent to the larynx was curetted. The wound was disinfected with sulphonamide and packed with roller gauze. A day after the operation the patient was able to swallow the solids in comfort.

In summing up one says that this was a branchial cyst on the right lateral side of the larynx. The second branchial arch, the hyoid one, helps in formation of the valliculus and posterior third of the tongue and the upper end of the cyst was in this position. The cartilages of the fourth and fifth arches form the thyroid and the sixth forms the cricoid, arytenoid tracheal rings; these were internal to the cyst in the lower part.



Abstracts

NERVE DEAFNESS—Its clinical criteria, old and new.

By M. R. DIX, C. S. HALLPIKE & J. D. HOOD,

Proc. of Roy. Soc. Med. 42: 527-536 and 540 Section Otol.

P. 11-20 and 24, July 1949.

The old tuning fork tests of Schwabach, Rinne and Weber are sufficient to detect the existence of nerve deafness but the "new" criteria e.g., the loudness recruitment test and the intelligibility test for amplified speech help to diagnose the nature and localization of the disease within the perceptive mechanism. In Miniere's disease of labyrinth where there is disorder of hair cells, the loudness recruitment is always present which is complete and over-recruitment present. Recruitment of intelligibility is conspicuously absent. In perceptive lesions of eighth nerve e.g., neurofibroma intelligibility continues to improve with amplification upto high levels but the loudness recruitment is not present at all.

Thus we can differentiate nerve deafness of the nerve type from one of end-organ type.

N. K. APTE.

HAEMOSTASIS IN THE FENESTRATION OPERATION

By J. S. HALL & A. M. MILLAR,

The Journal of Laryngology and Otolology, Vol. LXIV, No. 5, May 1950.

Haemostasis and immobility of the patient are essential for the operation. A preoperative medication and sympathetic block which covers blood pressure to a reasonable level during the operation has simplified the work by the surgeon whose work is otherwise hindered by troublesome bleeding. The authors recommend use of Heavy Nupercaine for the intrathecal injection. The technique guarantees a blood free-fenestra.

N. K. APTE.

THE TREATMENT OF BELL'S PALSY WITH HISTAMINE

By D. A. SKINNER, M.D.,

The Annals of Otolology, Rhinology and Laryngology, Vol. LIX, March 1950, No. 1.

According to the author Bell's palsy is a peripheral paralysis of the facial nerve due to primarily vasospasm of the stylomastoid artery, its branches and anastmosis; the oedema causing further compression in the facial canal is secondary.

Vasodilators like Histamine diphosphate, Nicotinic acid, Dihydroergotamine tartarate are useful. The author has advocated low dose therapy of Histamine diphosphate; starting with 0.1 cc. of a 1 in a 10,000, dilution and gradually increasing until the optimum effective dosage is reached; with the onset of improvement same dose is maintained.

N. K. APTE.

RADIUM THERAPY FOR LYMPHOID TISSUE IN THE NASOPHARYNX

By E. B. BILCHICK & A. R. KOLAR,

Annals of Otolaryngology and Rhinology—Vol. LIX, March 1950, No. 1.

Radium therapy is useful for conductive deafness in children and adults. Irradiation is useless for nerve deafness. The treatment is postponed if there is acute infection in the nasopharynx or throat. X-Ray therapy is preferable where lymphoid tissue extends beyond the eustachian tube orifice and disease involves middle ear and pharynx. Cases should be selected properly and proper technique of application followed. Repeated series of treatments are dangerous. The proliferated epithelium due to chronic infection may transform to epithelioma due to radiation. The immediate ill effects of radiation are painful throat and skin irritation. The deleterious late effects are agranulocytosis or anaemia, effects on skin, bone necrosis and malignant changes.

N. K. APTE.

AURAL CHOLESTEATOMA OR CHOLESTEATOSIS. A REVIEW.

Presidential Address Nov. 4th, 1949, President Gavin Young M. C.

Royal Society of Medicine Section of Otolaryngology.

There is a great controversy regarding the origin of cholesteatomas. Primary cholesteatomas are epidermoid, while secondary cholesteatomas are due to proliferation of squamous epithelium in the epitympanic recess, due to chronic infection of the mastoid. Some consider both, as stages of a single pathological process. Headache, otorrhoea, defective hearing, vertigo are the common symptoms. Elevated temperature and signs of increased intra-cranial pressure may be present. The mass may or may not protrude through the tympanic membrane. The two types of middle ear mucosa and the defective pneumatization of the mastoid process explain the pathogenesis of the cholesteatomas. Operation to ensure drainage and aeration is necessary to successful healing.

N. K. APTE.

THE USE OF THE MAGNET IN THE TRACHEOBRONCHIAL TREE, THE ESOPHAGUS, STOMACH & DUODENUM

By MURDOCK EQUEN, GEORGE ROACH & BROWN.

The Laryngoscope—August—1949. (P. 873)

Electromagnets have long been used in the extraction of metallic bodies from the eye. Shortly after World War I, Jackson, Tucker & Clerf used such a magnet to dislodge a bullet from the upper lobe of a veteran's lung and bring it down to a main bronchus from which they removed it with forceps. Electromagnets, however, have seldom proven useful in endoscopic work.

In 1943 the General Electric Company Limited perfected a permanent magnet for practical use in endoscopy, a cylinder of fused aluminum, cobalt and nickel, small enough to be passed through a bronchoscope. It needed no batteries or wiring, and the author in 1944 reported its use in the removal of an open safety pin from the esophagus.

In cases of doubt as to whether the foreign body will respond to the magnet, one may employ an adaptation of the "mine detector" so extensively used in the recent war. The Berman locator will settle the doubt in a few minutes.

Tracheobronchial Tree:—Metallic foreign bodies can be removed with forceps from the trachea or larger bronchi. Sometimes, however, an ordinary straight pin will drop down the tracheobronchial tree almost to the diaphragm. When the pin becomes lodged in a bronchiole it is most difficult to grasp it with forceps. Passing a small bronchoscope as near it is possible under the guidance of a biplane fluoroscope enables one to push a small magnet near enough to attract the pin.

The use of magnet does not, however, render less necessary experience and skill on the part of a surgeon, specializing in endoscopy, and of his assistant including the anaesthetist and roentgenologist; nor does it obviate the need for a full armamentarium of instruments of varying sizes.

The Esophagus:—Because babies have the inveterate propensity of putting into their mouths everything they can get hold of, one of the most common foreign bodies found in baby's esophagus is an open safety pin with the point up. The surgeon has few choices; (1) to close the pin in situ, and then to remove it, but at best this causes considerable trauma to the organ; (2) the pin may cut into two and removed piecemeal, but this is traumatic business. (3) the pin may be grasped by the spring with a forceps and pushed down into the stomach. Once in the stomach some times the surgeon can reverse it and withdraw it, the point trailing. But if he loses his hold on the pin in the stomach it will have to be removed by an open operation. (4) fourth and the simplest method, providing only that the safety pin is of steel, is to use a magnet. They have reported several such cases. A magnet of suitable size is attached to a Levin tube, which encases a semiflexible wire, and which is attached to a hand bellows. The magnet is passed down the esophagus, dragging the safety pin with it,

the point harmlessly trailing, into the stomach. The stomach is inflated and the magnet manipulated under fluoroscopic guidance until the safety pin is reversed. Magnet and pin are then drawn back up the esophagus without injury.

Stomach:—Adults occasionally swallow the most extraordinary objects, most metallic foreign bodies in the stomach have been swallowed by the children. The first thing is to determine if the foreign body has passed beyond the pylorus. For intra-gastric work they use a magnet on a semi-flexible wire with a Levin tube just described. Some times they use a magnet tied to a string. Two cases are quoted, one a seven-year child with a corsage pin in the stomach and another with a staple in the stomach of a boy five years old, successfully removed by a magnet.

Duodenum:—Prior to 1947 when a metallic foreign body has passed the pylorus, the surgeon had a choice of watchful waiting or subject the patient to duodenotomy. Many such objects do pass on through the gastro-intestinal canal without causing any symptoms, but in their opinion if it has a point or a sharp ragged edge it is best to try to remove it at once from above or if the object is relatively long and observation for a few days indicates that it will not get beyond the pylorus every effort should be made to extract it with a magnet. There were reported 7 such cases and the first one in the literature removed in this fashion was the case of a child in May, 1947. There are 9 illustrations and 8 references.

SURGERY OF MENIERES SYNDROME: EVALUATION OF NEUROSURGICAL AND OTOLOGIC PROCEDURES

By FRANK D. LATHROP, (Boston).

Surgery of Menieres syndrome—It is during the past decade that the surgical management of Miniere's disease has received considerable attention of otologists and neurosurgeons. All but two, aim at disrupting the flow of neurologic impulses between the vestibular endorgans and the vestibular nuclei. Technically they differ in their point of attack or the means by which the interruption is accomplished. The two exceptions are Portman's operation of cutting by sectioning the endolymphatic duct, and second is Passe's operation of removal of stellate ganglion and ligation of the vertebral artery.

The author reviews the present literature on this subject and also the additional information received from otologists and neuro surgeons from all over the world. In addition he has reviewed 105 cases at the Lahey clinic during past 13 years.

Ideally the surgical management of Miniere's disease should effectively relieve the patient of vertigo and tinnitus without affecting the hearing. 10% of cases exhibit bilateral involvement. The following are the operative procedures which are carried out for Miniere's disease.

I. Without sacrificing the hearing:

1. Dandy's operation of section of the eighth nerve.
2. Portman's operation.
3. Passe's operation.

II. Destructive operative procedure:

1. Injection of alcohol.
 - (a) Wright's transtympanic approach.
 - (b) Mollyson's approach through fistula in the horizontal semi circular canal.
2. Day's electrocoagulation.
3. Cawthorn's avulsion of membranous labyrinth.
4. Lempert's operation of decompression i.e., destruction of labyrinth by fibrosis, as a result of tapping the perilymphatic fluid, by removing foot plate of stapes and destroying the round window.

Dandy's modified original method of intracranial approach for sectioning the eighth nerve just after it emerges from the internal auditory canal to McKenzie's modification of sectioning the eighth nerve to the vestibular component only.

Dandy in 1941 published reports of total or partial sectioning of the eighth nerve in 401 cases with only one operative fatality. Tinnitus disappeared in 50% cases.

Grow in reviewing 94 of Dandy's cases in 1938 found in

49 cases complete sectioning of the nerve was done,

45 cases differential sectioning was carried out.

Where complete sectioning was done vertigo was cured and hearing completely destroyed.

In 72 cases where differential sectioning was carried out the deafness in the affected ear was

worse in 22 cases
unchanged in 36 cases
improved in 14 cases

At the Lahey's clinic eighth nerve sectioning was done in 91 cases:—

Partial in 66 and total in 25.

Total sectioning	...	25
Vertigo completely relieved	...	15
Unchanged	...	4
Untraced	...	5

Differential sectioning.

Vertigo completely relieved	... 44
Not relieved	... 5
Unsteady	... 6
Not traced	... 13

Serviceable hearing was present only in 11 of 66 patients.

Injection of alcohol into the labyrinth by Wright's transtympanic route 60 cases.

Improvement in vertigo	... 55 cases
Failures	... 5 "
Total deafness developed on the side injected in all cases.	
Tinnitus improved in	... 33
Not improved	... 16
Not recorded	... 9
Two had no tinnitus before or after operation.	
Two had post operative facial paralysis, one temporary and one permanent	
One case developed meningitis.	
Mollyson injects alcohol into the labyrinth through the fistula in the horizontal semi-circular canal.	

of 50 cases: 74 % cured of acute vertiginous attacks.
10 % not improved.
16 % not traced.

Lempert's operations of decompression has just appeared in literature

He has reported 10 cases.

- 9 cases—complete relief of vertigo and tinnitus.
- 1 case—vertigo disappeared, tinnitus remained.

Avulsion of the membranous labyrinth by Cawthorne.

This operation always results in total and irreversible loss of hearing and vestibular function of the ear operated.

of 159 cases:

- 152 complete destruction of hearing and vestibular function.
- 7 not traced.
- 140 of 152 cases improved and were able to resume work.
- 12 did not improve and could not work.
- The only post operative complication was secondary infection of the wound in 2 cases.
- No fatalities.

The operated patients 140 of them were able to return to work within two months of the operation.

Day's electrocoagulation of the membranous semicircular canal and vestibule through fistula in horizontal semi-circular canal.

of 55 cases:

51 were relieved of vertigo

4 continued to have dizziness,

persistence of vertigo in two was probably due to bilateral involvement

Hearing in 35 of his first 40 cases was either totally destroyed or made worse. Hearing in the last 15 cases had remained the same and had become better in 8. In two, vertigo persisted and required re-operation.

The Following Seven Extracts are taken from "DIGEST OF OPHTHALMOLOGY AND OTOLARYNGOLOGY"

JANUARY—MAY, 1950.

*The Issues in which each of these original articles
appear are quoted along with these extracts.*

—N. R. AMESUR.

1. ROENTGEN DIAGNOSIS OF CHOLESTEATOMA OF THE MIDDLE EAR

By J. G. WALTNER, (New York)

The American Journal of Roentgenology and Radium Therapy, Nov. 1949.

In 25 of the 70 cases the operative findings did not confirm the Roentgen diagnosis. In 17 cholesteatoma was found at operation, while failed to be detected by X-Rays. Out of these 7 were in attic, and 10 in mastoid antrum. All the attic cholesteatoma removed, were undetected in Roentgen studies; whereas in 34 mastoid cholesteatoma, only 10 were not demonstrated. On the other hand Roentgenograms were thought to give the characteristic picture of cholesteatoma in 8 cases in which operation failed to reveal epidermoid pathology of macroscopic or microscopic nature.

N. R. AMESUR.

2. TINNITUS

By J. P. RIGG, (Colorado).

Surgical Clinical Forum, January 1950.

Extrinsic tinnitus arises outside the inner ear and central nerve pathways of the auditory nerve. Sinus disease, impacted cerumen, middle ear disease, tubal obstruction, temporomandibular joint involvement, the act of deglutition, motion of the cervical spine, haemic sounds synchronous with the arterial or venous pulse, aerotitis etc., etc.

Other factors provoking tinnitus are drugs, stimulants, narcotics, anaemia, abnormal variations in blood pressure, arteriosclerosis, allergy, intracranial growths, meningeal irritations, gastro-intestinal disorders and ill fitting dentures.

Treatment consists in treating the predisposing or exciting cause. In nerve deafness Lempert's tympanosympathectomy is a last resort.

Prescriptions suggested are:

1. Re. Nicotinic Acid 50 mgm tabs. one p. c.
2. Re. Therapeutic Vit. Capsules formula, one daily.
3. Re. Phenobarbital ... grs. xx
 Pot. Bromide. ... 5 v
 Liq. Taka diastase ... 3 i
 B. Complex ... Qs. 3 viii.

Sig. Take one teaspoonful ac. & H. D.

N. R. AMESUR.

3. SINUSITIS AND ASTHMA AND ROENTGEN THERAPY

By J. S. STEVENS (New Jersey),

Mississippi, Valley Journal, November, 1949.

The author treats each case with Roentgen rays through six parts of entry at each sitting at fortnight intervals. These doses are so small that even the skin is not reddened.

The author claims that eight or nine out of every ten male cases, may expect to be relieved of their difficulty of sinusitis and bronchial asthma; where in females though the same percentage benefits from sinusitis, it is only five or six out of every ten are relieved of the bronchial asthma. The cause of this disparity is not yet known.

N. R. AMESUR.

4. TONSILLECTOMY IN THE ALLERGIC CHILD

By Ben. F. FEINGOLD,

California Medicine, November, 1949.

Indications:

- (1) Infected tonsils and adenoids.
- (2) Enlargement of the cervical glands secondary to above.
- (3) Tonsils and adenoids which produce obstruction to breathing or deglutition.

Contra-indications:

Non-infected tonsils which look angry with allergic attack; and thus suggest that they are possibly infected.

Allergic rhinitis, asthma and eczema are caused by non-bacterial antigens.

The author insists on thorough management of allergic states following removal of foci of infections to prevent the recurrence of lymphoid tissues in the upper respiratory tract.

N. R. AMESUR.

5. LESIONS OF THE TONGUE

By Noah. D. FABRICANT.

The associate editor of the E.E.N.T. monthly in its Oct. 1949 issue says that the local lesions of the tongue are chiefly lesions of the epithelial covering and describes under the following headings:—

Glossodynia, Erythema, Migrains, Riboflavin Deficiency, Black Hairy Tongue Ulcers, Papilloma and Fibroma and Finally Carcinoma.

N. R. AMESUR.

6. SURGICAL TREATMENT OF ACHLASIA OF THE OESOPHAGUS

By FORRESTER RANI,

*The Journal of the Iowa State Med. Soc. March, 1950, Vol. XL, No 3,
 Page from 112—115.*

The term achlasia is better than other terms. The syndrome has been found more commonly in emotionally instable patients. The patient usually begins to become conscious of swallowing for months; then he needs to wash food down with liquid. He soon learns that warm liquid

helps and cold liquid hinders. In the initial stages pain is behind xiphoid, then sternum and in the neck. Finally complete dysphagia, loss of weight, foul breath, regurgitation set in.

The upper segment of oesophagus up to the aortic arch consists of striated muscles. Here the primary wave of muscular contraction is initiated by swallowing. Secondary waves start at the level and are seen as a contracting band from the aortic arch level downwards. In the lowest part of oesophagus worm-like contractions occur for a short time due to presence of plain muscle. Hydrostatic dilators relieve 80-95% of patients. In small number of cases Heller's operation, oesophago-gastrostomy do good.

N. R. AMESUR.

7. A PLEA FOR COMPLETE ADENOIDECTOMY.

By Thomas F. FURLONG ARDMORE,

The Journal of the International College of Surg. January, 1950, Vol. XIII, P. 88 and 89.

A thorough and complete removal of adenoids is as important as a thorough and complete removal of the tonsils. Pre-operative examination of the adenoidal area should be done by a post nasal mirror, a digital examination, naso-pharyngoscopic examination. If adenoids have been removed previously a Yankencer or Hollender pharyngoscope, Furlong's pharyngeal retractors are helpful to estimate size, position of adenoid tissue left. The adenoid, dropping out of the curette cause pulmonary complications. Hartmann's curette or the Schmeden triangular punch are invaluable in the removal of adenoid tissue from the region of the pillars, fossa of Rosenmuller, postero-superior angle of the naso-pharynx. The finger covered with surgical gauze is an excellent supplementary curette. Gentle use of sinexsons nasal dilator ensures the removal of abberent lymphoid tissue which projects into naso-pharynx.

N. R. AMESUR.

TUBERCULOS LARYNGITIS TREATED BY STREPTOMYCIN

By WILLIAM MEKENZIC, (Lond.)

The Journal of Laryngology and Otology, Vol. LXIV, No. 4, April 1950.

The author has given his experience of twelve cases of tuberculosis laryngitis with streptomycin. The dose suggested by the author is 1 gm. intramuscularly daily for 3-4 weeks. The treatment should be tried when a month's trial of silence and sanatorium treatment fails. The larynx is susceptible for the disease in some cases only; hence pulmonary disease must be treated when larynx is cured by the drug otherwise larynx may be involved again by the disease. Good follow up of the cases is essential to record the results.

N. K. APTE.

The Association of Otolaryngologists of India.

Dr. Homi Gandhi Memorial Nursing Home,
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27th August, 1950.

We are having our next Annual Conference in December 1950, on 18th, 19th & 20th, at Lucknow.

Please let me know about the following points at your earliest convenience.

1. (a) Whether you want us to make arrangements for your Boarding & Lodging?

(b) How many attending?

2. Are you reading a paper or would like to demonstrate something special? The copy of the paper is requested to be sent by the middle of November.

3. Any other suggestions will be most welcome.

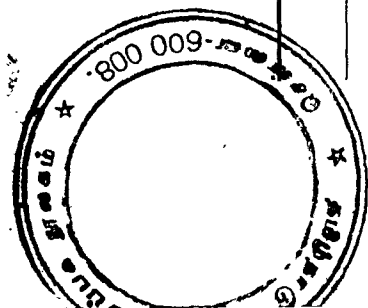
The following papers are already arranged to be read at the Conference:—

- | | |
|---|--|
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2. Dr. Subramanian. |
| 2. Nasopharyngeal Irradiation : | Opener :—1. Dr. J. V. De Sa. |
| 3. Tonsil Surgery & its Complications : | Openers:—1. Dr. Gorde.
2. Dr. Misra. |
| 4. Rhino-Scleroma : | Openers:—1. Dr. Rege.
2. Dr. Gupta. |
| 5. Short paper on Atrophic rhinitis : | Opener :—1. Dr. Shankaran. |
| 6. Facial nerve Grafting : | Openers:—1. Dr. Venkata Rao.
2. Dr. Tulsidas. |

Hoping to hear from you at your earliest,

Yours Sincerely,

L. H. HIRANANDANI.



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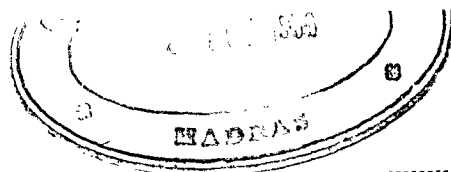
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438

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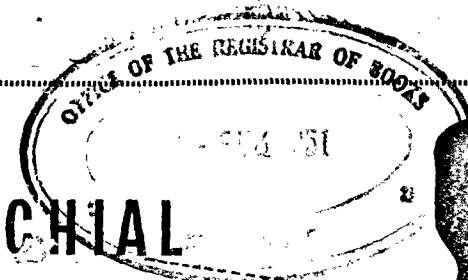
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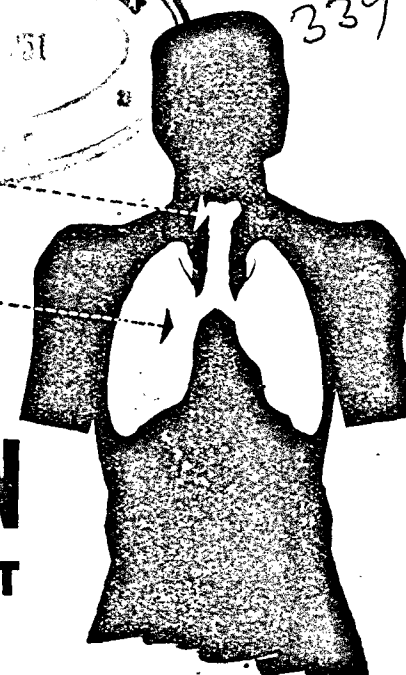
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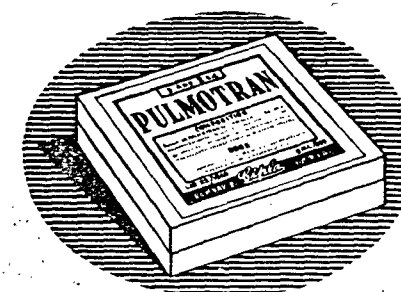
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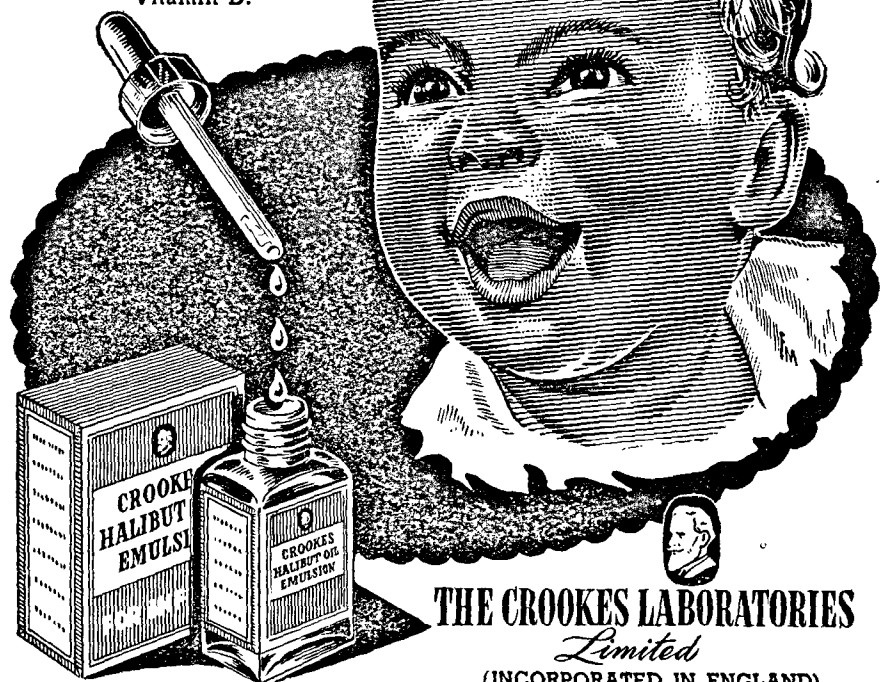


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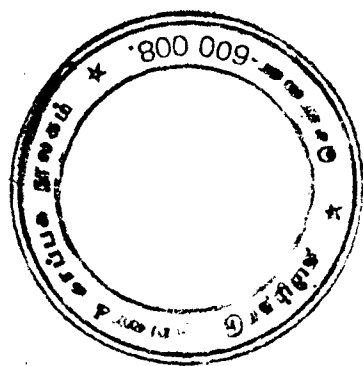
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CONTENTS

Meniere's Symptom Complex Dr C. A. Amesur.	Page 121
The Nose and Throat in Relation to Chronic Lung Conditions Dr. M. B. Thakore.	130
Abstracts	142

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Official organ of

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Vol. II

DECEMBER 1950

No. 4

Meniere's Symptom Complex

BY

Dr. C. A. AMESUR, M.S. (Lond.), D.L.O., (Eng.).

In 1861, Meniere published a report of his original case, in Gazette Medical de Paris. This was a young girl who during menstruation after a cold drive, was suddenly attacked with extreme giddiness, absolute deafness, nausea and vomiting. Death occurred on the fifth day of her illness. The post-mortem revealed haemorrhage in the semi-circular canals, a trace in the vestibule, but none in cochlea. It is therefore that Meniere failed to explain the cause of absolute deafness without any abnormality in the cochlea.

Ruttin explains this, by saying, that as the lymphatic spaces of the inner ear are continuous, it is not possible if the disease has originated in labyrinth, to affect only one of its constituent parts *viz.* cochlea or vestibule.

For ninety years, the term Meniere has been loosely employed, to denote a syndrome of unilateral deafness of sudden origin, vertigo and vomiting. By the term "Meniere's Symptom Complex" we mean the sudden onset of these symptoms, without assigning a cause to them, but at the same time keeping in mind that there may or may not be haemorrhage in the labyrinth, more often there being none.

Both sexes are equally attacked, and no age is immune. Earlier aural disease and inherited tendency to aural diseases, is only a factor. Causes of this complex have been many and varied e.g., pernicious anaemia, nephritis and toxic absorptions from pyorrhoea, septic tonsils or gastro-intestinal stasis.

Kobrak regarded angio-neurotic disturbances in the labyrinth ("labyrinth stroke") as the cause, similar to the vascular disturbances in migraine and epilepsy. Krassnig is not satisfied with the angio-neurotic explanation, because the impairment of hearing often lasts days or weeks longer than the vestibular symptoms, because this theory does not explain the predominance of the vestibular symptoms over those originating from the cochlea, which is more sensitive, because in migraine the attacks return at regular intervals, so that the comparison with migraine does not seem to hold good and because the disturbances of the eye in migraine may last for weeks. All the same, the participation of vaso-motor factors in Meniere's disease is not denied. His point of view, however, is more nearly approached by a paper by Dida Dederding in which it is pointed out that changes in the eustachian tube play a decisive part in Meniere's disease. In his cases Krassnig also found changes in the eustachian tube, and generally in the middle ear as well. The impaired hearing is explained by the affection of the eustachian tube, and as a rule the vestibular and cochlear symptoms could be influenced by the usual, and consequently casual treatment. The tubal changes as such are not alone responsible; concurrent inflammation in the tensor tympanic muscle also has some etiological importance. Its situation in the musculotubar canal makes this evident. It acts as a damper of sound, and perhaps also damps the waves of stimulation which reach the vestibular nerve. It is known that rapid changes of pressure in the middle ear can produce attacks of vertigo, and when the play of the muscles of middle ear is disturbed, the normal changes of pressure in the labyrinth are less well damped than usual.

Alexander thought it to be due to leukaemic haemorrhage, while Escat believed it to be due to, arterio-sclerosis of auditory artery. Thornaval considered it to be due to disturbance in the centre situated in the medulla oblongata. Charcot and Dandy considered it to be due changes in the auditory nerve and not of the semicircular canals. Aboulker thinks it to be due to hyper-tension of cerebro-spinal fluid in the lateral cisterns. Quix thinks that this hyper-tension acts on the otoliths via the ductus endo-lymphaticus. Portmann believes that it is due to an increase in intra-labyrinthine pressure. Vagel in his eighty three cases found that Meniere's disease is not an allergic symptom; but it often occurs in conjunction with conditions of irritation of the vegetative nervous system. Familial occurrence is rather rare.

Ultman and Fowler jr. found histologically variable dilatation of the endolymphatic system e.g., the cochlear duct always dilated, whereas the semicircular canals were free. They believed this endolymph disturbance in secretion, is the primary cause, with fibrosis of the peri-saccular tissue a predisposing factor. Nager at the London Congress (1949) showed by histological slides that in a majority of cases the aural vertigo is of non-inflammatory type, because of the dilation of the endolymphatic spaces with various degrees of the nerve tissue degeneration.

Dida Dederding and Mygind considered it to be due to faulty metabolism, resulting in overloading of body tissues and labyrinth, with fluid; the later displaces the mobile stapes causing an apoplectiform attack of Meniere's vertigo. If 1000 c.c. of fluid be taken by such patient, he will only secrete 600 c.c. in four hours, whereas a normal person will pass over 1000 c.c.

Atkinson divides his cases of this "Complex" into allergic, and vagospastic by the histamine sensitivity tests. The former are treated with histamine and the later with nicotinic acid.

The complex consists of feeling of sea-sickness followed by an acute attack of sudden unilateral deafness with intense vertigo, tinnitus, nausea and vomiting. Slightest movement aggravates the symptoms. The attack is followed by prostration. During the attack, nystagmus is rare but may be on one or the other side or change from one side to the other as in McKenzie's case.

The symptoms vary from hour to hour and day to day, depending on the water content of labyrinth. Rinne is negative, lower tone limit is raised, but high tone limit is normal. Tuning and caloric tests show a poorly reacting labyrinth, whereas galvanic tests show a normal reacting nerve. As there is usually no nystagmus, one must assume especially from past pointing tests that otolith organ is affected.

From the almost varied causes, it would appear that the treatment may be medicinal or surgical. Rest, bromides, chloral hydrate, etc. are recommended by Despons for treatment during attacks. In the interval regulation of the general condition and medicinal treatment of cardio-vascular changes and of disturbances in the nervous regulation of the blood vessels are important.

Curschmann among his thirty eight cases treated with quinine sulphate found that only two were resistant to quinine. He emphasises that quinine must not be given only during and after an attack, but recommends continuous treatment in the periods when attacks may occur. Cases of hyper-sensitivity to quinine are best dealt with by slowly increasing dosage. He has never observed any gross ill-effects, and particularly he has never met an increase of deafness. It is therefore that he considers the effect of quinine in vestibular vertigo to be a vasomotor effect and not a toxic effect on the cells.

Lampe gives 0.04 gm. Papaverin. purum and 0.1 gm. Quin. mur. (sold as Monotread, Luitpold). His thirty seven patients became free from attacks, and the remaining four were improved so that their condition became bearable. In some

cases the drug must be taken for years (one case, for example remained free from very severe attacks for 6 years while taking one tablet a day. When he stopped the treatment for four weeks the symptoms returned to disappear again when treatment was re-started).

Atkinson gives in his allergic cases histamines base in gradually increasing doses till 0.57 mg. is reached, and in his vagospastic cases nicotinic acid.

Cawthorne and Hallpike give hyoscine 1/600 grain and hyoscyanine 1/150 grain in tablet form, one to three daily. If this caused blurring of the vision or dryness of the throat, the dosage may be reduced; or mixture of luminol 1/2 grain plus pilocarpine 1/12 grain may be given two or three times a day.

Schick gives slowly, patient lying down, 5 c.c. of 50 per cent solution of mag-sulphate intravenously, two to three times a week for ten to twenty injections.

Dederding and Mygind's researches show Meniere's complex is due to faulty water metabolism. The chief underlying idea of the treatment is to diminish the in-take of fluid and get rid of it, as much as possible, so much so that patient is thirsty and loses his weight. This is brought about by avoiding vegetables and fruit which contains lot of water, no salt diet, limiting the intake of water to about a pint per day and very hot baths. Further diuresis should be brought about by an injection of 1 c.c. of salyrgan, which will lead to diuresis extending over two days, whereas in a normal individual it lasts for a day, followed by compensatory decrease on the 2nd day. Bulbocapnin 0.1 gram in 2 c.c. of sterile water injected sub-cutaneously a day may be sufficient not only to prevent vertigo, but improve the general and mental condition of the patient. This is a strong injection and usually produces depression lasting for half an hour during which patient should lie down. I however allow him to go to work after that. After five to six injections give 0.1 gram per day by

mouth for a fortnight, then for a week every other day, followed by twice a week for a fortnight. If these drugs are not available calomel at night and salts in the morning will do.

This waterlogging condition may affect the cushion of the eustachian tube and it is therefore that these auditory tubes should be opened. The simplest from the patient's point of view is the Valsalva's test, failing which we should politzerize him twice a week. In a few cases this fails; then catheterisation of the auditory tubes will do the trick, and in a very few cases, dilatation of the same by eustachian bougies will be resorted to. Milligan found that this also failed in a few cases to open up the tubes; so he made an opening in the drum and began to dilate the tube from the middle ear to naso-pharynx. Finally as patients love a bottle of physic, it is as well to prescribe hydrobromic acid with quinine or glycerophosphates with iodides and bromides.

If this medicinal treatment fails, we must reduce labyrinthine fluid by operation. The simplest operation was introduced by Babinski and this is to reduce cerebro-spinal fluid by lumbar puncture, thus reducing intra-cranial pressure on the saccus endolymphaticus, and so bringing about an equilibrium between the two inner ears. This invariably gives temporary relief. According to Quix it is better to do decompression over posterior cranial fossa behind mastoid than lumbar puncture. Others still hold that labyrinth could be drained by opening the external semicircular canal.

Biehl in 1926 showed us that the oval window moves under control of tympanic muscles and the round window is only influenced by changes of pressure. Now according to this author, pressure only affects labyrinth. Thus affection to ossicles and fenestra ovalis cause greater impact. So pressure on the fenestra rotunda, which if less flexible sends the pressure back to fenestra ovalis, thus causing Meniere's complex. Therefore the indication for perforating the fenestra rotunda are cases of giddiness, headache with nystagmus and epiphora.

The operation is not performed for deafness. Chief points of the operation being the exposure of the promontory by paracentesis and then opening the window by chisel probe. Confine the patient to bed for four to six days and use sterilized dressings. The operation is followed by deafness which passes off gradually. The giddiness, equipoise etc., are also cured.

About this time, Portmann of Bordeaux suggested that in cases of serous labyrinthitis, which do not yield to medical treatment but there is still hyper-tension of the endolymph, one should do decompression of the labyrinth at the most accessible point *viz.* saccus endolymphaticus. This he likened to a puncture of cornea in glaucoma. The chief points of the operation are:—Trephine mastoid lower than schwartze's operation. Both incision and puncture of saccus endolymphaticus should be near adhesions. Atrophic saccus of old age may be reduced in size and be only near posterior semicircular canal; therefore if incision away from adhesions, saccus is missed and leptomeninges reached. Operate at contact of bony wall; then even atrophic saccus is found, and posterior semicircular canal is saved. If the opening is sealed, say after a year by adhesions, one should repeat the operation if vertigo is severe. This operation is again revived after the histological findings by Ulmann and Fowler jr. in 1943.

Mollison began to destroy the labyrinth in non-suppurative aural vertigo by either injecting pure carbolic acid or absolute alcohol in the external semicircular canal. He has since given up the former. The salient points of the technique of which are as follows:

After cleaning the radical mastoid cavity with ether, the bony external canal is opened with a very fine gauge. Then he injects with a blunt lacrymal syringe, 1 c.c. of absolute alcohol. The injection should be made forwards so that alcohol reaches the vestibule. The puncture is closed by turning down a temporal muscle graft. The wound is closed and drained for twenty-four hours.

Destruction of the labyrinth has been carried out successfully by Lake Milligan and others.

Cawthorne when he fails with his histamine treatment opens up the horizontal canal with a diamond burr under Ziess microscope and destroys the membranous canal within it. His diamond burr seems to avoid the splinters and the risk of meningitis. None of his cases which I saw six months ago produced this complication.

There are two classical methods of labyrinth operation, one devised by Hinsberg and second by Neumann. In both, the radical mastoid is the first step. In Hinsberg's method, the external semicircular canal is opened up behind the facial nerve, while the vestibule is opened by the removal of the promontory in front of the nerve.

In Neumann's method after the radical mastoid, the Trautman's triangle is worked out. After this the bone is removed medial to the sigmoid sinus till posterior semicircular canal is found and opened after which the external canal is opened. Between the two openings of the former and one of the latter lies at some depth the vestibule which is opened up. Now with the back of the gauge towards the facial canal, thus avoiding its injury, open with one cut the promontory thus completing the operation.

Wallace and Marriage thinking that the labyrinth operation was severer than the section of the auditory nerve, performed the operation of the section of the auditory nerve, in a case of non-suppurative aural vertigo, thus cutting off the path of impulses from labyrinth to the brain; but unfortunately the patient did not live long enough to teach us the utility of this method.

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The Nose And Throat In Relation To Chronic Lung Conditions

BY

M. B. THAKORE, M.B., F.R.C.S.E., Major I.M.S. (Hon.)

It is needless to discuss the nose and throat from the anatomical and physiological points of view and reiterate the close relationship that exist between them and the larynx, trachea, bronchi and the lungs. It is my intention to try to bring home to you how chronic lung conditions, in course of time, affect the throat and nose and *vice versa*, how some of the nasal chronic conditions, affect the throat, larynx, trachea and bronchi and simulate lung conditions which often mask the primary lesion.

It is necessary to remember that the bulbar nuclei of the fifth nerve have an anatomical connection with the vagus. Hence it is possible for an irritation in the nose to excite reflex phenomena in the lower respiratory tracts. The relation of certain types of pulmonary infections to drainage from the paranasal sinuses is well known. The most important pathway is a route combining the lymphatics and the blood vessels from the sinus membranes to the pulmonary capillary bed *viz.* the right side of the heart. This has been also experimentally proved (Archives of Otolaryngology, A.M.A. Feb. 38).

The chronic products of nasal inflammation spread downwards and have affected the tonsils, pharynx, larynx, trachea and oesophagus. It is understood that before labelling these conditions as of nasal origin the other causes which simulate such conditions have been systematically looked for and ruled out. In cases of pharyngitis of nasal origin if the soft palate is lifted up with a second tongue depressor while under examination, the upper part of the pharynx will be seen studded

with granulations and the area below the level of the soft palate is normal in appearance. (A. L. Yates "Modern Treatment of Nasal Catarrh" 1931). Larynx also can be infected from above. In such cases the protective portions which surround the larynx are inflamed. Thus the false vocal cords and the arytenoids are swollen and the posterior surface of the arytenoids may be so hypertrophied that difficulty in swallowing is produced. The true vocal cords remain free from inflammation. (A. L. Yates Ibid. 1931).

The continuity of chronicity ultimately invades the trachea, bronchi etc., producing chronic cough and if it persists, simulates Pulmonary Tuberculosis. This is particularly so in cases of nonpainful chronic maxillary sinusitis. Under the same conditions the swallowed pus from an infected sinus produces inflammation in one of the three main sites in the oesophagus. They are also the usual sites for cancer. Oesophagoscopy will reveal the mucosal hypertrophy while a barium meal test will show slight delay in transit but no definite obstruction (A. L. Yates Ibid. 1931).

No branch of medicine is more influenced by allergic states than otorhinolaryngology. Our present day mode of living, environment, occupational efforts and mental stress, to say nothing of heredity produce certain effects on the nervous system that cause various reactions to be manifested by peculiar local symptoms.

"The modern acceptable diagnostic standard is the more recent suggestion to recognise as allergic only those phenomena which show the sequence of allergen—antibody reaction".

—(Lederer Diseases of E. N. T. 1945.)

The common otolaryngologic allergic conditions are ASTHMA and HAY FEVER. These are seasonal or perennial, the symptoms varying but little in either form. Vasomotor Rhinitis is another annoying condition. Recently Status

Thymico Lymphaticus is ascribed to allergy. The allergic disease affect both sexes to the same extent. Nasal allergy shows its highest incidence during the first decade of life and it is mostly inherited. If any surgical interference is contemplated, it should be performed during the interval between the allergic attacks. Cure cannot be anticipated but relief from severity of symptoms is accomplished. To contraindicate nasal or sinus operations solely because of an allergic condition is improper. A. F. Hurst, Knott and Gill-Carry in an article on "Seasonal Hay Fever in the Practitioner of July '32 state that under the term "Hay Fever" be included the disease connected with plant life and its active spring and early summer growth only. Non seasonal spasmodic rhinorrhoea, even though almost identical during the actual attacks with the seasonal Hay Fever should not be termed as Hay Fever. The secretion in Hay Fever is usually clear and non-irritating throughout the attack. Fever and malaise are usually absent. Recurrent Hay Fever may ultimately lead to chronic sinus infection. In typical Hay Fever besides attacks of sneezing, frequently prolonged accompanied by watery or mucoid discharge, headaches and nasal obstruction, there is a characteristic bluish grey pallor of the nasal mucosa. Moreover the oedema of the nasal mucosa does not shrink readily with cocaine and adrenaline.

Rhinological opinion is sharply divided on the question of the importance of nasal factor in the group of diseases due to allergy. An increasing body of opinion favour the view that sinusitis when present in these conditions, is purely a secondary effect of the hypersensitiveness and repeated attacks of oedema and bears no causal relationship to it. The theory of bronchial asthma of nasal reflex origin reached the climax in 1919. Since then there is a decline, as the nasal treatment both palliative and surgical have not sustained the results published before 1919. The asthmatic's nose and throat have to be systematically examined. The conditions of the sinuses, especially the maxillary and anterior ethmoidal cells should

be carefully studied. The condition of the nasal septum and the turbinates should be clinically studied as such and also after test treatment by cocaine.

Ethmoidites, polypoid formations and adenoid hypertrophy if detected must be surgically treated. About septal deformities, the views are not definite. AMESUR reports 70% benefit by submucous resection of the septum if the septal deformity is high. If hypersensitive spots in the nose are detected, light electric cauterisation is well worth a trial.

Tuberculous lesions of the nose may be primary or secondary to a similar process in the lungs. It is characterised by either a low grade slightly depressed ulcer on the anterior portion of the nasal septum or floor of the nose or a sessile wart-like tumour in which tubercle bacilli are present. Both types bleed easily on the slightest irritation and are liable to recur on removal. Septal ulcer may lead on to a perforation and extension takes place towards the skin of the upper lip. It rarely extends to the accessory sinuses.

Tuberculosis of the pharynx and the fauces is rare and is always secondary. There is no site of election and may begin anywhere. The parts affected present a worm eaten appearance, the ulcer being surrounded by an area of congestion. The ulcers are superficial and covered with a dirty greyish secretion. They bleed easily on pressure. When the lingual or faucial tonsils are affected, the depth of the ulcer is great, even the whole tonsil may be destroyed. Mayo has reported that tuberculosis of the tonsils may be primary. 8% of all tonsils removed by him were tuberculous.

Hollander and Szanto in a paper in 1946 as reported in *Excerpta Medica* Section IX Jan. '48 on Tuberculosis of the Naso Pharynx, state that this is one of the many unsolved problems of human tuberculosis. The disease is not rare. It occurs probably more frequently than tuberculosis of the larynx - in the course of pulmonary tuberculosis. The pathological process in general is an ulcerative lesion on the upper

posterior wall. Postmortem examination in cases of miliary tuberculosis has failed to disclose tubercles in the nasopharynx. This supports the view that haematogenous infection is rare. Tuberculous ulcerations are always an indication of severe general disease.

Laryngeal tuberculosis is an infectious and contagious disease most often secondary to lung tuberculosis. It is rarely primary. It is usually indolent from the beginning. It is characterised by infiltration, the formation of tuberculous granulomata, ulceration followed by oedema, fibrosis, perichondritis and even necrosis.

3 to 25 per cent of patients with pulmonary tuberculosis manifest laryngeal complications. Post mortem records show 50 to 80 per cent involvement of the larynx in fatal pulmonary T. B. cases. Frequency of laryngeal complications varies with the stage and type of the pulmonary disease. Both sexes are affected. Most frequent age is 20 to 40. There appears to be no direct relationship between the amount of abuse through vocation and the incidence of laryngeal tuberculosis. Some believe that a syphilitic soil may act as a predisposing cause, but it is not yet definitely proved.

The following pathological changes can exist alone or in combination.

1. **Vascular changes.** (a) Anaemia or mucosal pallor.
(b) Hyperaemia or injection of the mucous membrane an early sign in the interarytenoid region.
2. **Infiltration of a subepithelial character** - any part may be involved and at times reaches large proportions.
3. **Ulceration:** Takes place as soon as the tubercles break down and superficial epithelium becomes denuded. May be minute, but may be large with irregular edges, grey and crater like.
4. **Tuberculoma** as a tumour or granulation tissue.

5. **Oedema of the infiltrative, avascular type** typical ashen grey colour.
6. **Perichondritis** and subsequent destruction of the cartilaginous substance occurs readily.
7. **Abscess formation** beneath the perichondritis.
8. **Necrosis, periostitis and Osteomyelitis.**
9. **Fibrosis and Calcification.**

Anatomically it is of the utmost importance to locate the lesion and involvement of the different structures comprising the larynx; as liability to infection of the different parts of the larynx have diagnostic as well as prognostic significance. The posterior half of the larynx is the earliest and the most frequently affected area.

- I. Interarytenoid sulcus.
- II. Arytenoids.
- III. Aryepiglottic fold.
- IV. Vocal cords.
- V. Epiglottis.
- VI. Ventricular band (false vocal cords).
- VII. Ventricle of Morgagni.
- VIII. Subglottis and trachea.

Advances made in laryngoscopic diagnosis and survey and closer co-operation between the physician and the laryngologist have improved the prognosis of laryngeal tuberculosis. Morell Mackenzie wrote in 1890 "the prognosis of laryngeal phthisis is always extremely unfavourable and it is not certain that any cases ever recover". The International Congress on Laryngology in 1908 recorded that "the cure of tuberculosis of the larynx is still today an exception". St. Clair Thomson in 1924 wrote that "Twenty years ago the physician took but little interest in any laryngeal complication; he thus missed the prognostic significance of what might have been learnt by the laryngeal mirror and he failed proportionately in his advice and help to the patient. A stationary or healing stage of the

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lung to a certain extent has a favourable effect on the larynx; though in some cases it is otherwise. Life expectancy in pulmonary tuberculosis—without laryngeal involvement is about 60 percent whereas when accompanied by the laryngeal involvement it is reduced to approximately 30 per cent”.

In early laryngeal cases there is complete absence of subjective symptoms. This important point makes it imperative that each and every case of suspected pulmonary tuberculosis must be systematically and periodically examined by a laryngologist. Spasmodic or paroxysmal cough with or without pain is significant. Dyspnoea is not an early symptom. It may appear suddenly in cases of oedema, abscess formation, or perichondritis of larynx. Painful swallowing (Odynphagia) creeps on gradually as perichondritis, infiltration of the laryngeal muscles, or neuritis developes. Dysphagia—difficulty in swallowing occurs when larynx becomes more involved. It is a most annoying symptom, making the patients not to take food. This is a grave sign in a T. B. Case where it is necessary to allow as much nourishment as can be taken. Dysphagia is a difficult condition to relieve and leads to starvation. Voice disturbance ranges from voice weakness, dysphonia to total aphonia. St. Clair Thomson writes “It is a truism to say that no one at any age should have hoarse voice continuously for more than three weeks without obtaining an expert examination of his larynx”.

“At any age but particularly in early adult life it may lead to the diagnosis of tubercle. In the elderly it may reveal a carcinoma. In either case the saving of life depends primarily on early diagnosis”.

“A little fire is quickly trodden out, which being suffered, rivers cannot quench”. Shakespheare—Henry VI.

Generally speaking tuberculosis of the larynx can be distinguished from cancer by these characteristics.

1. It has numerous situations, it remains superficial, it does not affect the mobility of the cord.

THE N. & T. IN RELATION TO CHRONIC LUNG CONDITIONS 137

2. It is accompanied by pulmonary lesions with bacilli in the sputum.
3. Giant cells are found on histological examination of the lesion.

In doubtful cases several biopsies should be made from different parts of the lesion,—Deep X-ray treatment as a diagnostic method is dangerous and must be condemned.

The temptation to diagnose any laryngeal affection in a patient known to be phthisical as tuberculous is very great. It must be remembered that a phthisical patient is as liable to non-tuberculous laryngeal lesions as any other patient. Acute catarrhal laryngitis is not a precursor of tuberculous laryngitis. It must be remembered that tuberculous laryngitis is sometimes painless. The early signs are :—

1. Isolated redness of a vocal cord.
2. Swelling and redness of the vocal process.
3. Swelling of the mucosa in the interarytenoid region.
4. Prolapse of the ventricle of Morgagni.

At the Alpine Sanatorium at Davos, they divide laryngeal tuberculosis in two groups.

1. Benign type—Uni or multifocal.
2. Malignant type—generalised or diffused, infiltrating and ulcerated or disseminated.

Benign types may remain stationary, heal spontaneously, or following a pulmonary deterioration, suddenly spread and ulcerate.

In their opinion the most hopeful cases are infiltration or ulceration of the true cords. It must be remembered that tuberculosis has a tendency to relapse as well as to heal and any fall of immunity affecting the lung may also affect the larynx. Prognosis in the ulcerated and infiltrated generalised form is not so bad, but is still grave.

In their opinion, the only laryngeal cases unfit for treatment in the Alps are those where there is much dysphagia and debility. In their view endolaryngeal cauterisation must not be done until the lung condition is inactive, the only exceptions are when cauterisation is the only way to deal with an ulcer which causing dysphagia so severe as to threaten life or is producing an exhausting cough.

At Davos Alpine Sanatorium the following routine treatment is followed :—

For "Malignant" Laryngeal types :—

Symptomatic treatment only, including atropine X-rays (10 to 15% H. E. D.) Ultra Violet light, alcohol injection of the superior laryngeal nerve and resection of the epiglottis if need be.

For benign types :—

(a) Lung condition if active and without pain in the larynx - Allow lung condition to improve; SILENCE and phenol inhalations. If there is local pain in larynx-local anaesthesia and in urgent cases galvano cautery.

(b) Lung condition if inactive — Intravenous Solganol B; X-ray therapy and in cases of delayed recovery-galvano cautery.

(F. W. Watkyn Thomas, The Medical Annual, 1938).

Albers (1829) advocated tracheotomy for the rest of the larynx. Belloc (1837) advocated steam inhalation and insufflation of powders to relieve congestion and to reduce pain. H. Green (1838) advised topical application of caustics. Heryug (1886) recommended curettage of the laryngeal T.B. Krause (1885) used topical application of lactic acid. It will be seen that treatment has ranged from one of passive and hopeless expectancy to that of radical surgical interference. It must be remembered that great stress must be placed upon the state of pulmonary condition. Before any active surgical interference with the larynx is initiated the pulmonary condition should at least be stationary. Such time must elapse as to allow an

improvement in body weight and general abnormal findings. Until then conservative therapy of the larynx is indicated. Unless vital or urgent symptoms present themselves, especially when they concern nutrition, or respiration, surgical interference be avoided. It must be remembered that laryngeal tuberculosis is highly infectious and requires isolation under an intelligent but strict discipline. This means sanatoria treatment. Absolute voice rest is important. St. Clair Thomson states that "the silence treatment is much easier to carry out in Sanatorium than anywhere else. There the patient had no need to use his voice. Everything is done regularly and automatically. He has no orders or inquiries to make. Few, if any, questions are put to him. Friends or relatives do not depress and make him nervous as their calls are few and far between. And he obtains the sympathy and understanding from fellow sufferers".

"Who alone suffers, suffers most in mind,
Leaving free things and happy shows behind,
But then the mind much sufferance doth overskip,
When grief hath mates and bearing friendship".

—Shakespeare-King Lear.

Regular intralaryngeal instillations or sprays of drugs is helpful. Topical application of formalin or lactic acid may be necessary. Insufflation of powders, such as Orthoform, Idoform, Anaesthesin and Zinc stearate are necessary when pain or dysphagia is present. Helio therapy or Radio therapy have their uses. Electric or chemical cauterisation is also advocated. Endolaryngeal and extralaryngeal surgical treatment may become necessary.

Tuberculosis in general as you are aware is a social disease; that is to say, it is largely dependent on environmental conditions. Indeed it is a sinister illustration of the failure of these prerequisites of a healthy community; good food, good housing, sound sanitation, congenial working conditions, leisure for recreation and relaxation; and the medical care. The parents may give it to their children and children to their parents, *only* as an infection.

The Registrar General for England and Wales in his Decennial supplement ending 1931 has given the following death rate from Pulmonary Tuberculosis:—

Social Class.	Death per 100,000.
I. Upper professional and Managerial	 60
II. Lower professional & Managerial	 80
III. Skilled workers	 100
IV. Semi-skilled workers	 120
V. Unskilled labourers	 120

Each year in England and Wales 60,000 new cases of Tuberculosis are notified and there are 25,000 deaths.

It will be noticed that treatment of pulmonary tuberculosis as well as laryngeal tuberculosis is a full time job. The cases have to be systematically examined, lesions must be properly charted, treatment should be continuous, rational and under proper supervision and with the advance of collapse therapy, thoracoplasty and other surgical methods of treatment of pulmonary tuberculosis a favourable effect on the larynx is often produced. Control of the primary tuberculosis process in the lungs permits the vital forces concerned with resistance to concentrate on the local focus of the disease. Any procedure directed at lessening the quantity of secretions which pass through the glottis will relieve the larynx considerably and aid in the process of healing.

It is a welcome sign that our City Corporation has recently started a separate Tuberculosis Hospital. Our State authorities have also started another tuberculosis hospital near Poona. Our Union Defence Services have also their own separate tuberculosis hospital as well. No doubt this is far too inadequate. Still some beginning has been made. There are very very few municipal or state or private sanatoria for these conditions. With the present world wide B. C. G. campaign and the initiation taken by the W. H. O. and the

interest awakened thereby among the lay public and also the State Health Authorities, I hope in years to come the State will assume total control over pulmonary tuberculosis and all such cases will be hospitalised and isolated if necessary and Physicians, Thoracic Surgeons and E. N. T. Specialist will begin to tackle this colossal problem in a real team spirit.

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Abstracts

THE MEDICAL TREATMENT OF MENIERE'S DISEASE

By J. KODICK, L. R. S. TAYLOR & G. H. BATEMAN.

(*Proceedings of the Royal Society of Medicine*, Vol. XLIII, No. 4, April 1950).

Meniere's disease is a vestibular manifestation of a constitutional disorder and not a primary affection of the vestibular apparatus. Various medical treatments suggested are, restricted fluid intake, salt free diet elimination of focal sepsis, removal of intestinal toxins, Vitamin B, therapy. Vertigo is due to a vascular disorder of the small vessels of the labyrinth which may be a primary vasoconstriction or vasodilation resulting in excessive formation of endolymph. Intradermal injection of histamine diphosphate differentiates two types of cases. The cases which show positive response to the test should be treated by histamine densitization by gradual increasing the dose of the drug, which is injected subcutaneously, cases which show a negative response, by nicotinic acid 100 mgms. t.d.s. The dose may be increased gradually to 250 mgms. Other drugs on trial are Phenargen and Theophylline or Benadryl.

N. K. APTE.

HOARSENESS IN CHILDREN

By J. M. LORE.

(*Archives of Otolaryngology*, Vol. 51, No. 6, June 1950).

Hoarseness in children is far more widespread than supposed. Hence a competent and complete laryngeal examination must be undertaken. The causes of hoarseness are not extensive as in adults. The chest and nervous system lesions do cause paralysis of vocal cord in children.

N. K. APTE.

SELECTION OF PATIENTS FOR FENESTRATION SURGERY

By C. M. KOS & S. N. REGER.

(*Archives of Otolaryngology*, Vol. 51, No. 5, May 1950).

A patient with following clinical features is suitable for operation according to the author:—

- (1) Bilateral hearing loss in which air conduction threshold exceed approximately normal bone conduction threshold by 30 decibels or more.
- (2) Tympanic membranes are normal.

ABSTRACTS

143

- (3) X-Ray of temporal bones show no evidence of residual infection.
- (4) Hearing is good with the use of telephone or hearing aid and is better in a noisy environment.
- (5) Onset of hearing loss occurs after puberty and is not related to systemic or local infection.
- (6) The hearing loss is alleged to have progressed and then to have remained stationary and to have continued to progress slowly.
- (7) Blood relations of the same or antecedent generations have or have had similar hearing loss.
- (8) Tinnitus and/or vertigo expressed as current or past complaint.

The author has discussed the treatment of otosclerosis.

N. K. APTE.

OTOSCLEROSIS: RESUME OF THE LITERATURE WITH CLINICAL OBSERVATIONS

By V. S. SUBRAMANIAN, M.B., M.Sc. (Med.) F.A.C.S. (Madras).

(*Archives of Otolaryngology*, Vol. 51, No. 6, June 1950).

The author has discussed the different aspects of otosclerosis in great details.

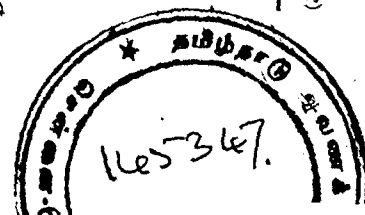
Low blood pressure and venous stasis have been found to be aetiological factors in otosclerosis according to author. The author also gives certain interesting aspects of the disease as noted by Lempert. Only fulminant type of otosclerosis show pinkish hue promontory. Fenestration does not give good results in these cases. Prognosis is better in older patients as chances of bony regeneration are less in them after fenestration than in young patients. Polishing and burnishing technics of Lempert are applied more to periosteal layer than endosteal layer; hence periosteum fails to regenerate but endosteum does regenerate. Tinnitus when present improves with the improvement in hearing after fenestration and may completely disappear.

N. K. APTE.

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