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Editor:

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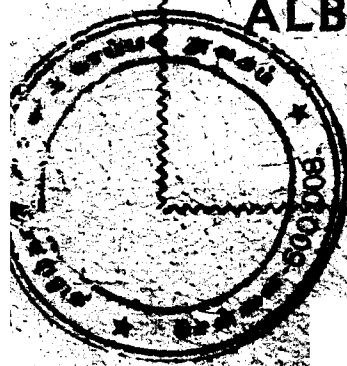
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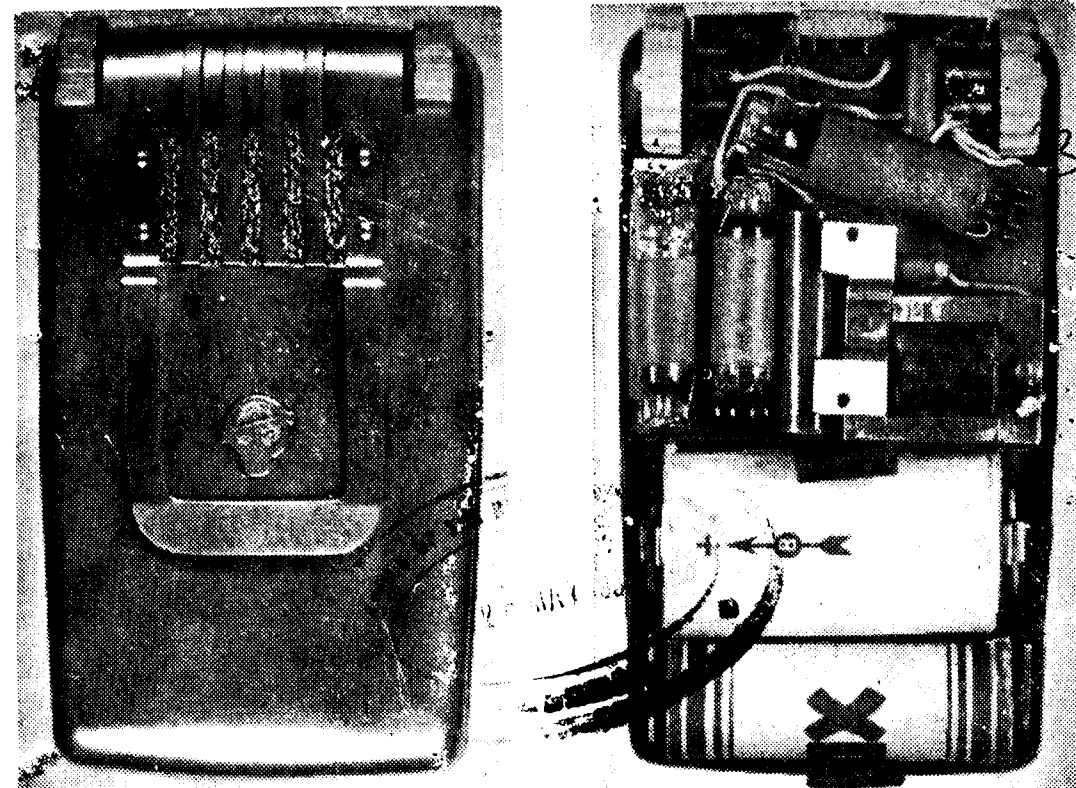
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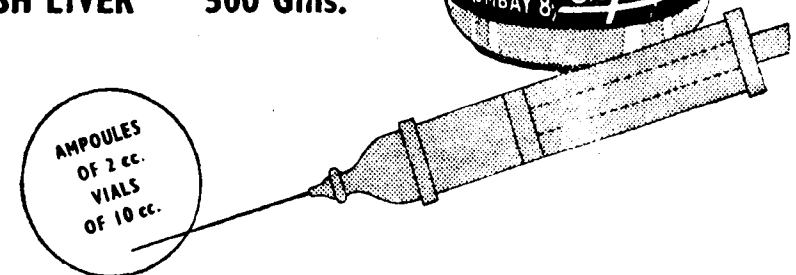


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## INDIAN JOURNAL OF OTOLARYNGOLOGY

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### REHABILITATION OF THE ACOUSTICALLY HANDICAPPED

BY

Dr. C. A. AMESUR, M.S. (Lond.).

Since I last presided (fourth annual conference, December 1951 at Calcutta) the Union Government of our Republic have appointed two committees in which we were very much interested. First was in April 1952 appointed by the Honourable Union Health Minister under the Chairmanship of Sir Arcot L. Mudaliar named "The All India Medical Institute Advisory Committee" for postgraduate Medical Education and Research. We have sent an eleven page initial memorandum to this august body for consideration. We have also suggested that if you add anything, subsequent memorandum will follow. The second is an "Expert Committee on Deafness" appointed on 10th October 1952 by the Honourable Union Minister for Education, to whom I have put some suggestions on 6th October 1952, though I answered their ordinary questionnaire on 27th September 1952. This questionnaire most of you must have answered by now. I am very pleased that three of our founder members are serving on it under the chairmanship of Dr. S. Roy, M.P. our president for the current year.

I have been advocating since 1934 taking of Vit. "A" to prevent upper respiratory and ear infections. My publications of 'otitis media in infants' in the Medical Digest of February 1936 unfolds the experiments and reasoning for the same. In my presidential address in 1949 (2nd annual conference) at Bombay I re-emphasised this and requested the local bodies to give it free to school children. In that I talked about the removal of Adenoids, Deaf Clinic, Fenestration, Deaf clubs and postgraduate (E.N.T.) medical Research. In addition I suggested visiting professors and E.N.T. Units for the taluka Deaf Clinic. We passed a resolution and requested the Union Government to

reduce the custom duties on hearing aids. At various post-graduate examinations I found the students to be fumbling, in teaching the lip-reading, I published an article on the same, in the Indian Journal of Otolaryngology of October 1950. In my presidential address at Calcutta in 1951 (fourth annual conference), I estimated there were more than 8,000,000 hard of hearing people in our country and I went into the complex process of manufacturing and/or cheapening the Electric Hearing aids and the miniature batteries. On account of the forthcoming 1951-52 General Election I suggested, in the meantime to our colleagues in the various State Hospitals to bring about the creation of Deaf Clinic, Deaf Clubs with lip-reading teachers, and so create a psychology for using hearing aids. I also suggested more modern instruments to various hospitals for fenestration. With this introduction I now pass on to the question of Rehabilitation of the Acoustically Handicapped.

Little is known to the public of these people because of very small numbers of the deaf in them. Though a census of the 1,000,000 New York school children showed them to be 4% and of London to be 6%, the mean of 5% is very likely to be nearer the mark. Our Deaf Committee questionnaire will settle exact figures for our country. At the J. J. Hospital Bombay we get annually 6,981 primary hard of hearing and 17,460 secondary to other upper respiratory diseases with 60 congenitally deaf and 20 adventitiously deaf. This brings us to the question on proper nomenclature, which is accepted in U.S.A. and U.K. viz. The congenitally Deaf—those who were born Deaf. The adventitiously deaf—those who were born with normal hearing but in whom the sense of hearing became non-functional later through illness or accident. The hard of hearing—are those in whom the sense of hearing although defective, is functional with or without a hearing aid.

The deaf should not be referred to as "deaf-mutes or deaf dumb" for they have vocal cords and they can laugh, cry and even scream; for this deafness is a mere physical handicap as the soul remains intact.

This brings us to audiology, which is defined by Canfield: "Audiology is the science of hearing, it is a new integrated concept of human communication. Including more than the physical aspect of ear disease, it embraces, every concept of art and science which can contribute to, or form a part of propagation of sound, its transmission to the ear, its fate within the

human organism, psychological process based upon the interpretation of the perceived sound, and the consequent reaction of the person to the mental concept engendered. Audiology considers everything that can be of aid or detriment to life from sounds which can or should be heard".

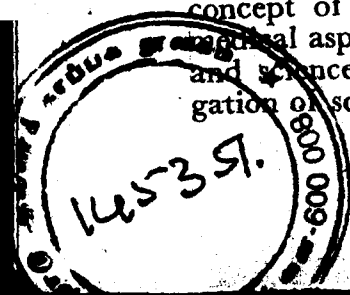
Audiologist is the one who made a special study of hearing and its problems. He may be an educator or medical man e.g. otologist, psychiatrist etc.

Rehabilitation is defined as a planned method of treatment designed not only to use surgical treatment but help by lip-reading, hearing aids and auditory training.

For the purpose of investigating the cases of hard of hearing or even the deaf one requires audiology centres at State Capitals, units at district head quarters and some facility at taluka hospitals. It is well known that a very modest programme is better than none at all, but in the long run it hinders creation of a full centre as the Governments all over the world consider them to be sufficient for some needs and therefore are not willing to create full centres on account of poor finances due to the world wars.

Denmark is a very small country compared with any of our part I or II States in the Union of India; yet in the last four years it has built three centres and if they prove successful will have two more. Figure 1 depicts one such centre at Odense, with a population of 100,000, but draining an area of 70 to 80 K.M. with a population of one million. This is not a University town but has a school for the deaf, and another institution of hard of hearing people. Prof. C. Rojskjaer is in-charge of it. He has described in great detail, each one of the squares in Figure 1 in Acta Oto-laryngologica Vol. XLI: 1 & 2, 1950. You will notice that prophylaxis both at School and the place of work is given a pride of place, so as to avoid many cases of hard of hearing and reduce the damage in others to smaller quantity. Those who need aids like lip-reading, auditory training and hearing aids will get the benefit early and so lessen the hardships of deficient hearing. We have requested the Mudaliar Medical Advisory Committee to have such a centre added at New Delhi from a splendid gift of the New Zealand Government under the Colombo plan and to have these 47 rooms built on ground floor and leave ample space for research and expansion.

To enter such a rehabilitation centre the first impressions carried while waiting are of great importance; therefore the



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waiting hall should have a couple of paintings depicting the auditory rehabilitation process and the anatomy and physiology of the hearing apparatus. The hall should be roomy and with ample sitting accommodation. The staff should be very tactful in this waiting period and some pamphlets or picture magazines to be provided to amuse client. I would now request you to go through in detail a manual of planning an audiology clinic for the rehabilitation of the acoustically handicapped by Dr. Moe Bergman published as a supplement LXXXIX to *Acta Otolaryngologica* of 1950. The audiology facilities given by the Veterans Administration, New York are the best and nearly ideal. Therefore the undermentioned charts and description is of that great auditory clinic. The diagrammatic representation of the floor plan Audiology Clinic is in Figure 2. Such a Clinic should have the following units, which are described in great detail by Dr. Bergman in his monogram.

- (a) An administrative and Reception Unit.
- (b) An Otological Examination Unit.
- (c) A Clinical Acoustic Unit (including rooms for hearing tests and others for the selection of hearing aids).
- (d) A Speech Training Unit.
- (e) An auditory Training Unit.
- (f) A Speech Reading Unit.
- (g) A Psychiatric Team Unit.
- (h) An ear insert Laboratory.
- (i) A Technical Unit (for the design, construction and maintenance of equipment).
- (j) A Vocational Guidance Unit (for Vocational counselling and job placement).
- (k) A Group Therapy Unit.
- (l) A Recreation Unit.
- (m) A Research Unit.
- (n) Rest rooms and storage place.
- (o) Staff office space.
- (p) Student rooms.
- (q) Expansion space.

Let us follow Figure 3. the flow chart. It is highly desirable that the patient should have all these facilities near at hand and if the centre is to be newly built then on the ground floor only, which will avoid fatigue and time wasted in searching different blocks on the upper floors or in a huge compound. This may make the handicapped person disgusted and take a short view and leave the centre.

In building the centre, the basic architectural requirements should be given jointly by an otologist and an audiologist, but the final structural plan should be prepared by an architect competent in acoustics. Here one will require two sound proof rooms which are very expensive to build. It is estimated that a room which will provide 35 decibels of attenuation should cost approximately Rs. 5,000, a 45 decibels room about Rs. 8,000 and a 55 decibels rooms with 35 decibel door with sound lock will cost Rs. 15,000 and 70 decibel room from Rs. 50,000 to 65,000.

#### PERSONNEL REQUIRED FOR SUCH A CLINIC IS :

**Medical :—**(a) Medical director or co-ordinator (b) Otolologists.

**Psychiatric team :—**(a) Psychiatrist, (b) Clinical Psychologist, (c) Psychiatric social worker.

**Administrative :—**(a) Non-medical director or co-ordinator.

**Counselling :—**(a) Interviewer-counsellor, (b) Psychologist.

**Clinical acoustics :—**(a) Supervisor of clinical acoustic, (b) Clinical acoustic specialists, (c) Ear insert laboratory technicians.

**Instruction :—**(a) Supervisor of instruction, (b) Auditory training instructors, (c) Speech reading instructors, (d) Speech correctionists.

**Instrumentation :—**(a) Electro-acoustic engineer, (b) Electro-acoustic technicians.

**Research :—**(a) Director of research, (b) Research technician.

**Clerical etc. :—**(a) Clerical person, (b) Receptionist, (c) Maintenance.

Professional abilities which should be available are shown in Figure 4 and a typical Table of Organization for the auditory

rehabilitation is shown in Figure 5. The personnel should be judiciously selected and a number of them including research worker given reasonable salaries, so that they should never think of leaving the centre for the sake of improving the family income in our congested and expensive cities. To buy the scientific equipments of such a clinic will cost about \$ 25000 (excluding freight, insurance 10% and customs duties 31½%) but less for a unit for the civil hospitals and rooms for the taluka hospitals.

This will do for the hard of hearing and now let us ponder over the deaf and the adventitiously deaf.

In the pre-Christian era it was known that in the East e.g. India, Iran and Egypt instructions had been given to individual deaf, whose parents were well placed in society. Then in the Greek and the Roman Empires, also the privileged few deaf had private instruction. But in general the condition of the deaf people on the whole was pitiable. Herodotus speak of the deaf son of Croesus. Hippocrates makes reference to the deaf as a class, Plato and Aristotle mention the deaf and consider them incapable of being educated. Archigenes spoke of them in the first century and St. Augustine spoke of them with the possibilities of their having a faith. Bede in 691 through Bishop John of York performed a miracle, when he taught lip-reading to a deaf.

Dr. Cardano an Italian attempted the principles of teaching manual alphabet. But Spain gets the credit for giving effective tuition to the deaf. Pedro Ponce de Leon taught them lip-reading in 1555. Then came the famous discovery of auditory tube by Eustachious in 1563. At this period Dr. Bulwer in England wrote "the natural Language of the Hand" and "The Deaf and Dumbmans Friend" Then various European Countries followed. The U.S.A. had its first School in 1810; and now has compulsory and free education in all the States; and the Schools are in all but two of its States. In India we have a revival of interest and fifty-two small schools, since the beginning of the present century.

The most wonderful thing about deafness is that it is merely a physical deprivation. The soul remains unscathed. His life is rich in many things of life, though day after day he hears nothing.

The sins of the parents (syphilis as a rule), have fallen on the congenitally deaf child or his own karma, but this is not so

with the hard of hearing child. His ailments could have been detected early by the parents from earache, infected throat and frequent colds. Other symptoms include inattention, frequent requests for repetition of spoken words, cupping the hand on the ear, cocking the head, copying dictation, indifferent responses to music, abnormalities of speech, dreaming and poor school reports. At home not to be overlooked are truancy, lying, stealing and a typical behaviour only to attract ones attention.

After this when the parents bring the child the family doctor should screen with a watch tick, and ear nose and throat examination. At this stage it is better to inform the parents in an intelligent and tactful manner that as a result of screening one finds impaired hearing of the child and so request them to co-operate at an audiology centre and get the child to be well again. Here he should be given a complete purtone audiometer test in sound proof room and thence follow the routine as mentioned in Figure 1. In school he should be given the roving seat and lip-reading started. Auditory training should be given to the wearers of corrected artificial aids. They should be encouraged to join extracurricular activities like the sports, boy scouts etc. In addition Mahatma Gandhi's Nai Talim Vocational classes be given, so that when he grows up, he has a useful trade to fall back for his living.

What have the blind, the cerebral paralysed the hard of hearing, the crippled (polio-cases) and other handicapped, in common? Thus they have a normal approach to education, even though mechanical devices such as hearing aids may be called into use. The sole exception in the ranks of these handicapped children is one who is deaf. He is not only physically handicapped but educationally is entirely dependent on ability to hear. To the deaf, all that reaches the mind through the avenue of the ear is lost. Because of this unique character of this handicap, the deaf child should be excluded from legislation covering other types of physically handicapped. Therefore to give him a square deal, special legislation should be enacted to give him free compulsory Nai Talim suited to his needs. To do this is common sense; to do otherwise is not only to court disaster but waste time and lives.

Dorothy Britton's advice for the rehabilitation of the aphatics is as follows :—

**First:**—Speak slowly and distinctly when talking to an aphasic patient. This does not mean that it is necessary to slow the speech enough, to make it obvious, but articulation should be clear, without slurred words or endings.

**Second:**—Present a single idea at a time, when the patient is required to make a choice. For example, ask him, "Would you like to make a rug?" "Would you like to make a hot pad?" So that he has a little time for consideration between each idea rather than, "Would you prefer to make a rug or a hot pad?" which would confuse many an aphasic.

**Third:**—If a patient is struggling to think of a word, help him say it, but only after he has been given a reasonable chance to find it himself.

**Fourth:**—If there is any doubt about a patient's ability to read directions, ask him if he has any trouble with reading; many aphasics will attempt to hide their disabilities but they are usually glad to have them understood.

**Fifth:**—Be sure the patient knows the name of the object he is making or working with if it is not too technical. Have him repeat the word, then say, "Let me write it for you so you can study it a little", or something similar, then say it for him again. Whenever possible, give him the written word as well as the spoken pattern. Try to give him the names of his tools in the same way. If directions can be written for him, write in simple sentences.

**Sixth:**—If a patient can use even limited speech, don't talk for him or let him resort to gestures alone. Help him when he needs it, write it for him to read and study if he can, hold him to the point if he rambles, but make him use as much speech as he can, as much as possible.

Deaf school teacher with a trained ear can listen to the child's voice and to his random utterances abnormalities of quality, fluency rhythm, and from their quality soon concludes as to the state of child's hearing. He should be taught best by the combination of methods of oralism and manualism the finger alphabet. The language of the sign and gestures be discouraged. An employer is more inclined to favour a deaf, whom he can give oral instructions rather than a one with whom he communicates by gestures or writing. These deaf children should start special nursery school so that by five they are ready for special school of Nai Talim:

Mr. J. W. Jackson, the Superintendent of the Nebraska (U.S.A.) school for the deaf, founded in 1869, has given me plenty of information of the running of that institution and a copy of a Pamphlet by Magdalene Pickens from where extracts are taken. The evolution in the methods of teaching in this institution from its inception are:

(1) The Manual Method: this is what is called a finger alphabet, which was co-related to the written alphabet.

(2) Sign language or the French system of gestures and pictures was adopted and is now discouraged.

(3) Oral method is also known as Lip-reading was introduced in 1877.

(4) Aural method was invented and used first in U.S.A. by this institution in 1879. The aid they called "audiphone" made of vulcanized rubber, fan shaped, with tension cords attached to the rim. The edge of the fan was placed against the teeth, through which sound was conveyed to the auditory nerve. By its use many deaf learnt speech. In 1885 Scientific investigation of this method took place and was agreed in U.S.A. to be good scientific one for teaching the deaf.

(5) Combined Manual and Oral system in vogue since 1907 and the sign language given up.

(6) 1937-38 visual aids in education was given by moving pictures and still pictures. The proper vocabulary is supplemented with pictures, enabling the children to connect words in the written and printed language with the pictures they see and the experiences unfolded before them.

(7) In 1938 acoustic programme was set up including the audiometric hearing test.

As a result of scientific investigation, the audiphone has become an integral part in the education of the deaf. Visual education is a vitally important method now employed in teaching the deaf. Recording machines, the radio, a public address system, hearing aids and phonographs all these play not only an individual roll in the teaching of the deaf, but an inter-related part as well.

In the social life they have participated in all sorts of inter-state High Schools sports and even won championships. They

have their own athletic club and basket ball club. They also have literary and Church Societies, Card and Dancing Clubs.

Deaf should be an integral part of our economic industrial and defence work. They have been fitted in a variety of occupations and professions with the exception of medicine and law. According to U.S.A. Statistics the deaf driver "is likely to be the safest and most careful driver" and therefore is issued a licence to drive a Car anywhere in U.S.A. They have an insurance organization of their own and are looked upon as good risk by the large Insurance Companies of America. During the world war II, they were employed in U.S.A. defence work. They not only enter fields of work in which they compete with the hearing, but are often sought by concerns, who believe in their ability and dependability. Here are some of the remarks of the employers ;

An official of Interstate Aircraft and Engineering Co. of California said : "They are making good. Deaf folks have especially nimble fingers, which stand them in good stead in close critical work".

Speaking from many years of experience, Henry Ford says : "The deaf require no special consideration, they do their work one hundred per cent." L. V. Hannah, employment manager of the Firestone Tyre and Rubber Company, in a recent address said : "Our experience since those early days has fully justified our confidence in the ability and dependability of deaf workers". Charles W. Sieberling of the Goodyear Tyre and Rubber Company says "We started with eight deaf workers. Gradually we added more until there was a total of 800 deaf men and women on the pay-roll. The record speaks for itself. These men and women proved themselves loyal safe and efficient workers".

Here it would not be out of place to give suggestions for the parent education as to how to act and how not to act as given by Dr. Jean Utley :—

#### DON'T

1. Don't listen to the neighbours and relatives when they say thoughtless things about your child.
2. Don't feel you must apologize for him.
3. Don't be ashamed of him. Let him know you think he is a fine important person.

4. Don't keep him away from other children because he has no speech and doesn't hear as well as they do. They may be the best teachers.
5. Don't let his handicap worry you too much. He will sense your anxiety and worry, too.
6. Don't forget that Father is an important person in the child's life too.
7. Don't compare him with his brothers and sisters or with the neighbour's children.
8. Don't blame yourself, but start now to try to help him.
9. Don't let any member of the family "baby" him.
10. Don't be afraid to let him grow up and develop in other ways like any child.
11. Don't talk in single words. He probably understands more than you give him credit for.
12. Don't shout at him. Talk in a natural voice close to his ear. Your voice will be much louder to him than you think.
13. Don't wait on him "hand and foot".
14. Don't exaggerate your lip movements. This makes speech harder to understand.
15. Don't correct every word he uses ; accept and encourage his speech.
16. Don't expect his development to be spasmodic ; development is continuous.
17. Don't be his greatest handicap.
18. Don't dream of "treatments" and "cures".
19. Don't waste time and energy bewailing the fact of the loss of hearing.
20. Don't threaten him.
21. Don't be negativistic ; try to build on the thing he achieved.
22. Don't display a "deal pan" when you talk to him. Make him think you are more interested in talking to him than anything else you could do.

**DO**

1. Do let him know that you have confidence and pride in him.
2. Do let him see that his whole family loves and needs him.
3. Do treat him as if you expected him to speak, and know he understands you when it is obvious that he does.
4. Do make a game of playing with him and let him watch your face when you talk.
5. Do make a game of playing in front of a mirror so that he can enjoy watching you in imitating facial movements.
6. Do give him a chance to grow up and take some responsibilities.
7. Do read to him and show him pictures.
8. Do talk to him and ask others to do so, too.
9. Do give him a chance to develop his special abilities and interests.
10. Do talk to him in a normal voice and in full sentences.
11. Do expect from him what is socially within his age and mental level.
12. Let him do alone the things he can do ; this gives him self confidence.
13. Do help him when you are teaching him to help himself.
14. Do use encouraging, positive and specific directions to elicit desirable conduct.
15. Do stress success.
16. Do co-operate with the doctor, the health examiner, the educational specialist, the teacher and principal of the school.
17. Do teach him obedience.
18. Do talk to him ; talk more and more, not less and less.
19. Do have patience and time and effort.
20. Do explain painstakingly the most vital occurrences of everyday life in the home.

21. No matter how small the residuum, do make use of the remaining hearing which he may possess. It is invaluable in learning language, acquiring speech elements and in regulating the pitch and placement of the voice.
22. Do begin immediately to train his eyes to substitute for his ear, or at least to complement his remnant of hearing.
23. Do face the light always when you are talking to him ; light on your back throws shadows on your face and makes lip-reading difficult.
24. Do teach him what is his and what is yours.
25. Do keep a daily record of his activities.
26. Do talk into his ear to store up auditory impressions which will some day aid the mastery of speech by oral methods.

Social workers or field agents have to answer many questions ; some of them are :

(1) Does he need medical or surgical treatment? This can only be answered by medical and physical examination and avoidance of tension, fatigue, nervousness etc.

(2) Does he want employment? He should avoid employment in damp places, great heat or noise—As a hard of hearing person rarely recognises his own voice defects and over rates his lip-reading. The excellent by-products of lip-reading are "Self reliance, a better understanding of human nature, and a diminishing sensitiveness and an inferiority complex". If lip-reading helps to accomplish this, then the social worker will be better able to find them jobs.

(3) Does he want an hearing aid?

(4) Does he need training?

The following are a few of the hints which should be given to the deaf person who is after employment. (1) Do not be too quick to change a job. (2) Learn how to fill in correctly the job application form. (3) Tell the employment office interviewer what you can do and do not harper on your bad luck. Do not apply for work with a friend as an interpreter. Wear a hearing aid if you have one. (5) If you are a lip-reader, do not give an

impression of understanding and agreeing, when you do not fully understand. (6) Take advantage of competent otologists and hospitals, proper hearing aids auditory lip-reading, speech correction, and finally training. Do not apply for work with only one string to your fiddle.

Research departments of the Audiology Centre and Deaf schools should not be starved as are State Hospitals but regular funds be ear-marked for research in each department.

- (a) This building should be near school or above out-patients Department.
- (b) Do make sure that you have six small rooms available even though sparsely furnished. It is impossible to carry out even simple clinical investigations if the workers in a department are treading on each other's toes and have no privacy for quiet thought reading and experiment. They also like to get away from telephones, the general traffic and noise of the clinical departments met with in our hospitals.
- (c) Library and reading room with books, periodicals and files of cuttings from journals and also reprints of articles.
- (d) Photography room and the adjacent ones for developing printing. Cameras: best to have both still and cine work, Leica for the former, and Kodak or Pailard Boles (Swiss) for the latter.
- (e) An animal laboratory.
- (f) Research in Audiology is very important for which sound proof rooms are also required. This is covered partially in a paragraph on audiology.

Bush has vigorously pointed out in his report to the president (U.S.A.), basic research and applied research represent the capital interest on capital respectively. The modern hearing aid, for example would not have been possible without the fundamental research concerned with the passage of electrons through vacuum. It is best for us all to pull together, so that the contributions of speech correctionists, otologists, acoustic-phycists, guidance specialists, psychologists and others should enhance the research out-put both quantitatively and qualitatively. The following are some of the problems which merit the attention of research workers as suggested by S. Richard Silverman:

1. Assessment of hearing under 3.
2. Tests for differential diagnosis of the various kinds of deafness.
3. Intelligence and aptitude of the deaf.
4. Personality.
5. Improving methods of auditory training.
6. Improving hearing aids and inventing new ones.
7. Measurement in speech, lip-reading and language progress.
8. Changes in curricular to fit Nai Talim system.
9. Manualism versus oralism.
10. Merits of day and residential schools.
11. Optimum means for co-ordination of academic and vocational instructions under Nai Talim System.
12. Continued investigation of the effects on deafness of adenoidectomy, radiation, inflation of auditory tubes, fenestration etc., etc.
13. Effects of Vit. "A" in the prevention of deafness.

In my 1949 presidential address before you I advocated the creation of deaf clubs. The undermentioned rules have been submitted to the Mudaliar Committee in September, 1952.

**Purpose**—Rehabilitation which includes facilities for Lip-Reading. The Deaf person tends to become desocialised and the Deaf Club plus its progeny have the socialisation of the patients as their primary object.

**Premises**:—There is some diversity of opinion whether these should be provided at the hospital or elsewhere. The argument in favour of the latter being that the Deaf may cease more readily to forget they are patients.

The rooms should be comfortable, conducive to relaxation and have a friendly atmosphere.

**Membership**:—This should preferably not exceed 100 and 60 to 80 is probably better. If increased beyond this number it tends to become unwieldly and less intimate. There is however, no reason why several should not be formed. The membership may be confined to patients of the Hospitals' Deafness Clinic but

can be extended to admit any suitable person within a certain circumscribed area.

**Organisation:**—The aim is for these clubs to be selfgoverning, once it's inception has come about and the club got under way. Some of the committee members should have connection with the E.N.T. Department of the Hospital at first at any rate and at the least should be visited frequently by such persons i.e., surgeons, assistants, social workers etc. The working Committee may be co-opted at first but should then be by annual election by the members.

**Entertainment and Caterings:**—Probably best in the hands of a small sub-committee and must be capable of reflecting and putting into effect suggestion, ideas and wishes of the members they represent.

They should aim at, at least, one major social evening per month but less imposing events should be arranged more often.

**Equipment:**—It is a great asset to have an amplifying set with loud speakers and individual ear phones.

**Finance:**—Some capital will be required but as much as possible should be done by the members themselves by annual fees, whist drives etc.

**Rules:**—A Governing set of rules must be drawn up and there must be an over riding Governing Body to which advice and settlement of any differences can be referred.

The only Otolaryngologist to get a Noble Prize in medicine and physiology was Associated Professor Robert Barany. He became the chief of the E. N. T. Unit at Uppsala with 12 beds. That Hospital is now rebuilt in 1950 with 110 beds; as Otolaryngological Department of the University of Uppsala (Sweden) under Prof. : C. O. Nylen, who like Barany is carrying on research on the Vestibular apparatus as well. This E. N. T. Hospital is very nicely described in English by Pro. : Meurman of Helsinki (Finland), where he is incharge of a new 100 bed Finnish E. N. T. Hospital built in 1950, in Acta Otolaryngologica Supplement 67 of 1948. This has special accommodation for audiometric work for the hard of hearing and deaf people (a) General, (b) Individual and (c) Research. This type of accommodation is to be advocated for our civil hospitals at district headquarters.

For the teaching hospitals, we advocate audiology centres like the one at Odense Fig. 1 in towns with a population of

## REHABILITATION OF THE ACOUSTICALLY HANDICAPPED

### ORGANISATION OF AUDIOLOGY CENTRE (ODENSE)

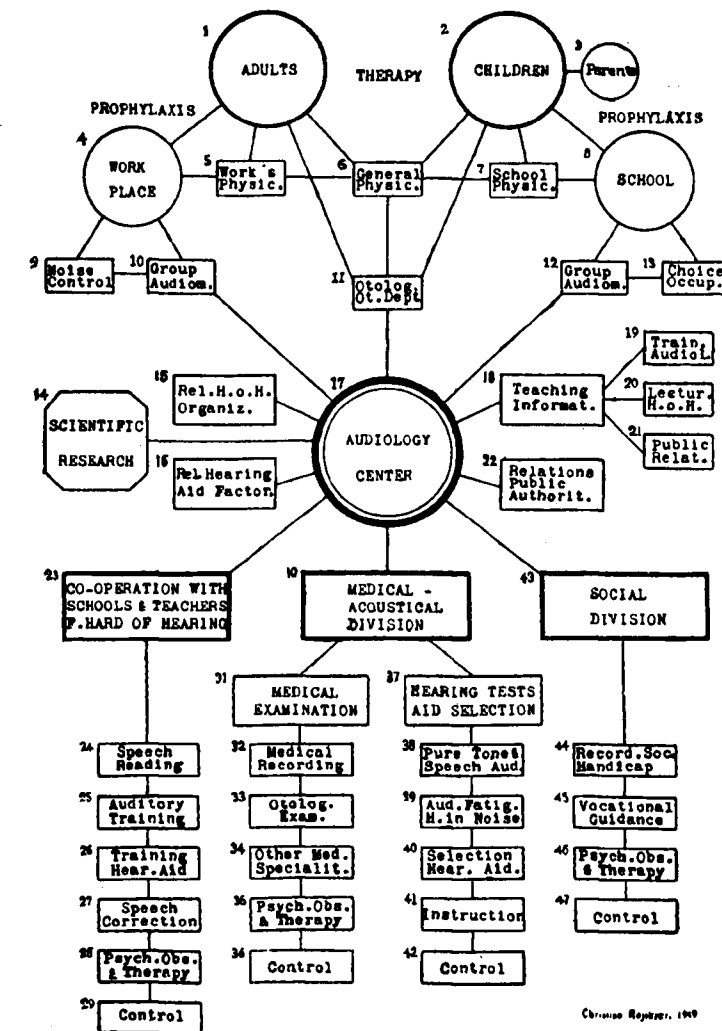


Fig. 1.



TABLE OF ORGANIZATION FOR AN AUDIOLOGY CLINIC

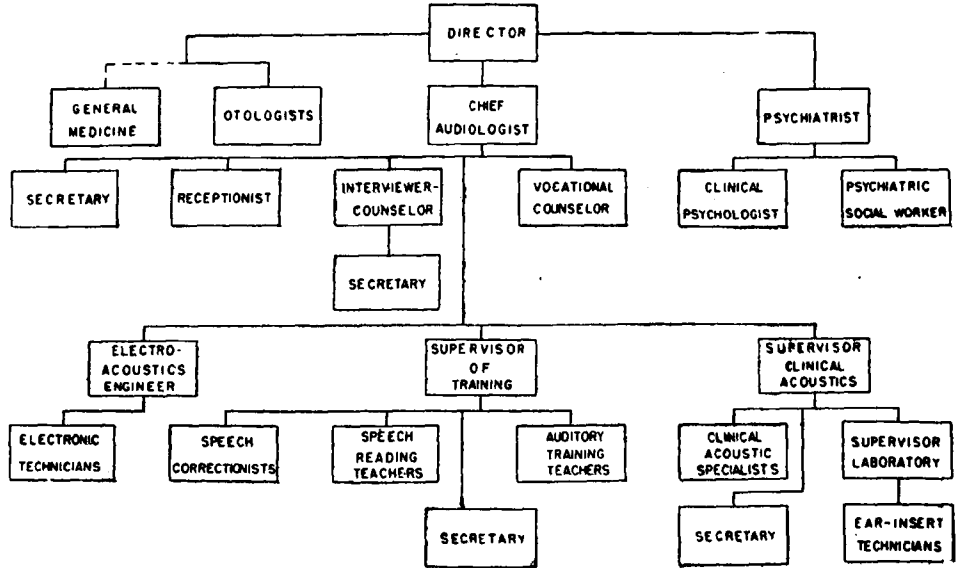


Fig. 4.

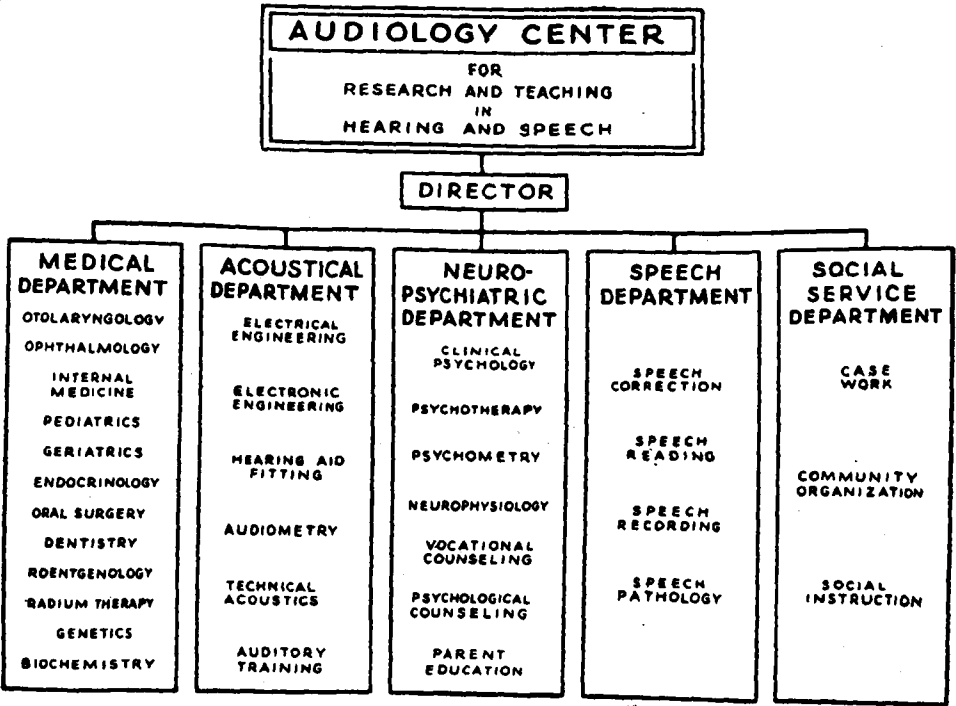
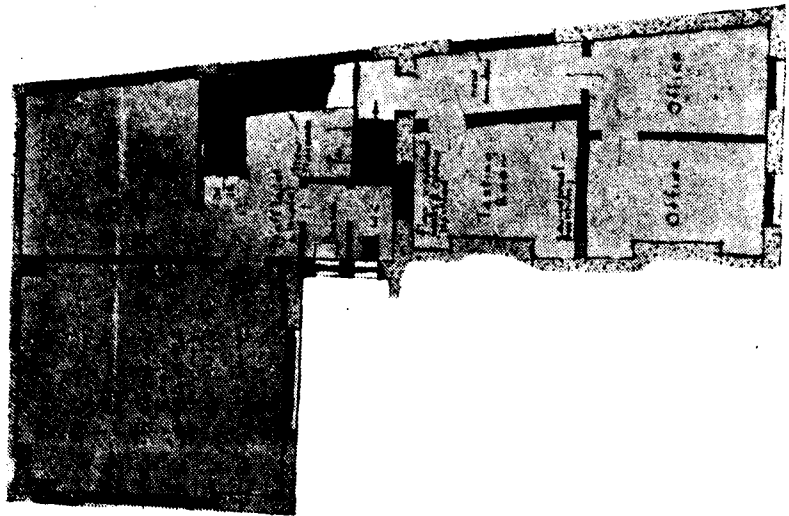
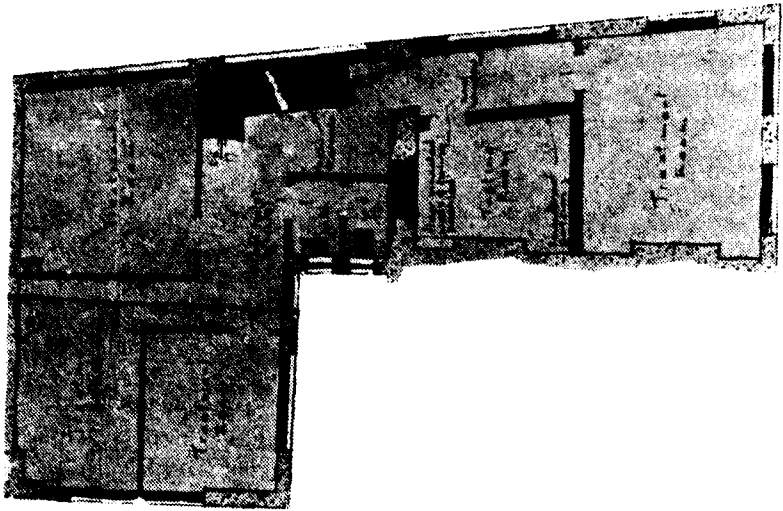


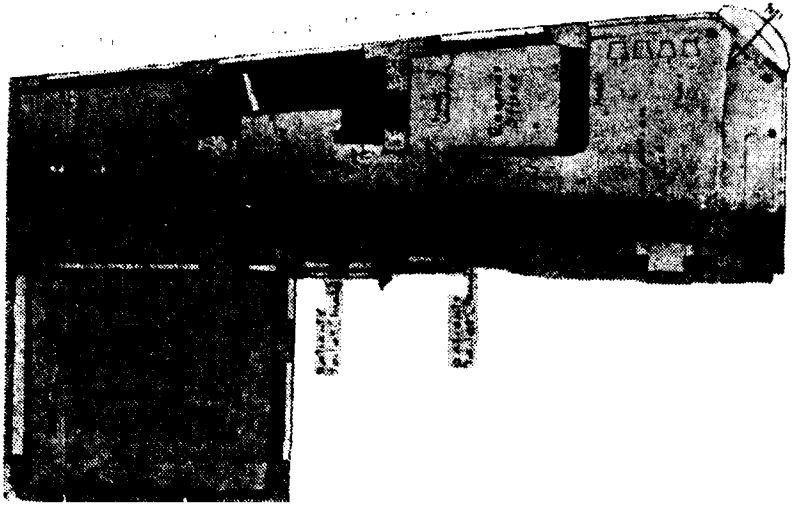
Fig. 5.



Second Floor.



First Floor.



Ground Floor.

THE ROYAL NATIONAL THROAT, NOSE & EAR HOSPITAL  
309, Grays Inn Road, W.C. 1.

Now, opposite the various conditions listed below indicate under the proper time designation, the number from above, which best describes your status. If you have had more than one operation the questionnaire applies only to the first. For example, if you understood perfectly group conversation in a quiet place three months after the operation, write number 1 in the third column "C" opposite the appropriate description. If you have no occasion to listen under the conditions listed just leave the space blank.

|                                                                                                                           | A | B | C | D | E | F |
|---------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|
| Person to person conversation, in a quiet living room or office.                                                          |   |   |   |   |   |   |
| Person to person conversation in a noisy place (streetcar, factory, noisy office, restaurant, etc.)                       |   |   |   |   |   |   |
| Group conversation in a quiet place.                                                                                      |   |   |   |   |   |   |
| Group conversation in a noisy place (streetcar, factory, noisy office, restaurant, dinner table, social gatherings, etc.) |   |   |   |   |   |   |
| Audience (lecture, movies, place of worship, meetings, etc.)                                                              |   |   |   |   |   |   |
| Telephone conversation.                                                                                                   |   |   |   |   |   |   |

A = Before operation.

B = One month after operation.

C = Three months after operation.

D = Six months after operation.

E = Nine months after operation.

F = One year after operation.

1. Would you have the operation performed again if you were to experience the same results? Yes.....No.....(check whichever applies).
2. Do your family and friends think the operation was a practical success? Yes.....No.....
3. Did you wear a hearing aid before the operation? Yes.....No.....Was it Air Conduction (in the ear)?.....Bone Conduction (behind the ear)?.....
4. Do you wear a hearing aid now? Yes.....No.....Is it Air?.....Bone?.....
5. Do you wear a hearing aid now only under special conditions (such as place of worship, movies, etc.)? Yes.....No.....If so, please indicate which conditions.....
6. Did you have head noises before the operation? Yes.....No.....If so, please describe them and how often you had them.....Do you have head noises now? Yes.....No.....If so, please describe them and how often.....
7. Did you ever feel dizzy before the operation? Yes.....No.....How often?.....Do you ever feel dizzy now? Yes.....No.....How often.....
8. During the first two months after operation did you notice any difference in the quality (not loudness) of the speech which you heard?  
Was it  
(a) more pleasant.....the same.....less pleasant.....  
(b) clearer.....the same.....less clear.....
9. What is your occupation?.....
10. Will you please comment on your ability to hear door bells: telephone rings, and music before and after the operation?
11. Will you also please add any other comments on the reverse side you believe might be help to others contemplating the operation?  
.....  
.....  
.....  
.....

questionnaire which we have tried to make as simple and as brief possible, you have a unique opportunity to help yourself and others who may be contemplating the operation.

300,000 and draining a district of 1,000,000. In the remaining teaching hospitals a modest Unit as at The Royal National Throat, Nose and Ear Hospital, Gray's Inn Road London Fig. 6 but the accommodation including sound proof rooms should be only on the ground floor.

Deaf committee of the Union Ministry of Education has sent round a questionnaire asking for the number of fenestration done in India and with what results. I suggest that the questionnaire should also be sent to the operated people by the Deaf Committee or the Association of Otolaryngologists of India, provided Government gave a research grant to one Doctor at a State Hospital to collect data and evaluate them. The questionnaire sent by the Research Laboratory Central Institute for Deaf, St. Louis, MU (U.S.A.) under contract No. 272 with the U. S. Navy Office of Naval research in 1948 was prepared and evaluated by Messrs. S. R. Silverman, W. R. Thurlow, T. E. Walsh (Who had then fenestrated 161 Cases) and H. Davis and published in the Laryngoscope Vol. 58, No. 7, P. 607-631. July 1948 is as follows:—

Dear

We are collecting information about fenestration operation from former patients in order to assess our results thus far. This information is essential to supplement the results of the objective tests which you had at McMillan Hospital at Central institute for the Deaf. We, therefore, earnestly solicit your co-operation in completing the enclosed.

#### QUESTIONNAIRE FOR FENESTRATED PATIENTS.

Name : \_\_\_\_\_ Date \_\_\_\_\_  
 Address : \_\_\_\_\_ Tel. No. \_\_\_\_\_  
 Operated by Dr : \_\_\_\_\_  
 Hospital or Nursing Home : \_\_\_\_\_

Directly below are listed various degrees of ability to understand speech. Notice the numbers opposite the description :

- (1) = "Understand perfectly".
- (2) = "Understand with slight difficulty".
- (3) = "Understand with considerable difficulty".
- (4) = "Hear but cannot understand".
- (5) = "Hear nothing at all".

Since our statistician is waiting for the information, we would appreciate an early reply. If you encounter any difficulty in completing the questionnaire, please do not hesitate to seek our assistance by mail or telephone.

A stamped addressed envelope is enclosed for your reply.

Please be assured that all information will be treated in the strictest confidence.

We appreciate your co-operation.

Sincerely yours,

This brings us to the use of the modern electric hearing aids, which I had dealt with in my presidential address at Calcutta, (Dec. 1951), which can be referred in the Indian Journal of Otolaryngology March 1952. These aids which were costing about Rs. 575/- for air condition in 1951 and now Rs. 360/- could be brought down to Rs. 150/- as suggested by me to the Union Finance Minister on 21—9—'52 and to the Union Education Minister and his Deaf Committee on 6—10—52. The chief reasons given are that they are a necessity and not a luxury and that the customs duties and sales tax should be abolished or rebate given to those sets sold through the Audiology Centres or Units of our public hospitals.

These Electric hearing aids in my opinion have been unsatisfactory in our country on account of wide changes in temperature and humidity and want of proper servicing facilities. The first patient for whom I prescribed was D. S. J. in 1926 and the last as I was writing this paper in October '52. I do not think they give value for the money people spend, in 85% of the cases. In U.K. they found it not satisfactory in 50% of cases while in U.S.A. under 10%. What is the reason for variations? Want of Audiology Centres and Units. Therefore U.K. hospitals under the nationalized medical relief began to create centre and units at a great number of hospitals. It is very hard to get funds for running our departments. Some years back the Honourable home Minister of Bombay (Shri Morarji Desai) referred a clerk who appealed on his dismissal to him. I was asked to examine him and submit a report. As a corollary of the report I once more requested for a puretone audiometer, which was granted from special hospital charity funds, for my department at the J. J. Hospital Bombay.

An almost universal complaint of seasoned users of hearing aids is that understanding of speech through the instruments is often limited and obfuscated although perception of sound as such seems adequate. Many workers in the past have enunciated and implemented the principle of teaching through auditory stimulation, not only partially deaf but also profoundly deaf children to achieve differentiation of elements of speech understanding of words and connected spoken language, depending on the degree and character of hearing loss. It is also noticed that cerebral re-orientation to speech, transmitted through a hearing aid can be improved by systematic acoustic training. S. Richard Silverman found that six out of seven subjects show appreciable gains in understanding of speech as a result of such training programme.

The seasoned workers in the matter of rehabilitation of the acoustically handicapped have found that during the first three years of life the child is able to discriminate and learn various sounds. Therefore, the child, who is born congenitally deaf will hardly talk at all. The child who is partially deaf will speak as he hears, though the consonants will be missing and the tone defective. Now if the child during the first three to four years of life even though he has learnt to speak, becomes deaf from pathological conditions, one finds rapid deterioration and he becomes totally deaf and loses speech in a year's time. This is not so with adventitious deaf adults, who lose normal tone of speech but never all the speech.

Edith Whetnall, who has had a great experience in the rehabilitation of the deaf, since U.K. supplied free Medrisco hearing aids to its deaf population. She says "when listening becomes strain and causes fatigue, rehabilitation is required". She is of the view that the education of the deaf child should start at the age of eighteen months with a trained teacher in a nursery school. Thence he should go to a special partially deaf units in hearing schools. Whereas the totally deaf children should go to a school of their own, for the educational methods of the three types of schools are different.

Colleagues, it is not only your responsibility to classify the three different types of deafness but to take pains to advise the right line of treatment and rehabilitate them with appliances, and advise them on matters of education both in children and adults. Be co-operative with a social worker and help her to get the maximum from deaf and the half of hearing people.

I represented you on the international committee held at London in 1949. This year Dr. S. Roy, M.P. (President) is unable to serve on such a Committee of the international Society of Otolaryngology, whose meetings will be held at the time of the fifth international congress at Amsterdam in June 1953. From the list of the members who had paid one hundred dutch florains (Rs. 131) the membership fees to the congress, the president proposed that Dr. C. A. Amesur of Bombay and Prof. : C. Satyanarayana of Madras serve on such a Committee, at the last meeting of the Governing Body and carried unanimously. We are grateful to you for this confidence in us, I request that more delegates should come, as one of the combined sessions is on audiology; and a special course in English is being held from 1st to 13th June 1953. I am pleased to know that some members from Bombay, Calcutta and Madras have already sent their subscriptions, Please be quick and apply. More details are published in the Indian Journal of Otolaryngology June 1952 issue.

I have come to the conclusions that there is a great need for audiology centres, units, deaf clubs and sending more delegates to the International Congress. The Governing Body will place before you some resolutions for discussion and adoption at the business session to be held on 3rd day of the Conference.

I am very grateful to Dr. Moe Bergman (U.S.A.) for not only giving me his valuable publication for use but also offering us his co-operation in 1953 if and when the audiology centres or units are created. I am also grateful to Prof. : A. W. G. Eving (U.K.) who is willing to welcome if we wish to send a representative to study the work at Manchester, where the salaries are, from £ 500 p. a. (for juniors) upwards. I have passed on these very kind offers to the Union Government Ministries concerned. I do hope they will accept them with gratitude and thanks.

Government of India, Ministry of Education in their letter, No. F. 1-51-52-G. 2, dated 24th November 1952, say "It is likely that the members of the Expert Committee on Deafness will discuss at length the problems of deafness and treatment of ear diseases, but the recommendations of the Committee, when finally approved by the Government of India will be sent to the Ministry of Health for implementation".

Among the very many colleagues who have given help and whose papers I have incorporated (see references) special mention should be made of Messrs. G. Hoffer (Graz-Austria) J. W.

Jackson (Nebraska U. S. A.), C. O. Nylen (Uppsala Sweden), C. Rojskjaer (Denmark), R. S. Silverman (Washington), C. P. Wilson (London), and John H. Young (London). I hope to be excused if by oversight any reference is omitted.

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Read at the fifth annual conference of the Association of Otolaryngologists of India held at Patna on 22nd December 1952.

The following is the text of the resolution moved from the Chair and passed unanimously at the Fifth Annual General Meeting of The Association of Otolaryngologists of India, held at Patna on 24th December 1952, under the Chairmanship of Dr. C. A. Amesur.

"Resolved that this meeting thanks the Union Ministry of Education for appointing an Expert Committee on Deafness and requests the Union Government to give due recognition to this Association and consult it on all matter concerning the ear, nose, throat and allied problems and further requests that (a) exemption be granted from custom duties and sales tax on artificial hearing aids and their accessories; (b) audiology clinics be opened at important centres of the country; (c) arrangements be made for free distribution of vitamin "A" to all children and the expectant mothers in deserving cases; (d) help be given to social workers interested in the deaf and (e) arrangements be made for propaganda by lectures, radio, cinema shows etc., regarding the prevention and cure of deafness."

## Brain Abscess

BY

B. RAMAMURTHI, M.S., F.R.C.S.E.

'Life is short and the Art is long  
The occasion instant  
Experiment perilous  
And Decision difficult'

—HIPPOCRATES.

When one is face to face with patients suffering from abscess of the brain, the above aphorism of Hippocrates seems specially applicable. So much depends upon a correct decision and a proper approach to the infection. Of all lesions involving the brain, none requires more judgment and experience in its management than an abscess. That an abscess exists may be difficult of proof. Often when its presence is certain, correct localisation cannot be made. When localised, a correct decision as to the proper time or method of evacuation taxes all the surgeon's skill.

With the advent of antibiotics and recent methods in neurological diagnosis and treatment, the outlook in cases of brain abscess has changed for the better. Otogenic abscess form the major part of brain abscesses. Co-operation between the neurosurgical and oto-rhino-laryngology teams helps in reducing the mortality and morbidity from these abscesses. Because of the paucity of well developed neurosurgical teams in our country, the E.N.T. surgeon has been forced to deal with all the otogenic abscesses in the best way he could. In this paper it is aimed to show how a Neurosurgical team's help can conduce to better treatment of these conditions.

Abscess of the Brain is not an uncommon condition and calls for care and skill in its diagnosis and treatment. The peculiarities of this condition are that it is situated inside the cranial cavity which is an unexpanding chamber and hence the resultant pressure on the brain may be very high and relief from this

pressure is often urgently called for. In addition, the brain responds to an infection by an oedema which adds to the urgency of the problem and also quite often tends to confuse the clinical picture. The interference with the functions of the brain and nearness to the vital centres are other factors adding to the difficulties.

Infection reaches the brain through various channels. Direct infection occurs with penetrating injuries, compound depressed fractures, etc. These are more frequent during war time. Infection may also reach the brain from distant centres. Any focus of infection like boils, carbuncles, etc., may cause a Brain Abscess. Brain abscesses also occur during the course of a pyaemic infection. A frequent site for the initial focus is a thoracic infection. Thoracic abscesses of the brain are more often diagnosed now that more interest centres round thoracic infections.

But the commonest cause is spread for neighbouring foci and this will be the chief concern of this paper.

Septic foci in the ear or in the nasal sinuses and frequent sources and infection from here spreads into the cranial cavity by either contiguity of tissues or by venous channels or by performed pathways, e.g., the sheath of the auditory nerve.

The Bacteriology of these abscesses varies and it is found that the clinical picture is not dependant on the type of organism except in gas forming organisms where the process is very acute.

The abscess—which is a localised collection of pus—starts as a diffuse inflammation surrounding a focus where bacteria have deposited themselves, i.e., the process starts as an encephalitis and then goes on to form a regular abscess cavity. Because of the nearness of the subarachnoid spaces, quite often a picture of meningitis is superadded. Brain abscess may follow what was initially a meningitis. This fact calls for a frequent and proper neurologic examination of patients who have had meningitis following ear or nose infections.

Frontal abscesses arise from empyema of frontal or ethmoid sinuses. (Refer case report). Otogenic abscesses are frequent and these form either in the temporo sphenoidal lobe or in the cerebellum. Of these, temporo sphenoidal abscesses are the most common.

Diagnosis of these abscesses is sometimes easy and often difficult. During the course of a chronic middle ear disease or mastoiditis, the patient begins to complain of headache and the temperature may rise and run an irregular course. The headaches are intermittent and increased by stooping or coughing and are intermittent and increased by stopping or coughing and are often associated with vomiting. Under these conditions an intracranial infective process must be suspected and the case must be carefully examined.

Examination of the Optic Discs by the ophthalmoscope is essential and must be done in all suspected cases of brain abscess. Congestion of discs with oedema indicates raised intracranial pressure of a space occupying lesion. But the absence of papilloedema does not negative the diagnosis of brain abscess.

A neurological examination is then made to determine whether an abscess exists and if so, where. 'IN TEMPOROSPHENOIDAL ABSCESSSES' (on the left side) difficulty in speaking may be present. 'Word amnesia' or pseudophasia is of special importance. The patient finds it difficult to correlate ideas of objects with the names of objects.

Examination of the 'fields of vision' by a confrontation test is then made. This is often very useful. In temporal abscesses a homonymous hemianopia of the opposite side is sometimes observed and is due to involvement of fibres of optic radiation.

With these signs a diagnosis must be made. 'Contralateral hemiplegia must not be waited for'. When a brain abscess is not diagnosed until it had led to hemiplegia, the prognosis is grave. Ocular palsies may occur, but may have no localising significance.

In 'Cerebellar abscesses', head retraction is often present and the head-ache is more severe and persistent. Examination of eye movements often shows 'nystagmus'. Diagnosis of a cerebellar abscess would seldom be justified in the continuous absence of this important sign. Examination of limbs shows a weakness with hypotonia. In addition, there is in-co-ordination as shown by the finger nose test.

In the early stages, diagnosis between a cerebral abscess and meningitis may be difficult. Here comes the question of Lumbar Puncture. It is not often realised that a lumbar puncture is a

dangerous procedure when the intra cranial tension is raised. It must be avoided if the diagnosis is fairly clear. If there is doubt in diagnosis and lumbar puncture is considered necessary, it must be done carefully and with the use of a manometer. Not more than 2 or 3 c.c. of CSF must be removed. This is sent for a pathological and bacteriological examination.

Lumbar Punctures, repeated if necessary, may have a place in certain types of brain abscesses, postoperatively. But as a pre-operative measure it is better avoided and if essential must be done with the utmost care.

**Treatment.**—The principle of treatment in brain abscess is to treat the infection by antibiotics which give a wonderful chance of recovery and to wait till the abscess is localised. Then the idea is to drain abscess by aspiration or by a tube and later excise it if necessary.

The treatment of a cerebral abscess calls for the utmost co-operation between the otologist and the neurosurgeon. It is not a question of whose prerogative it is, but it is a matter to be decided by the clinical condition of the patient.

It will be in the best interest of the patient if the neurological surgeon is summoned to see the patient as soon as intra cranial complications are suspected and the responsibility of treatment shared. This is necessary not only for early diagnosis, but because the treatment of brain abscess is a prolonged affair and requires effective watchfulness and an awareness of further extension of the abscess.

If the patient is drowsy and has definite localising signs, operation leading directly to the abscess is indicated to save the patient's life. The ear condition is better dealt with after a day or two.

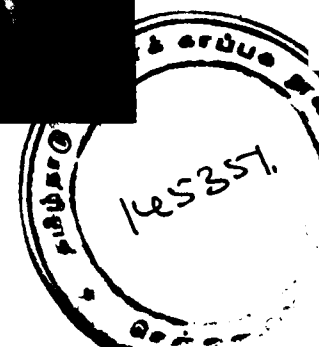
If the patient is conscious and not in extremis, the ear is treated first and the neighbourhood inspected for abscess. The otologist has been accustomed especially in our country with few or no neurosurgical facilities, to drain these abscesses from below, through the ear or mastoid. If on treating the ear, pus is not found in the immediate neighbourhood, a better plan would be to pack the wound with flavine gauze and attack the abscess directly either in the cerebellum or in the temporal lobe.



Fig. 2.



Fig. 1.



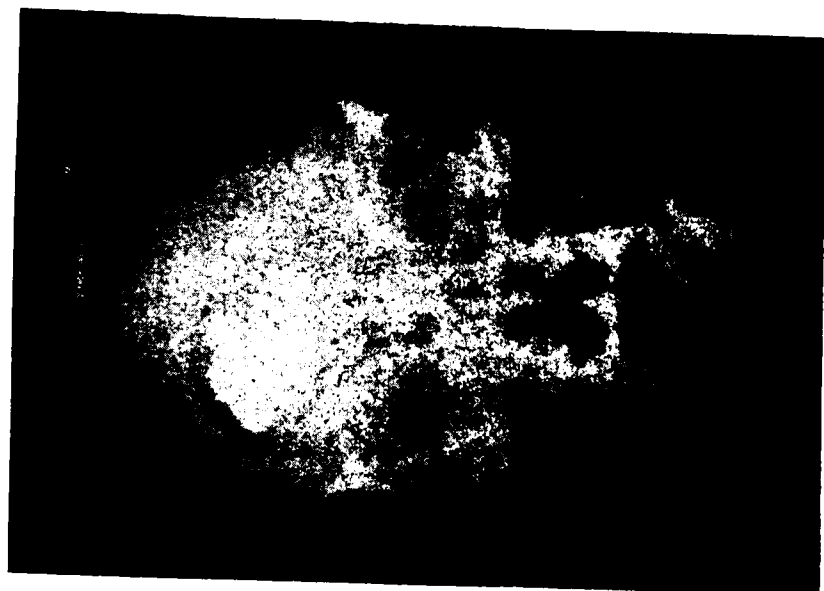


Fig. 4.



Fig. 3.

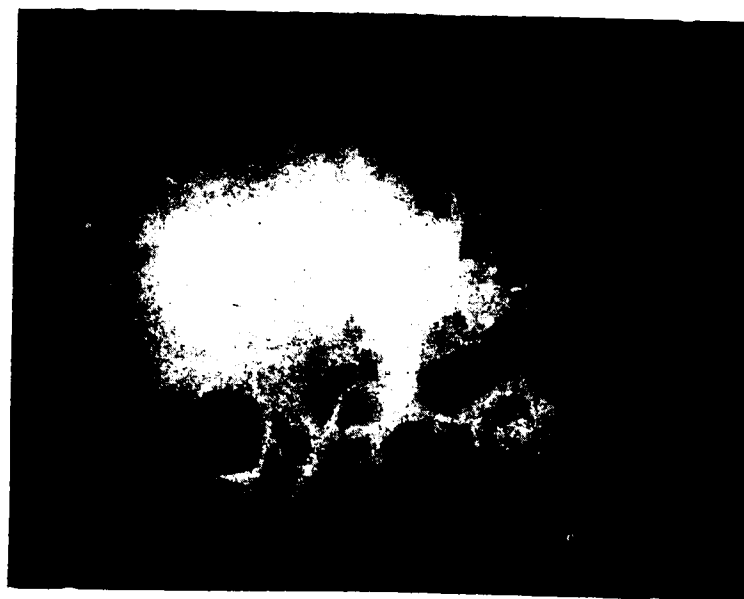


Fig. 6.

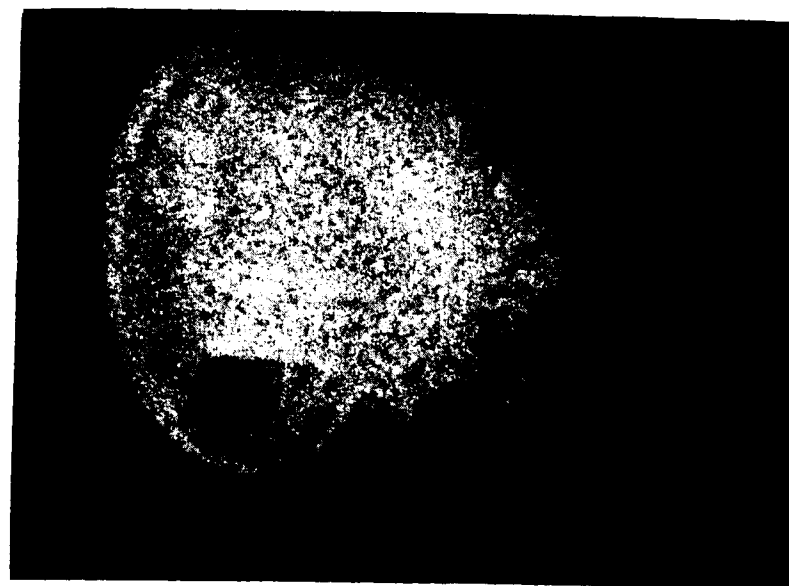


Fig. 5.

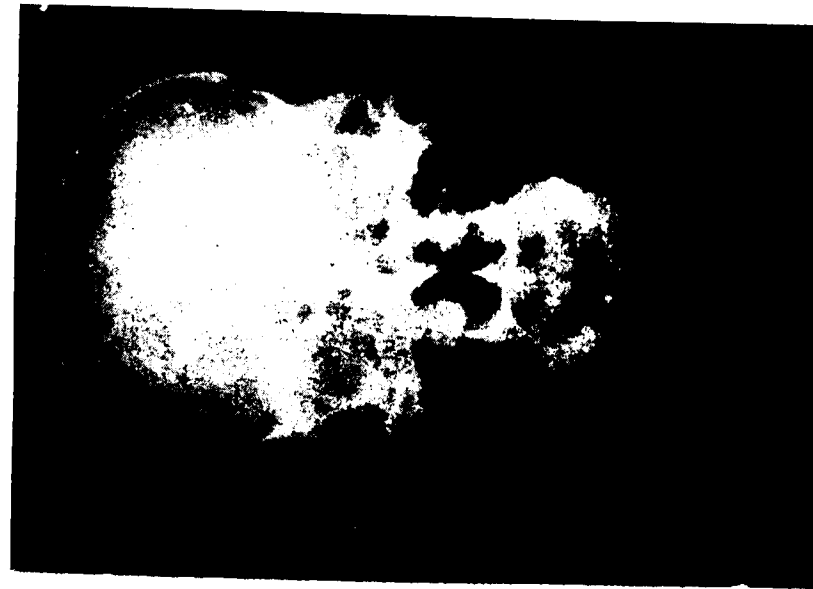


Fig. 8.



Fig. 7.

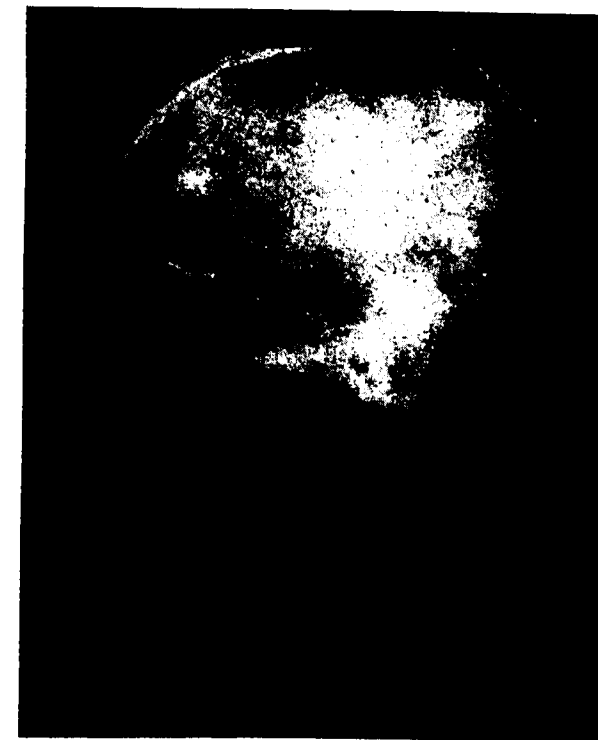


Fig. 9.

A burr hole is made in the skull over the abscess. The dura is coagulated by diathermy and a blunt pointed brain needle inserted and the abscess wall felt and then entered. The pus is aspirated. In a comatose patient this procedure itself will restore consciousness. Cases are known where life has been saved by such aspiration which was done under artificial respiration, after the patient has stopped breathing.

Penicillin is instilled into the abscess cavity. Later repeated aspirations may be necessary depending on the condition of the patient.

Constant watch over these patients is essential for some days to set them on the road to recovery. Occasionally, a tube may have to be inserted into the abscess to obtain drainage for a few days. Through the tube, penicillin can be instilled.

Radio opaque solution like diodone is put into the abscess cavity and repeated X-rays will show how the abscess is healing. (Ref. Case Report) If the abscess persists in not healing after 4 or 6 weeks, it can be excised en masse. In doubtful or difficult chronic cases, Ventriculography may be needed to establish a correct localization.

Some times, in cerebellar abscesses, in addition to aspiration, a decompression may be indicated.

To summarise, the principles of treatment in brain abscess are repeated aspiration, sometimes combined with a drainage or decompression, instillation of penicillin into the abscess and instillation of diodone for radiographic control. If the abscess does not heal by these methods, it must be excised when it is chronic.

By the adoption of the above principles of treatment, by the administration of antibiotics and by greater co-operation between the otologist and the neurosurgeon, the mortality and morbidity from brain abscess has been greatly reduced recently.

#### CASE REPORT.

Frontal Sinusitis with extra cranial abscess—Incised—Later Coma—Aspiration of Intra Cranial Abscess—Recovery—Repeated drowsiness—Drainage with Radiographic control—Recovery.

'R', Male, age 25, gave a history of having had frontal headaches followed by swelling of the left frontal region. This swelling was treated on the surgical side with penicillin, and an abscess was incised. The patient improved and was discharged home. He was re-admitted into the Neuro Surgical Unit 3 weeks later with a complaint of headache and drowsiness. The relatives said that he was incoherent and behaved in a peculiar manner.

On examination, he answered simple questions. He had no papilloedema. There was a right external Rectus Paralysis. There were no other signs. Total W.B.C.—7,000, X-ray of the skull—No abnormality. He was treated with Penicillin injections.

Four days later, gradually got drowsy and could not be roused. There was early papilloedema.

Because of the history of earlier swelling in the left frontal region and because of the mental sign, a burr hole was made in the left frontal region under local anaesthesia. The dura was diathermised. The Brain needle encountered an abscess in the left frontal region, from which 40 c.c. of thick pus was aspirated. The patient recovered consciousness on the table. A narrow tube was inserted into the abscess cavity for drainage. (See Fig. 1 and 2). Penicillin 2,000 units was instilled in to the cavity. The pus culture showed *Staphylococcus Aureus*.

Air put into the abscess cavity showed the size of the abscess in the X-ray (Fig. 3).

The condition of the patient improved. Four days later, the tube was removed. But as the patient again got drowsy, repeated aspirations were made. Pyelocil 35 per cent was instilled into the abscess cavity and X-rays taken to see the extent of the abscess (See Fig. 4, 5 and 6). A drainage tube was inserted again and the abscess drained. By such repeated aspirations and drainage, and by control skiagrams (Fig. 7) the abscess cavity got reduced in size and became chronic. The latest picture showed the cavity to be of a very small size (Fig. 8 and 9). He is now awaiting excision of the abscess.

The above case shows the value of pyograms in determining the extent of the abscess and the need for repeated aspirations.

#### SUMMARY.

The problem of brain abscess is discussed. The role of the neuro-surgeon and the otorhinolaryngologist and the necessity for co-operation between the two in the interests of the patient is stressed. A case report is presented to show the value of contrast studies in the treatment of brain abscess.

## Congenital Atresia of the Oesophagus

BY

Dr. N. R. AMSESUR, (Formerly Resident)

*The Mount Sinai Hospital, New-York.*

Congenital anomalies of the Oesophagus are by no means rare as was formerly thought to be. With early diagnosis and operative treatment many lives have been saved, which before 1941 were thought to be hopeless as the mortality rate was 100%.

**Embriology:**—The pharynx, oesophagus, stomach, larynx, trachea, bronchi and the lungs are developed from the foregut. To the third week of embryonic life, the oesophagus and trachea are a single structure. Between the third and fourth week, a groove appears, in the floor of the primitive foregut. It deepens and the margins fuse to form a septum between the oesophagus and trachea. Separation of the oesophagus and trachea takes place last at the bifurcation of the trachea,—a point where most of the oesophageal deformities occur. Fusion of the septum is normally completed between the fifth and sixth week of intra-Uterine life.

If the lower end of the ridges lie in an oblique position their fusion will result in the upper part of the oesophagus being cut off to form a blind sac, at the same time the lower part of the oesophagus will be left in communication with the trachea.

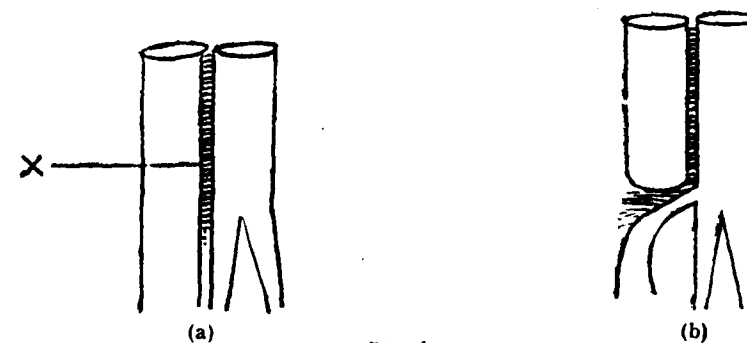


Fig. 1

(a) Fusion of the longitudinal ridges (x) at the sixth week of intra-uterine life.

(b) Fusion has occurred in an oblique manner with the result that the upper part of oesophagus forms a blind sac and the lower part communicates with the trachea.

**Historical Note:**—This condition was first described in 1697 by Gibson, grandson of Oliver Cromwell and Physician General to the Army. It took nearly 250 years before the first successful attack could be made to cure this condition.

In 1884, Mackenzie collected records of 43 cases. In 1910 Sir Arthur Keith found 14 examples of congenital atresia of the oesophagus in the Museums of London and gave an accurate description of what we now know to be the most usual type.

**Classification:**—Vogt in 1929 gave the following classification.

**Type I:**—Complete absence of the oesophagus.

**Type II:**—Atresia of the oesophagus with an upper and lower oesophageal segments, each ending in a blind pouch.

**Type III:**—Atresia of the oesophagus with tracheo-oesophageal fistula.

- (a) With fistula between upper segment and trachea.
- (b) With fistula between lower segment and trachea.
- (c) With fistula between both segments and trachea.

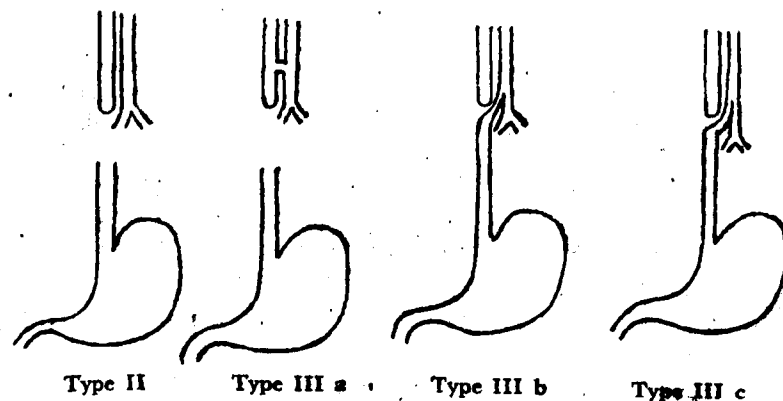


Fig. 2

Diagram illustrating various types (Vogt's classification) of Oesophageal atresia.

The most common variety is type III (b) of Vogt's classification. Roughly 80 per cent of all cases belong to this type. The upper segment ends blindly at about the level of the vena azygos arch. It is dilated and hypertrophied. The lower segment shows more variations; it springs from the back of the trachea usually within 1 cm. of the bifurcation or from the bifurcation. It is always thin-walled and usually about half the calibre of the upper segment.

**Symptoms:**—The symptoms of congenital atresia of the oesophagus are noted soon after birth. The infant is seen to have an excess of saliva in the mouth with a resulting choking and usually some cyanosis. When fed, there is an immediate regurgitation with aspiration of fluid into the air passages and an increase in the choking and cyanosis. Examinations of the chest often reveals rales in the lungs.

**'Confirmation of Diagnosis':**—Roentengenologic examination is of great aid in diagnosis under fluoroscopy; a small soft rubber catheter is passed down the oesophagus as far as it will go. If an obstruction is met about 10-12 cm. from the alveolar margin, it is practically diagnostic of atresia. A small amount not more than 2 c.c., of iodized oil is instilled into the catheter and will clearly outline the upper oesophageal pouch. Barium should never be used for this purpose because of dangers of aspiration into the tracheo-bronchial tree. The roentengen examination should include the abdomen, for the presence of air in the stomach or intestine, is indicative of a communication between the lower oesophageal segment and trachea.

**Preoperative treatment:**—The extent of preoperative treatment depends upon the general condition of the patient and the pneumonic complications that have already occurred. If the lungs are clear, the sooner operation is undertaken, the less likely is the chance of a pulmonary complication occurring to a degree sufficient to prevent operation.

Aspiration of secretions from the pharynx and the upper oesophagus by a small soft rubber catheter introduced into the pharynx should be done at frequent intervals in order to prevent the overflow of secretions into the trachea. Oxygen therapy and penicillin therapy should be started promptly; intravenous fluid therapy should also be started simultaneously.

**Evolution of the operative treatment :—**In 1888, Steele performed gastrostomy for this condition, but the attempts were unsuccessful because of the regurgitation into the lungs.

Brenneman in 1918 substituted jejunostomy for gastrostomy but in vain.

In 1913, Richter advocated transpleural ligation of the lower oesophagus together with gastrostomy but he failed as he made no provision for keeping the blind upper segment empty.

In 1926 Van Hacker advocated direct anastomosis by means of a Murphy button but without success.

Gradual realisation of the nature of the problem revealed that its' solution depended on (1) Keeping the blind upper segment empty; (2) Preventing regurgitation through the fistula into the trachea; and (3) Successful feeding of the infant.

All sorts of operations including cervical oesophagostomy various types of gastrostomy, transection of the stomach and ligation of fistula were attempted but results were extremely disappointing.

In 1936, Lanman attempted unsuccessfully primary anastomosis. It was not until 1941, when Haight and Townsley reported the first successful direct anastomosis which they carried out by the extrapleural route.

**Cameron Haight's Telescopic method of Anastomosis :—**The whole thickness of the lower segment is sutured to the mucus membrane of the upper segment allowing the muscle of the upper segment to surround the line of anastomosis like a cuff.

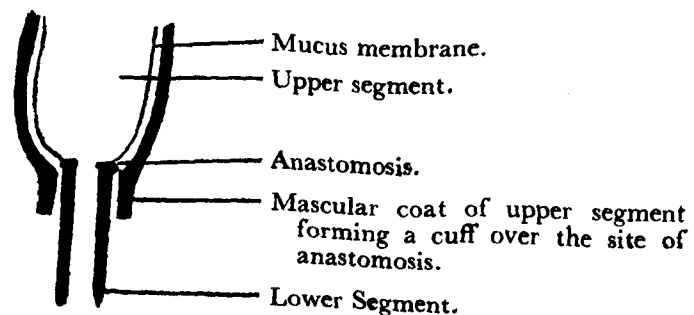


Fig. 3

# CASE REPORT

The first Mount Sinai Hospital admission of a 3 days old infant who was born three weeks prior to the expected date. Pregnancy was normal, but the child had some respiratory difficulty with excessive mucus and amniotic fluid in the nasopharynx and trachea. Following aspiration, it did well although rales were heard throughout the chest during the first twenty four hours. Penicillin was given Q 6 H for 24 hours and then 1,50,000 units B.I.D. On 2nd day 5 c.c. of glucose water is said to have been well tolerated. On the third day, milk feeding was attempted with immediate regurgitation. Dr. Fischer passed a soft rubber catheter and felt the oesophageal obstruction.

Physical examination on admission was essentially negative except for few basal rales. P-140 R-20 T-98.

X-Ray examination revealed atresia of the oesophagus with tracheo-oesophageal fistula as in Fig. 4 (X-Ray plate).

The child was operated by Dr. E. E. Arnheim on the same evening. Through a subperiosteal resection of the fourth right rib and extrapleural approach, the tracheo-oesophageal fistula was ligated and primary anastomosis performed under open ether anaesthesia. A drainage tube was inserted through the fifth right intercostal space.

The child was placed in an oxygen tent, intravenous fluid therapy was begun. Penicillin and dihydrostreptomycin were continued. Nothing was given by mouth.

On the 3rd post-operative day, a soft No. 10 rubber catheter was passed with ease. There was no leak through the anastomotic site. A polyethylene tube was passed. Fluid were given through the tube.

On the 10th post-operative day, X-ray examination with iodised oil revealed a leak at anastomotic site; as in X-Ray plate Fig. 5. Conservative treatment was continued. The polyethylene tube was passed under fluoroscopy into the stomach. Child was given feeds through the polyethylene tube. Penicillin was continued. X-Rays, 3 weeks after operation revealed the stenosis at the site of anastomosis but the fistula had healed as in X-Ray plate Fig. 6. Since then the child has been doing well.

I am grateful to Dr. E. E. Arnheim for allowing me to report this case with the above mentioned X-Ray plates in Fig. 4, 5 and 6.

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Read at the Fifth Annual Conference of The Association of Otolaryngologists of India held at Patna on 22nd December 1952.



Fig. 4.



Fig. 5.



Fig. 6.

**Accounts of the Journal of the Association of Otolaryngologists of India**  
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| S. B. Account with Canara Banking Corporation Ltd., as on 1-10-'51... | 3,698 0 3        | „ Establishment Charges                                               | 240 0 0          |
| „ Central Office Contribution                                         | 500 0 0          | „ Contingencies                                                       | 58 6 0           |
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|                                                                       |                  | „ Closing Balance—                                                    |                  |
|                                                                       |                  | On S. B. Account with Canara Banking Corporation Ltd., as on 30-9-'52 | 4,305 6 0        |
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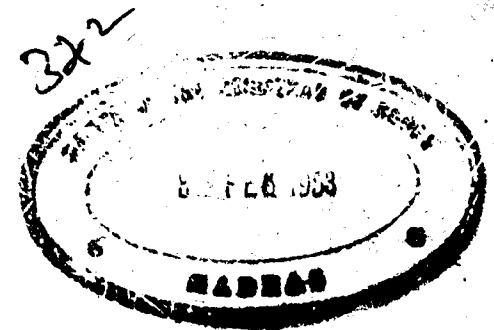
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# Indian Journal of OTOLARYNGOLOGY



Vol. IV, No. 3  
September 1952

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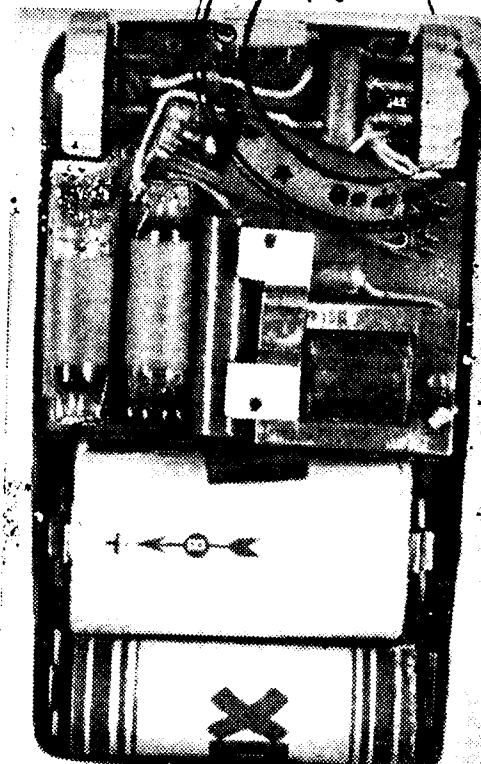
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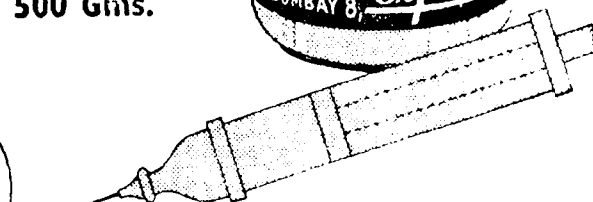


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## Indian Journal of Otolaryngology

Official organ of

THE ASSOCIATION OF OTOLARYNGOLOGISTS OF INDIA

Vol. IV

SEPTEMBER 1952

No. 3

### \*Congenital Malformations of the External Ear

BY

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

Congenital malformations of the external ear are said to be uncommon. Keeler of the department of Otolaryngology, Jefferson Hospital, Philadelphia stated that amongst 16,696 new patients, seen during a period of 13 years, only twelve showed auricular malformations. At the King George Hospital, Visakhapatnam, amongst 75,000 out-patients of the E.N.T. department, during a period of 19 years, there were only 10 cases on record. Perhaps they are not so rare as would appear from these figures. For, many more with such defects might never have presented themselves at the hospital, and if presented, they might have escaped attention or failed to be recorded.

The malformations described in text books present a great variety of forms ranging from a plurality of the auricle to its entire absence. Between these two extremes, they may be of any conceivable form, size and position. The 10 cases cited above, as recorded at the King George Hospital, showed the following deformities:—

- |                                                    |      |   |
|----------------------------------------------------|------|---|
| (i) Congenital fistula auris or cyst               | .... | 4 |
| (ii) Flattened outstanding upper part of the pinna | .... | 1 |
| (iii) Complete absence of the external ear         | .... | 3 |
| (iv) Partial absence of the external ear           | .... | 2 |

The large variety of defects of the external ear is explicable because of its complicated development. The most important factors in producing such malformations are, according to

\*Read at the First Conference of Oto-Laryngologists auspices of the Andhra Branch of the Association of Oto-Laryngologists of India, on 26-5-52.

Keeler, faulty closure of the two upper bronchial clefts, arrest of the unrolling process of the auricle during its development, and splitting or diversion of the original formation.

The five cases of partial or complete absence of the auricle in this series showed also absence of the external auditory canal which is in agreement with the statements of several authors. This is due to their common branchiogenic development. The labyrinth is said to be normal as a rule.

Amongst other developmental associated malformations mentioned by the authorities, one case was found to be mentally defective. The deficiency was of such a degree that could not be put down to be psychogenic in character. She also showed a partial facial hemiatrophy. In one child were noticed a slight homo-lateral facial paresis, and weakness of the opposite leg muscles. In two cases, where there was complete absence of the external ear, the tonsil was found absent in its fossa on the same side, perhaps a point of some significance from the developmental aspect. There was no record of alcoholism in parents in any of these cases; nor a history of any serious illness of the mother during the period of gestation.

**Treatment:**—Treatment of deformities of the external ear assume importance in actual practice from two stand points, namely:

- (i) Presence of deafness, partial or complete.
- (ii) The cosmetic defect may be so conspicuous as to constitute a severe social handicap and yet the hearing may be normal.

1. If the deformity involves the internal ear as well, intervention is likely to be of no avail. Radiography and functional tests have been found to be helpful in determining the condition of the auditory apparatus. The presence of a middle ear cavity in these cases can be demonstrated by catheter inflation through the Eustachian tube, and the taking of a radiograph with the bougie in place. While inflating, entry of air into the middle ear cavity may be elicited by placing the bell of an ordinary stethoscope over the tragal region. This is said to have been done first by Beck.

In congenital deformities of the external ear, associated with a non-functioning labyrinth, there was no evidence of mastoid cells and the internal auditory meatus was not patent.

This finding suggested the need, as pointed out by Beck, for further investigation of pneumatisation of the mastoid bone in connection with the function of hearing.

2. More important is the consideration of the defect arising from the cosmetic point of view. The parents are often in great distress. As the child grows up, he develops an inferiority complex himself. He avoids freely mixing up in society, which stands as an obstacle to his usefulness in life.

Plastic surgery offers a great field here for the otolaryngologist for the exercise of his talents. Reconstruction of the nasal pyramid offers even a greater variety, and more frequent opportunities for him to apply himself as a plastic surgeon. It is up to the young otolaryngologist to specialise and make himself proficient in this branch of surgery. This becomes all the more important, when the very existence of Oto-laryngology as a major speciality is said to be threatened by the advent of chemotherapy and antibiotics. It is to point out this aspect that I have thought of showing these pictures to-day and not that there was anything done by myself to ameliorate the lot of these patients in life.

#### CONGENITAL FISTULA AURIS (Fig. 1).

Preauricular congenital fistula at the anterior border of the ascending limb of the helix in a female. This is the most common position. (Marginal helicine).

Of the three other cases in this series, one was noticed to be a cyst, three were in the female sex and one in a male. All were unilateral. In no case was there any other associated abnormality. Family history was negative for such defects in all the cases and hearing was good.

Ewing refers to the two main theories for the causation of this anomaly.

1. That it has its origin in the faulty union of the six tubercles round the posterior end of the first bronchial cleft which fuse to form the external ear.

2. That the condition is derived from the first bronchial cleft.

The controversy is still unsettled amongst the students of embryology.

**PROJECTING AURICLE (Fig. 2).**

Projecting auricle or lop ear, showing abnormal flattening and protrusion of the upper part of the pinna; unilateral and left sided in a boy aged 12 years.

Bilateral defects of this character are more common than unilateral.

There is a redundancy of the entire cartilaginous plate from the margins of the cartilaginous meatus upward and backward to the helix. Therefore the cartilage is enlarged, and curled outward or forward. There is occasionally an obliteration of the normal bend or fold of the antihelix, unilateral or bilateral. This increases the deformity by throwing the auricle still further forward and downward. This picture shows this aggravated condition.

It was curious to notice in this case that the left tonsil was considerably more hypertrophied than the right, a point perhaps of no particular significance.

Complete absence of the right external ear in a baby; female. (Fig. 3).

There is only a small dimple corresponding to the spot of the external auditory meatus.

**RIGHT AND LEFT (Fig. 4 & 5).**

Absence of right ear. Male child, 3 years of age.

The right ear was represented only by a small nodule. The left ear was well developed with good hearing. Speech was normal. Child was fairly well nourished.

The tonsil was absent from its fossa on the right side. There was slight facial paresis and marked weakness of the left leg muscles.

Radiography showed absence of the right bony external meatus.

Absence of left external ear; girl aged 14 years. (Fig. 6).

She was poorly developed with slight facial asymmetry. Speech defective. Intelligence poor.

Left tonsil was completely absent from its fossa. At its base there was a small lymphoid mass perched on the dorsum of the tongue. There was no other congenital abnormality.

Radiograph of the mastoid regions right and left, of the patient shown in Fig. 6 (Fig. 7).



[ 1 ]



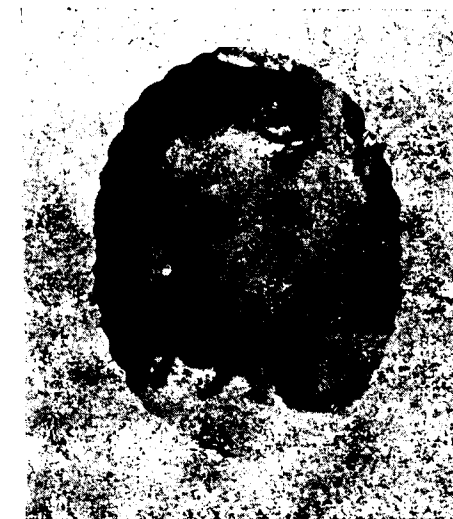
[ 2 ]



[ 3 ]



[ 4 ]

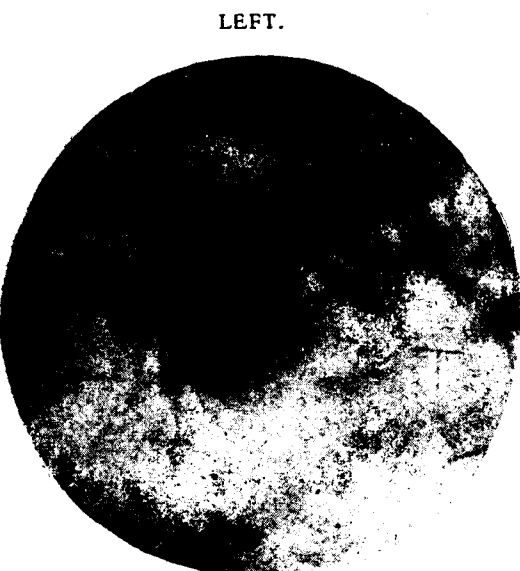




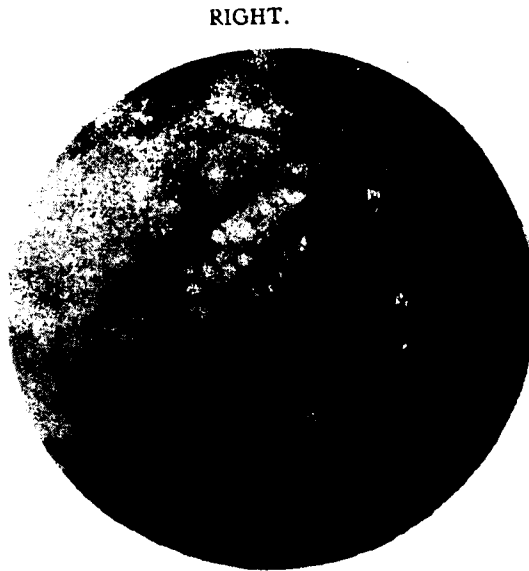
[ 7 ]



[ 8 ]



LEFT.



RIGHT.

[ 9 ]

# CONGENITAL MALFORMATIONS OF THE EXTERNAL EAR 109

It shows the presence of the bony external meatus on both sides. But mastoid cells were well developed on the right side but not so on the left.

The atresia of the external auditory canal is usually bony but may be only membranous or cartilaginous. In case of bony atresia, there is usually a malformation of the middle ear also. The malleus and incus are present as a rule but are frequently fused together or show other changes. The stapes and eustachian tube are usually normal.

Rudimentary development of the left auricle (microtia) with absence of the external auditory canal. Male aged 16 years. (Fig. 8).

Microtia occurs more frequently in males, and more often on the right side. Unilateral cases are more common than bilateral.

Radiograph showing both mastoid regions in a male aged 45 years with left sided microtia and mastoid abscess admitted in the year 1943. (Fig. 9).

The left auricle showed a similar appearance as Fig. 8.

The illness started with pain in the left ear, after a severe nasal cold, with fever, and development of a swelling behind the ear. Duration 1½ months. There was sugar and acetone in the urine.

Radiograph showed good cellular development in both mastoid regions. But the cells in the left side were cloudy and their outlines destroyed.

A mastoidectomy was done under gas and oxygen. Antrum was found and the bridge removed. A small slit like tympanum was identified. No malleus or incus were found. Postoperatively, the patient was put on sulphonamides. He developed signs of labyrinthine disturbance which took a fortnight to subside. He was discharged cured 6 weeks after admission with the mastoid wound completely healed up.

This case is of particular clinical interest. In spite of the rudimentary formation of the external ear, and atresia of the external auditory meatus, there was extensive cellular development of the mastoid bone symmetrical with the other side. The middle ear cavity was found to be a small slit which transmitted infection to the mastoid antrum and cells. The labyrinth apparently was normally developed.

one sees granulating red spots on the palate. The pillars become thick and short and the tonsils seem to be buried between two pillars almost like submerged head under water. Etiology of this condition is a matter of guess. Examination—blood for routine blood count, Kahn tests throw no light as to the cause of the disease. Gastic analysis examination stool for amoebic infection have not been helpful. Section from the fibrotic pillars only show fibrosis process under the microscope. We have not been successful in getting any growth from smear of the granulating spots and we are still in the dark as to the etiology of this condition.

As we can see of the 41 cases as many as 31 fall between ages of 20 and 40 and it affects both sexes almost equally.

**Treatment:**—Treatment have been very unsatisfactory. Attempts were made to cut the bands under anaesthesia and to open the jaw forcibly; this only gave if at all a temporary relief and fibrosis resulted with vengeance. The only treatment which we find gives some relief is a course or two of injections of arseno typhoid (Calcutta chemical research lab.) and large doses of iodides internally. With these injections, the first change noted is that the patient is able to eat pungent food stuffs which he was unable to do before for years and the discomfort in opening the jaw gets less. Besides we put them on vitamins (multi) and acid hydrochlor mixture.

The disease is prevailing throughout our country and seems to be specific to our country. Patients come from all parts of India—right from north to the south and from east to the west.

It is our plan—study these cases in greater detail—to investigate the etiology of this distressing condition also to see if we can find out any remedy for it's cure.

I am sure many of you have come across such a condition and I shall be glad to have your views on the subject.

#### DISCUSSION

**Dr. S. Roy (Calcutta):**—About 30—35 cases have been seen in a period of 25 years. Various examinations have been done but the results are all negative. Intestinal parasites were thought to be responsible. There too we were not successful.

I am inclined to think that they are the result of A—vitaminosis esp.—Vit. B. complex. Therapeutically, Fibrobysis, Muscle extract injections and mechanical dilatation were tried but without much success.

**Dr. B. K. Sengupta (Calcutta):**—We have seen several cases as described by Dr. Joshi. Previously we did not exactly know how to treat this condition and years ago we treated these cases with muscle extracts with no result.

Recently we had three cases. Sections were taken for Pathological examination and culture. In all cases the pathological lesions were as described by Dr. Joshi—just fibrous tissue and Collagen. In one case only we could get Frietsch, Bacillus. One view is that there is a variety of Scleroma and in one case there were associated scleroderma.

These cases came up for inability to open their mouth. These three cases were treated with Inj. of Streptomycin  $\frac{1}{2}$  gm. B.D. about on average 40 gms. were given with very good result, particularly in one.

I would therefore, request Dr. Joshi and others to look for these and try streptomycin and persin.

**Dr. C. A. Amesur (Bombay):**—The first case I saw was at Karachi in 1929 for which I tried fibrolyoin injections. This was the only case during 1929—33 there. At Bombay (1933—51) I had 14 cases in 18 years, one of them I had shown at our local branches clinical meeting. In eight of these cases the diagnosis was confirmed by biopsy. So far both medicinal and surgical treatment has failed us. From the discussion I find that it is not uncommon at Calcutta. During 14 years at London I had not seen a single case there. I suggest that research be carried on this subject at Bombay, Calcutta and Madras.

## Selection of cases for Fenestration

BY

Dr. V. S. SUBRAMANIAN (Madras).

Fenestration is an elective operative procedure indicated in "Suitable Clinical Otosclerosis"; with bony ankylosis of Stapedial footplate to Oval window and with No Nerve Degeneration.

Clinical Otosclerosis forms the major part of Conductive Deafnesses and is characterised by its progressive nature. This progressive loss of hearing in Otosclerosis is not a smooth progress, but is characterised by considerable variations in rate of progress, from person to person, and also at different periods in the same individual. These variations in the rate of progress probably indicate the periods of quiescence or activity in the growth of the pathological otosclerotic focus. There is definite familial tendency for otosclerosis, but cases without family history may be explained by the fact that there may be members in the family with otosclerosis in the bony capsule, but not involving the region of the Oval window. About 60 to 70% of cases with clinical Otosclerosis give positive family history.

The onset of deafness in Otosclerosis is insidious and is often first noticed during adolescence. In very rare cases it may be noticed in childhood or in late life as in the 3rd or 4th decade of life.

Women are affected twice as often as men (2:1 ratio). Pregnancy and lactation worsen the hearing loss.

In about 40 to 50% of cases of Otosclerosis there is a certain degree of degeneration in the Nerve of hearing, and as such, proper and careful selection of cases for Fenestration is rather difficult and needs great care and judgment.

Routine examination and diagnosis of Otosclerosis is done as follows:—

### I. Taking the history from the patient:—

(a) Onset of deafness—usually from adolescence—1st in one ear;

(b) Presence of Tinnitus—present in 90% of cases;

(c) History of discharge from ears and Middle Ear Disease. Usually no such history of discharge; but some might have had co-existing Mid Ear Disease with T. and A. in childhood;

(d) Progressive nature—is important in cases of Otosclerosis, whereas it is stationery or shows slight improvement even in other forms of Conductive Deafness;

(e) Paracusis Willisii i.e., whether the patient hears better in noisy places—this type of paracusis when present, is almost pathognomonic of Otosclerosis;

(f) Family history—is obtainable in 60 to 70% of cases of Otosclerosis, and when available, is a point in favour of diagnosis;

(g) Previous history of illness—is important, as small-pox, measles, mumps, malaria, typhoid, and meningitis may all individually cause deafness of the perceptive type—history of large doses of Quinine also helps in the cause of nerve deafness;

(h) Lastly the treatment that the patient had taken before coming to this Doctor is helpful—usually history of tonsil operation, nasal cautery etc., are given by the patient.

II. After the history has been taken, the patient is taken to the examination chair, and the routine examination of (i) throat, (ii) nose and sinuses, and (iii) ears, are carried out. The ear-drums are carefully examined for any perforation or healed perforation, translucency or opacity, normal mobility or not etc.

In a suitable case of otosclerosis, we expect entire translucent ear drums, thinner than usual and with normal mobility.

III. Next, we do the usual Tuning Fork tests for identifying the conductive type of deafness. We do the Weber, Rinne, Schwabach's etc. We also exclude the other 5 types of conduction deafness like—

(a) Occlusion of External Auditory Meatus by wax or exostosis;

(b) Perforation of Tympanic membrane due to Mid Ear Disease;

(c) Suppurative Otitis Media by presence of discharge of pus ;

(d) Secretory Otitis Media due to blocking of Eustachian tube, with resulting negative pressure in Mid ear and transudate in Mid ear ; and

(e) Adhesive Otitis Media due to previous acute Suppurative Otitis Media and resulting fibrotic scar tissue formation and distortion of normal appearance of ear drum. But this form is differentially diagnosed from Otosclerosis by its not being progressive and by not producing much impairment in hearing.

IV. After examining the Ear Drum and testing with Tuning fork and after ruling out the other 5 forms of Conductive Deafness, Audiometry examination is done for the level of hearing present in each ear.

The Audiogram is done for (a) Air Conduction, (b) Bone conduction, and (c) Bone Conduction with masking.

The interpretation of Audiogram is very important and occasionally very difficult too.

Based on Audiogram, the cases are divided into 3 classes, viz.

- (a) Ideally suitable for Operation ;
- (b) Suitable, but not quite the ideal type ; and
- (c) Cases with limited or guarded prognosis.

(a) Ideally Suitable Cases are—

- i. Rinne is negative for 512 & 1024 ;
- ii. Schwabach's is normal or prolonged for the 3 speech frequencies 512, 1024 & 2048 ;
- iii. Audiogram shows a 40 to 60 db. loss for air conduction in the 3 speech frequencies ; and
- iv. The Bone Conduction Audiogram is above 30 db. level ; (example-Fig. 1).

(b) Suitable but not Ideal Cases—same as (i) except that the bone conduction for 2048 is slightly below 30 db. (ii) Schwabach's is slightly or moderately shortened for 2048-(Fig. 2).

(c) Cases with limited and guarded prognosis—

- i. Rinne is negative only for 512 and not for 1024 ;
- ii. Schwabach is slightly shortened for 2 or 3 speech frequencies ;
- iii. Audiogram shows profound air loss of 70 to 90 db. for the 3 speech frequencies ;
- iv. Bone Conduction is below db for 2 or all 3 speech frequencies ; and (v) Ordinary spoken voice is not heard even at 1 ft. distance. (Fig. 3).

Finally, in selecting patients for Fenestration Surgery, we must remember other factors like—

- (1) Age below 20 is not very suitable as the chance for bony closure are greater in these cases ;
- (2) Emotionally unstable and psycho somatic cases are unsuitable ;
- (3) Very advanced age as above 60 years, is not recommended for the operation as such patient can carry on the rest of their retired life without such major operation ;
- (4) Very High Blood Pressure and Diabetic Cases are not very good for the operation ; they are better off with Electric Hearing aids.

The Careful selection of cases for operation is as essential in obtaining good results as is the skilful performance of the operation itself.

Lastly, I would like to mention the Shanbaugh & Cohart Formula for evaluating the post-operative hearing level. It is as follows :—

| 512 db.         | 1024 db. | 2048 db. |
|-----------------|----------|----------|
| If 22           | 15       | 40       |
| Subtract        |          |          |
| 5               | 10       | 15       |
| Then it will be |          |          |
| 17              | 5        | & 25     |

Add 25 to each, and you get 42, 30 & 50 which is the Post operative level by air. In other words the average post operative level by air conduction on the operated ear will be 40 db. level.

## Incidence of Cancer of Larynx in Assam

By

Dr. S. N. SARMA, F.R.C.S.E., D.L.O.,

Assam Medical College Dibrugarh (Assam).

In a paper read at the Second All-Assam Medical Conference of the Indian Medical Association held at Jorhat on the 26th and 27th October, 1950 and a paper published in the Journal of the Indian Medical Association Vol. XX, Number XI, August; 1951, pp. 412-414, I have tried to draw the attention of the profession towards the high incidence of the Carcinoma of the Larynx in this State. The numbers were 15 from October to December 1948; 57 in 1949 and in 1950 upto 11th October, there were 42 laryngeal and 11 Oesophageal cancer and the greatest number of malignant cases were found in the E. N. T. Department.

It was noted that a rough calculation brings laryngeal carcinoma to 40% in the Assam Medical College Hospital of all cancers.

Now after another year, adding the figures upto-date the position is still revealing.

The following is the analysis of the Cancer cases met in the whole hospital from 1948 October to 1951 December 15th:—

Total cases .... 351— This is distributed as follows:—

|                   |      |      |
|-------------------|------|------|
| (1) Larynx        | .... | 186  |
| (2) Oesophagus    | .... | 34   |
| (3) Uterus        | .... | 29   |
| (4) Tongue        | .... | 17   |
| (5) Penis         | .... | 12   |
| (6) Tonsil        | .... | 10   |
| (7) Stomach       | .... | 10   |
| (8) Breast        | .... | 9    |
| (9) Palate        | .... | 7    |
| (10) Cheek & Lips | .... | 6    |
| (11) Rectum       | .... | 6    |
| (12) Colon        | .... | 3    |
| Others            | .... | Rest |

This puts the figure in this Hospital nearly 50% for the Larynx.

Thompson and Negus in their book on the diseases of the Nose and Throat says— "Malignant tumours of the larynx are fortunately less frequent than Cancer in many other reasons and constitute about 2% of all cancers".

In the "recent advances in 'Oto-Laryngology'" by Scots Stevenson is mentioned— "cancer of the larynx is much less frequent than cancer of the stomach or uterus....."

But the above analysis of the Assam Medical College Hospital shows 186 larynx against 29 uterus and 10 stomach and forms 50% of all cancers instead of 2%. However one cannot dogmatise yet as the time is not long enough.

Another aspect also strikes one as important—that is authorities like Negus met only 187 cases of laryngeal carcinoma in 20 years and Semon only 212 cases in 28 years—whereas here in little over 3 years 186 cases have been met.

Here it would be worthwhile to indicate what cases have been included as laryngeal carcinoma:—

Extrinsic Carcinoma—those arising from above the false vocal cord, i.e. epiglottitis, aryepiglottic folds, both walls of pyriformfossa.

Intrinsic—those from below the false vocal cord and from the true vocal cord.

Subglottic—those below the true vocal cord.

Intrinsic is usually said to be more, but here all are extrinsic except 2 and no subglottic met so far.

Age incidence is also interesting to note—maximum number of cases are below 50 years in the age group 40 and 50 and a good number have been found between 20 and 30 years.

Excepting a few almost all these cases have been confirmed by Biopsy and cytological examination.

Most unfortunately, all the cases came in too advanced stages, when neither Surgery nor Radiotherapy held out much hope. Many valuable months and days have been wasted by using gargles and paints and penicillin by the general practitioners, for failure to recognise the lesion early or even suspect them.

This point needs being stressed, as the G. P. forms the first line of defence in any fight against this disease and they must be trained well to recognise this condition early enough.

As the National Advisory Cancer Council of U. S. A. points out "unfortunately, physicians just leaving medical schools are inadequately prepared for their role in the fight against cancer. The medical students acquire a disproportionate idea of the possibilities of treatment and are usually most impressed by the failure or by the incurability of some forms of cancer.

The training in cancer which the G.P. should have, must be given either in his medical schools or through channels easily accessible after he begins his practice. This Physician is in the most favourable position to help in the control - for he will be best equipped to discover cancer in early stage".

Under the circumstances, it is most unfortunate to note that the speciality of E.N.T., where there is such a high number of cancer, is being given very little importance for the M.B.B.S., Course and in the new scheme of Indian Medical Council, it is allotted only 15 days for training the boys and a very minor status.

The 15 days' training would hardly equip any G.P. to recognise cancer of the larynx, etc.

I, therefore, appeal to the Indian Medical Council who is building up the career of the future graduates to take these facts into consideration and give the speciality of E.N.T. its due position. I appeal to you also to raise the status of our speciality in the Universities.

For the control of this disease following line is suggested under broad headings:—

(1) Education of the public and make them cancer conscious.

(2) Education of the G.P. (General Practitioner)—to enable them to detect the cases early.

(3) Education of the undergraduates adequately to enable them to detect these cancer of the larynx, etc. early and give them a bias for it.

(4) Sufficient research and treatment centres with full facilities.

Here I beg to point out, that I am not in possession of figures about the other States of India. I hope our colleagues will kindly enlighten us.

I take the opportunity of thanking the Principal of my College for kindly allowing me to utilise these figures.

## ABSTRACTS

### BRONCHOSCOPIC REMOVAL OF A FOREIGN BODY WITH THE AID OF TRIANGULATION ROENTGENOSCOPY.

By A. A. DORENBUSCH, W. E. ROBERTS.

(A. O. R. L. 61: 83-89 March 52).

The authors emphasize the importance of triangulation roentgenoscopy in the removal of foreign bodies beyond the view of bronchoscopes. In this method two images are produced on the single fluoroscopic screen at all times; the foreign body is located at a glance in two planes. The authors have used this method for last fifteen years.

Extraction of ferromagnetic bodies from the segmental subdivisions of the bronchial tree is greatly facilitated. A case report illustrates this point.

S. S. DOUNDE.

### THE AURAL APPROACH TO THE PAROTID GLAND.

By F. L. WEILLIE.

(A. O. R. L. 61: 90-95 March 52.)

A simple, adequate and safe approach to the parotid gland is described. This approach is most suitable for the otolaryngological surgeon who is familiar with this region. Even extensively radical surgery needing exploration right up to the base of the skull is quite safe by this technique. The facial nerve and the internal jugular vein are out of the way. The posterior belly of the digastric, the styloid process, the transverse process of the atlas and the external jugular vein are important guides during the operation.

The incision extends from behind the ear near the tip of the mastoid to the greater cornu of the hyoid bone; this is joined by another incision commencing in front of the tragus curving backward exposing the perichondrium of the external auditory canal and then joining the postauricular incision. The external carotid artery can be ligated if desired.

The author presents an illustrative case of a woman aged 76 years old.

S. S. DOUNDE.

## AURAL MANIFESTATIONS OF ALLERGY.

By E. L. DERLACKI.

(A. O. R. L. 61: 179-188 March 52).

There is lack of one accepted conclusive test to prove allergy. The finding of increased eosinophil cells in secretion or tissues is strongly presumptive but not conclusive. Skin tests are often misleading and disappointing. At present most reliable test is therapeutic but spontaneous remissions do occur.

External otitis which fails to respond to other types of treatment has often responded to antiallergic measures. Chronic otorrhea after mastoid operation or fenestration surgery with remissions and exacerbations may have an allergic basis.

Middle ear: Chronic suppurative otitis media with an odorless mucoid secretion coming from a large central perforation is very often due to a specific allergy. The secretion is viscous or gelatinous, the middle ear mucosa is thickened and pale. Secretory otitis media has an allergic basis.

Inner ear: Few cases of labyrinthine hydrops respond to antiallergic measures.

S. S. DOUNDE.

## NASOPHARYNGEAL RADIUM TREATMENT.

By LOOH AND FISHER.

(A. O. R. L. 61: 198-205 March 52).

Nasopharyngeal treatment of benign, hyper-plastic but infected lymphoid tissue for the last twenty five years is reviewed. The dosage recommended by Drs. Crowe and Burnam is found to be adequate. No untoward reactions in follow up studies were detected from three to twenty nine years after the treatment.

S. S. DOUNDE.

## The Association of Otolaryngologists of India

3 Amarchand Mansion,  
Mayo Road, Fort, Bombay - 1.

The Fifth Annual Conference will be held on 22nd, 23rd, and 24th December 1952, at Patna, and will be graciously opened by His Excellency the Governor of Bihar.

Please let the Local Secretary and myself know at your earliest convenience:

1. (a) Whether you want us to make arrangements for your lodging and Boarding?
- (b) How many attending?
- (c) Coming by Air or Rail?
2. Are you reading a paper? or demonstrating something special? If so, the heading of the Title be sent now and a copy of the manuscript to me by 25th November 1952.

As I.M.A. Conference will follow on 26th December 1952, those of our members who are I.M.A. members can get railway concession single Fare return journey.

Members are requested to inform me immediately what papers they promise to read or wish to read at our Fifth Annual Conference to be held at Patna on 22nd December 1952. H.E. the Governor of Bihar will open the same.

The Local Secretary Prof. P. N. Sinha, P. W. Medical College (E. N. T. Deptt.) Patna (Bihar) would like to know how many of you are coming, including members of family, whether vegetarian or not. Dr. P. N. Sinha will send you the authority slip for railway concession in any class (single fare for return journey) Please communicate with him on this subject now for details.

It will hurt me to remove your name from the Members' Register, if you have not paid your current year's subscription, inspite of our Four reminders this year, by the end of September 1952.

L. H. HIRANANDANI,  
Hon. Secretary.

INDIAN JOURNAL OF OTOLARYNGOLOGY  
FIFTH ANNUAL CONFERENCE AT PATNA  
from 22nd December 1952.

Office Bearers of the Reception Committee.

|                     |     |                                                                                                                            |
|---------------------|-----|----------------------------------------------------------------------------------------------------------------------------|
| Chairman            | ... | Prof. D. Ram                                                                                                               |
| Vice-Chairman       | ... | Prof. P. N. Sinha                                                                                                          |
| Hon. Gen. Secretary | ... | Dr. A. K. Sinha                                                                                                            |
| Treasurer           | ... | Dr. A. K. Guha                                                                                                             |
| Joint Secretaries   | ... | Dr. B. N. Jha<br>Dr. K. D. N. Agrawal                                                                                      |
| Members             | ... | Dr R. H. Sinha<br>Prof. T. B. Gupta<br>Dr. S. M. Mohsin<br>Dr. Samodar Prasad<br>Dr. R. N. Sinha<br>Dr. Mukteshwar Prasad. |

Though delegation fees at Bombay in 1947 was nil, yet in subsequent four years it has been rupees ten only. At Patna the Reception Committee has fixed at Rupees five only. But in addition there will be a subscription dinner at Rs. 7-8-0 per head. Those willing please inform at the desk at the time of the registration.

You are requested to stay on and join the All-India Medical Conference on 26th December 1952.

P. N. SINHA,  
Local Secretary, at Patna.

PROVISIONAL PROGRAMME

Fifth Annual Conference to be held at Patna.

|                |     |                                                                                                                                                                                           |
|----------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 21st Dec. 1952 | ... | Meeting of the Governing Body at the residence of Dr. Dukham Ram.                                                                                                                         |
| 22nd Dec. 1952 | ... | Registration of Delegates at the Medical College.                                                                                                                                         |
| Morning        | ... | Members' Photo:<br>Opening address by H. E. The Governor of Bihar.<br>Inauguration by Hon'ble Minister for Public Health, Bihar.<br>Presidential Address by Dr. Roy, M.P. Vote of thanks. |
| Afternoon      | ... | Scientific Session:<br>Atrophic Rhinitis Dr. R. V. Rao, A Calcutta Delegate.                                                                                                              |

DISCUSSION

|                        |     |                                   |
|------------------------|-----|-----------------------------------|
| Dacryocysto-Rhinostomy | ... | Dr. Dukham Ram.                   |
| Short Papers by        | ... | Dr. Tulsidas.<br>Dr. S. G. Joshi. |

PRESIDENTIAL RECEPTION

23rd Dec. 1952

|         |     |                                                                                           |
|---------|-----|-------------------------------------------------------------------------------------------|
| Morning | ... | Cancer Larynx ... Dr. L. H. Hiranandani.<br>Cancer of larynx in Assam... Dr. S. N. Sarma. |
|---------|-----|-------------------------------------------------------------------------------------------|

DISCUSSION

Short Papers by delegates from Calcutta, Delhi and Lucknow.

|           |     |                                                                                                                                              |
|-----------|-----|----------------------------------------------------------------------------------------------------------------------------------------------|
| Afternoon | ... | Rehabilitation of the Accoustically handicapped.<br>Dr. C. A. Amesur.<br>Short papers by Dr. C. Satyanarayana and delegates from Madras etc. |
|-----------|-----|----------------------------------------------------------------------------------------------------------------------------------------------|

24th Dec. 1952

|         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Morning | ... | General Body Meeting:<br>(1) Confirmation of the minutes of the Fourth (Calcutta) Session December, 1952.<br>(2) Hon. Secretary's report for 1952.<br>(3) Hon. Treasurer's report with audited accounts for October 1951, September 1952.<br>(4) Hon. Chairman of the Editorial Boards report, with audited Journal accounts for 1951-52.<br>(5) Amendments to the Articles, rules and regulations of the Association as per rule 27.<br>(6) Discussion on the Memorandum submitted to the All-India Medical Institute Advisory Committee of Sir Arcot Mudaliar.<br>(7) Discussion re. Expert Committee on Deafness of Dr. S. Roy, M.P.<br>(8) Resolutions submitted by the Governing Body.<br>(9) Resolutions submitted by the members if in due time.<br>(10) Election of Office Bearers for 1953.<br>(11) Election of the Editorial Board.<br>(12) Selection of the place and time of the Sixth Annual Meeting under rule 11 (c).<br>(13) Selection of the Local Secretary under rule 11 (d).<br>(14) Inviting Scientific papers for 1953, 1954 and 1955.<br>(15) Any other Business with the Permission of the Chair.<br>(16) The Meeting of the Newly Elected Governing Body under the newly elected President. |
|---------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|           |     |                                                            |
|-----------|-----|------------------------------------------------------------|
| Afternoon | ... | Visits to Hospitals.<br>Sight Seeing, excursion etc., etc. |
|-----------|-----|------------------------------------------------------------|

The proceedings of the Conference will be held at the Medical College Hospital, Patna.

Accommodation at Patna is difficult to be obtained at Christmas time. Therefore please communicate with Dr. P. N. Sinha, E. N. T. Surgeon, Dak Bungalow Road, Patna (Bihar); Re. the number of your family attending, type of accommodation needed, vegetarian or non: time of arrival by Air or Train and the day and time of arrival.

As the Government grants concession on railway travel (any class) for attending All-India Medical Conference please communicate with Dr. P. N. Sinha, who will send you the necessary authority slip if necessary.

### FIFTH INTERNATIONAL CONGRESS OF OTO—RHINO—LARYNGO—BRONCHO—ESOPHAGOLOGY

to be held at Amsterdam from 8th to 15th June 1953.

Combined Selected Sessions:

(a) Tumours of the Bronchus:—

Openers 1. Dr. Louis H. Clerf

2. Dr. A. Soulas et P. Mounierkuhn

3. Dr. L. Pietrantoni

(b) Audiology:—

Openers 1. Dr. C. S. Hallpike

2. Dr. George E. Shattbaugh

3. Dr. S. R. Silverman

(c) Allergy:—

Openers 1. Dr. G. Dohlman

2. Dr. Frénch H. Hansel

3. Dr. R. Melchior.

Twelve speakers will be allowed to speak for five minutes each, in each of the above sessions.

(d) Original Papers:—The speaker will be limited to fifteen minutes and the number of Papers will also be limited. Therefore, please send a typed copy of your paper early (Four pages of 500 words each) to the Secretary, so that the Dutch Committee informs you by 1st February, 1953, whether time in the programme has been allotted to you.

Subscription:—For delegates has been fixed at 100 Dutch Guilders and that for the Ladies and other relatives accompanying Members to 25 Dutch Guilders. This delegation fees may be transferred beforehand by your Bankers to the International Congress for O.R.L.B.E., 1953.

If you wish to attend and get further information please communicate with Dr. H. Struben, J. J. Viottastraat 1, Amsterdam (The Netherlands); by filling in the card he has sent you; as the Hon. Secretary had sent him your address in December, 1951.

