

ABSTRACTS

EAR

A Statistical Study of Incapacitating Hearing, Impairment in 1,000 Clinic Patients. MAURICE SALTZMAN and MARGUERITE C. EVERS DEN, Philadelphia. *Annals Otol., Rhin. and Laryng.*, 1949, lviii, 345.

This series covers all age groups.

1. An abnormality of the perceptive mechanism is the etiological factor in most cases of severe hearing impairment—66·2 per cent. The predominance of women over men in this otological entity is probably due to the greater longevity of the female. In the age group of 71 years and over, there were 125 women to 93 men.

2. Mixed deafness is slightly more prevalent in the female than the male, the ratio being 7·8 : 6·2.

3. Childhood deafness is most frequently of the perceptive type.

4. A conductive lesion, exclusive of otosclerosis, is seldom the cause of a severe hearing loss.

5. There is a lesser incidence of clinical otosclerosis in the male than in the female. The ratio is 1 : 3 in the white population. (Authors' summary.)

Acoustic and Vestibular Barometry: Air Pressure Effects on Hearing and Equilibrium of Unoperated and Fenestrated Ears. MARVIN F. JONES and F. C. EDMONDS JR., New York. *Annals Otol., Rhin. and Laryng.*, 1949, lviii, 323.

The effects on hearing and equilibrium produced by changes of air pressure exerted on the middle ear in a series of 32 unoperated and 8 fenestrated ears have been studied. A detailed description of the apparatus employed is given. The authors conclude that in order to obtain changes in hearing due to altered air pressure the presence of a functioning drum and ossicular chain is necessary. The effects of pressure changes on hearing by bone conduction are proportional to the magnitude of the decibel differential between air conduction and bone conduction at threshold. A difference of 30 decibels is critical and may indicate fixation of the stapes.

I. A. M. MACLEOD.

Fenestration Operation for Otosclerosis. GEORGE E. SHAMBAUGH, JR., Chicago. *Acta Oto-laryngologica*, 1949, *Supplementum* lxxix.

This paper of 100 pages is a very detailed description of the clinical and laboratory experiences of the otologists at North-Western University Hospital in Chicago. Two thousand one hundred cases have been operated upon during a ten-year period and the results of the operations are fully disclosed and discussed. The paper is fully illustrated in colour and black and white, and there are many tables. The results of operation are excellent, more than 80 per cent. of the cases receiving substantial benefit from their operations.

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Details of the operation are fully discussed and illustrated and the various difficulties are explained. Complications encountered have been enumerated and are discussed.

This monograph is a very frank and full survey of the fenestration operation as experienced by the author and his co-workers. It is an invaluable help and source of information to all otologists whether experienced in fenestration or not and a great credit to the department of otology from which it emanates.

G. H. BATEMAN.

Experiments on the Effect of the Circulation on Cochlear Potential in Anoxia.

H. BORNSCHEIN and F. KREJCI. *Monatsschrift für Ohrenheilkunde*, 1949, lxxxiii, 386.

An attempt is made to establish the relationship between the transitory, reversible disappearance of cochlear potential in anoxia and the state of the circulation. In experiments on 12 cats anaesthetized with pernocton, synchronous recordings were made of the cochlear potential in the right ear and the blood pressure in the left carotid. Intravenous injection of drugs affecting the circulation (acetylcholine, histamin, hypertonic glucose) in high doses resulted in only a slight diminution of cochlear potential (1.5 to 2.5 db.). This was preceded by a fall in blood pressure. In hypoxæmia the diminution of potential (13 to 15 db.) occurred before the relatively small fall in blood pressure (60 to 80 mm. Hg). Interference with the blood supply to the inner ear by compression of the aorta caused a potential loss. This was temporarily relieved by infusion with 30 c.cm. of arterial blood. A similar amount of blood poor in oxygen had no such effect. The authors conclude that cochlear potential loss is a primary effect of anoxia and not secondary to circulatory changes consequent to the anoxia.

D. BROWN KELLY.

Catarrhal and Allergic Diseases of the Ear. O. NOVOTNY. *Monatsschrift für Ohrenheilkunde*, 1949, lxxxiii, 339.

The causes, symptoms and treatment of tubal and middle-ear catarrh are discussed, and the various allergic manifestations in the ear described. The latter include catarrh, chronic suppurative otitis, and labyrinthine disorders. Experiments were carried out on 15 mice, which were sensitized with human serum, and brought to a state of anaphylactic shock by intraperitoneal re-injection 11 to 15 days later. Some of the animals died, the others were killed 1½ hours after the injection, and the temporal bones examined histologically. The findings were in agreement with those of Calicetis. There was marked hyperæmia of the tissues, especially the stria vascularis. Two cases showed bleeding in the perilymph spaces of the semicircular canals, the hæmorrhage extending into the vestibule. The sigmoid sinus was opened in another, and blood filled the retro-labyrinthine area. Marked contraction of the arteries was noted. Signs of considerable pressure were observed in the middle ear; these consisted of a funnel-like protrusion of the upper part of the drumhead, and a deep depression of the secondary membrane into the scala tympani of the cochlea.

The author maintains that these phenomena are due to the great rise of

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pressure in the thorax in anaphylactic shock, accompanied by congestion at the periphery and excessive pressure in the upper air passages, eustachian tube and middle ear. The article is illustrated with 4 microphotographs.

D. BROWN KELLY.

Dental Considerations in Fitting Hearing Aid Ear Inserts. JACK R. ANDERSON, WILLIAM MANION and AGNES C. COTA, New Orleans. *Archives of Otolaryngology*, 1949, 1, 659.

Although most hearing aid ear inserts are now individually fitted, insufficient consideration is given to the abnormal movement of the cartilaginous portion of the external auditory canal which may occur as a result of retraction of the mandibular condyles posteriorly. The principal cause of abnormal condylar movement and position is malocclusion, the presence of which is not difficult to determine. In the age group in which most hearing aid users are found the incidence of malocclusion is greatest. It is pointed out by the authors that if the hearing aid user is to get comfort and good acoustic seal with his ear insert, movements of the external auditory canal should be minimized. In 80 per cent. of the cases studied this would have required a restoration of normal centric occlusion. It is concluded that for the optimum fitting of hearing aid ear inserts co-operation of the otologist and the dentist is necessary in a large proportion of the cases.

R. B. LUMSDEN.

Problem of So-called Congenital Atresia of the Ear : Histological Report of a New Case. FRANZ ALTMANN, New York. *Archives of Otolaryngology*, 1949, 1, 759.

A histological examination of a congenital atresia of the left ear in a newborn girl with multiple malformations showed complete absence of the external auditory meatus, the drum membrane and the tympanic bone, malformation of the outer ossicles and an osseous bridge between the capitulum of the stapes and the facial canal. The resulting defect in the lateral wall of the tympanum was partially filled by an upward and forward extension of the upper end of the styloid, a downward extension of the squama and an upward extension from the floor of the middle ear. In addition, many other anomalies were present. Most of these malformations can be explained as the result of developmental disturbances of the derivatives of the posterior ends of the first and second branchial arches, of the adjacent structures and of the first branchial pouch and cleft.

Fifty-three sufficiently well described cases of congenital atresia have been reported so far. According to the severity of the malformations, they can be divided into three groups: those of a mild degree (15 cases), medium degree (28 cases), or severe degree (10 cases). The cause of the malformations remains undecided. A review of the more recent work on experimental mammalian teratology shows that not only genetic but also environmental factors acting on the developing embryo must be considered as possible causes. The chances for an improvement of hearing by operative intervention are doubtful, even in cases with an intact inner ear. This is due to the frequency of bony bridges

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between the stapes and the medial tympanic wall and to other minute deformities which might escape detection.

If an operation is decided on, a radical mastoidectomy with endaural approach and removal of the outer ossicles seems the method of choice. Skin grafts should be put into the cavity and kept in place by a mould. This will help to prevent post-operative stricture of the newly created opening. If the hearing is not improved after the operation, the possibility of fixation of the stapes should be considered. This could be circumvented by fenestration of the ampullated end of the lateral semicircular canal in a second stage operation. In the article there are 7 microphotographs and an extensive bibliography.

R. B. LUMSDEN.

Ménière's Syndrome: Observations on Vitamin Deficiency as the Causative Factor. II.—The Cochlear Disturbance. MILES ATKINSON, New York. *Archives of Otolaryngology*, 1949, 1, 564.

The first part of this communication was concerned with the acute phase of Ménière's syndrome—the vestibular disturbance or attacks of vertigo (Abstract: *Journ. Laryng. and Otol.*, 1949, lxiii, 417). This second part deals with the cochlear disturbance—the deafness and tinnitus—which persists between the acute attacks, or the chronic phase. Perceptive deafness is shown by the author to be the most common variety of hearing loss in this as in other series of cases; nevertheless, conductive deafness in some degree has been not unusual, occurring occasionally in pure form but more usually combined with perceptive deafness, a combination termed the mixed variety of deafness. Bilateral hearing loss, more pronounced on one side than on the other, has occurred in almost half the cases (43 per cent.). Bilateral tinnitus has been present much less frequently. Absence of bone conduction with retention of air conduction has been observed in an appreciable number of cases. Specific types of tinnitus have been found associated with the two varieties of hearing impairment, perceptive and conductive. Specific vitamin deficiencies have been found associated with specific types of deafness and tinnitus, niacin deficiency with the perceptive type, riboflavin deficiency with the conductive. The suggestion has been made on physiological grounds that the cochlea should be included with the external auditory apparatus as part of the anatomical mechanism of conductive deafness, an orientation which can explain the specific auditory effects of specific vitamin deficiencies. The results obtained as regards deafness and tinnitus when patients were treated with the appropriate vitamin fractions have been described and discussed.

R. B. LUMSDEN.

Acute Deafness in Scarlatina. HANS BRUNNER, Newark, N.J. *Archives of Otolaryngology*, 1949, 1, 589.

This article is dedicated to the memory of the late Professor E. Urbantschitsch of Vienna. The present case is reported to prove that acute deafness in scarlatina may be caused by common otitis media, that is, not acute necrotic otitis, plus diffuse serous labyrinthitis on both sides. The following are presented: (1) In serous labyrinthitis the exudate is carried away from the

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internal ear—at least to a great extent—by phagocytes. (2) In serous labyrinthitis resorption of inflammatory products takes place in the endolymphatic duct. (3) In scarlet fever serous labyrinthitis may occur without being caused by necrotic otitis media. (4) Acute deafness in scarlatina may be caused by bilateral otitis media *plus* bilateral diffuse serous labyrinthitis. (5) The serous labyrinthitis may be an induced labyrinthitis, i.e., labyrinthitis caused by the passage of toxins through the intact windows. (6) An induced serous labyrinthitis may cause deafness but may fail to produce spontaneous labyrinthine symptoms. (7) Serous labyrinthitis *per se* may cause not only transitory deafness but also permanent diminution of hearing. In the article there are 5 microphotographs and 16 references.

R. B. LUMSDEN.

NOSE

Fatal Air Embolism During Antral Irrigation. ELIZABETH CORNFIELD and ALEXANDER F. LASLO, New York. *Annals Otol., Rhin. and Laryng.*, 1949, lviii, 479.

The authors report a fatal case of air embolism occurring during diagnostic antral lavage. At the post-mortem examination the heart and inferior vena cava were distended and the escape of air was loudly audible on incising the heart. The authors condemn the common practice of inflating the antrum with air following lavage.

I. A. M. MACLEOD.

Tuberculosis of the Nose Treated with Streptomycin. CHARLES S. LANE, Boston, Mass. *Annals Otol., Rhin. and Laryng.*, 1949, lviii, 403.

A case of tuberculosis of the nose in a male patient aged 65 is reported. Tuberculous granulation tissue caused complete bilateral obstruction which previous local surgical measures had failed to improve. Chest X-ray at the commencement of treatment showed fibrosis and cavity formation. The patient received 1 gm. of streptomycin daily for 23 days, plus approximately a total of 1 gm. in the form of nose drops. On discharge from hospital nasal breathing had become established; streptomycin nose drops were used four times daily thereafter, and 24 weeks following his discharge from hospital very marked reduction in the amount of granulation tissue was noted.

The author does not state concisely what concentration of streptomycin was used in the nasal drops, nor is any further reference made to the pulmonary lesion beyond the initial X-ray report.

I. A. M. MACLEOD.

Transitional Cell Carcinoma of the Paranasal Sinuses. LEROY A. SCHALL, Boston, Mass. and DAVID W. BREWER, Syracuse, N.Y. *Annals Otol., Rhin. and Laryng.*, 1949, lviii, 381.

The management of five cases of carcinoma of the nasal sinuses from the Massachusetts Eye and Ear Infirmary is fully reported. Treatment was by means of X-ray therapy, supplemented when necessary by surgery for drainage, and chemotherapy and antibiotics to control superimposed infection. One case has survived for 5½ years without recurrence following its initial X-ray

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therapy. A second case died after 3½ years from repeated recurrences of the growth. The remaining three cases of shorter duration show no sign of recurrence to date.

I. A. M. MACLEOD.

Allergic and Catarrhal Diseases of the Nose and Throat. I. L. HÖRST. *Monatschrift für Ohrenheilkunde*, 1949, lxxxiii, 317.

This comprehensive paper deals fully with the various allergic manifestations encountered by the rhinologist. These comprise hay fever, vasomotor rhinitis, and polyp-forming, non-suppurative inflammation of the nose and accessory sinuses. An allergic origin should be suspected if there are other clinical manifestations of allergy, positive skin reactions, and eosinophils in the blood, nasal secretions, sinus mucosa or polypi. Bronchial asthma, allergic stomatitis and Quincke's oedema are also discussed.

As regards treatment, the cause, if possible, should be discovered and removed. In hay fever, specific desensitization is the method of choice. The preparation "Helison" is recommended, and a table of dosage is given. Reference is made to Urbach's method of oral administration of "Polysemin", "Polyfrumin" and "Polyflorin". The specific cause in vasomotor rhinitis may be difficult to find. Treatments recommended by various authors include X-ray radiation of the nose and spleen, intramucous injection of antiserum, and the antihistamin drugs. Operative removal of the polypi is not recommended, as they are the result, not the cause, of the complaint. The article is illustrated with 8 microphotographs.

D. BROWN KELLY.

Osteomas of the Paranasal Sinuses and their Treatment. JOSEPH W. BEGLEY, JR. and OLAV E. HALLBERG, Rochester, Minn. *Proceedings of Staff Meetings of the Mayo Clinic*, 1949, xxv, 13.

The authors present a series of 51 cases encountered at the Mayo Clinic since 1930, 36 of them males and 15 females, the average age being 37. The average duration of symptoms and signs was 3.7 years; of the 51 osteomas 29 were removed surgically and 22 were not disturbed, their course followed subsequently by skiagrams; 40 of the lesions were from the frontal sinuses, 9 from the ethmoid sinuses, 2 from the maxillary sinuses, and none from the sphenoid sinuses. In 27 cases of osteoma of the frontal sinuses the lesions had extended into neighbouring structures, most generally into the ethmoid sinuses on the same side. The most common symptom was frontal pain, and other symptoms were nasal discharge, nasal obstruction, and periorbital swelling. An important point at operation is preservation of the frontonasal duct.

R. SCOTT STEVENSON.

Osteoma of the Frontal Sinus. Col. A. J. VADALA and Lt.-Col. KENNETH SOMERS, Medical Corps, United States Army. *Archives of Otolaryngology*, 1949, 1, 618.

This is a useful summary of the subject, giving a review of the literature (24 references) and reports of 4 cases.

R. B. LUMSDEN.

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Hydrogen Ion Concentration of Nasal Secretion in situ in Newborn Infants.
NOAH D. FABRICANT and M. A. PERLSTEIN, Chicago. *Archives of Otolaryngology*, 1949, 1, 616.

In previous communications the authors reported that: (1) the pH of nasal secretion *in situ* in clinically normal nasal passages of infants and children was found to range within the levels of 5.0 to 6.7, indicating a slightly acid state of secretion; and that (2) during the act of crying and hyperventilating the establishment of an alkaline nasal pH was a dominant finding in infants and very young children. In the present investigation, an unusual opportunity to study the pH of nasal secretion *in situ* in a group of 13 newborn infants, ranging from 2 to 8 days in age, was provided. Of the 13 subjects under study, all but one newborn infant engaged in the act of crying and hyperventilating (table). The pH of nasal secretion *in situ* for this single non-crying exception was found to range from 6.00 to 6.25. For the 12 newborn infants who cried the pH of the nasal secretion was found to range from 6.7 to 7.2. R. B. LUMSDEN.

Intranasal Surgery of the Maxillary Sinus. HENRY M. GOODYEAR, Cincinnati. *Archives of Otolaryngology*, 1949, 1, 795.

The author reviews the subject and proceeds to show why many intranasal antrotomies fail and to stress in detail precisely each step required in a successful operation. R. B. LUMSDEN.

Plasma Cell Tumour Simulating Bilateral Maxillary Sinusitis. MOREY PARKES and SAMUEL BURTOFF, Washington, D.C. *Archives of Otolaryngology*, 1949, 1, 666.

The authors present a brief discussion of this subject along with a report of one case. R. B. LUMSDEN.

The Anterior Ethmoidal Nerve Syndrome: Referred Pain and Headache from the Lateral Nasal Wall. HOWARD H. BURNHAM, Toronto. *Archives of Otolaryngology*, 1949, 1, 640.

The anterior ethmoidal nerve syndrome is a name suggested for a series of symptoms resulting from irritation of the terminal branches of the anterior ethmoidal nerve. A case is described in which both anterior ethmoidal nerves were severed, with relief of the referred pain. An explanation for this anterior ethmoidal nerve syndrome is suggested, based on neuro-physiological discoveries, the theory of tissue metabolites proposed by Lewis and the demonstration of nerve fibre interaction. (Author's Summary.)

PHARYNX

Tonsillectomy as treatment of Acute Peritonsillitis, with Clinical and Statistical Observations. V. SEPPO VIRTANEN, Helsinki. *Acta Oto-laryngologica*, 1949, *Supplementum* lxxx.

This is a very long monograph of 172 pages in English. The author reviews 379 cases of peritonsillitis treated by abscess tonsillectomy. There must be some mystical significance in the number 379, for I have just read another monograph emanating from Helsinki in which 379 cases of corrosive burns of the œsophagus were reviewed. However, both are very long and valuable

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collections of clinical material. The author concludes that abscess tonsillectomy is the treatment of choice for peritonsillitis which requires any surgical treatment. His arguments are convincing and the reviewer needs no further convincing. The author finishes with two pages of conclusions with which the reviewer agrees with one exception. Local anæsthesia is preferred except in children, where it is stressed that the anæsthesia must be kept very light on the grounds of safety. This appears to the reviewer to be the very reverse of the truth and in his opinion general anæsthesia should always be used with a nasal endotracheal tube also on the grounds of safety. A light general anæsthetic would appear to be the most dangerous possible form of anæsthesia. A suction apparatus is also an essential piece of theatre apparatus for this treatment to be safe. This is an interesting monograph with a very long and complete bibliography and it should finally silence the critics of abscess tonsillectomy.

G. H. BATEMAN.

LARYNX

Tuberculous Laryngitis and Tracheo-bronchitis. JOHN J. O'KEEFE, Philadelphia. *Annals Otol., Rhin. and Laryng.*, 1949, lviii, 441.

Based on the experience of 27 cases of tuberculous laryngitis, the author recommends combined parenteral and aerosol administration of streptomycin. The optimum dose employed was 500 mg. of streptomycin intramuscularly twice daily, plus 50 mg. of streptomycin in 1 c.cm. of normal saline administered by nebulization every 2 hours, giving a total dose of 500 mg. per day.

I. A. M. MACLEOD.

ŒSOPHAGUS

Corrosion of Œsophagus and Stomach. U. K. KIVIRANTA, Helsinki. *Acta Oto-laryngologica*, 1949, *Supplementum* lxxxi.

This monograph of 112 pages in German consists of a review of the treatment and follow up of 379 cases of corrosive burns of the œsophagus and stomach. The majority of cases were children and the corrosive agent in most cases was lye. No adequate first-aid treatment is revealed. If corrosion, determined by œsophagoscopy, has taken place, treatment began during the first week carries a lower mortality, ensures a better end-result, and needs a shorter course of treatment than treatment begun later. If treatment began in the first week the mortality was about 6 per cent. ; if after two weeks, the mortality was 32 per cent. Treatment lasts from six months to one year. It is thus clear that the conditions of sale of lye should be such that accidental drinking of it by children shall be made difficult. A very complete bibliography is appended.

G. H. BATEMAN.

MISCELLANEOUS

Glossopharyngeal Neuralgia: Tic Douloureux of the Ninth Cranial Nerve. PETER N. PASTORE and JOHN M. MEREDITH, Richmond, Va. *Archives of Otolaryngology*, 1949, 1, 789.

This report deals briefly with the cases of 8 Caucasian patients with glossopharyngeal neuralgia. Glossopharyngeal (tic) neuralgia is a disabling disease which can be treated successfully by intracranial section of the glossopharyngeal nerve with no residual subjective symptoms.

R. B. LUMSDEN.