

ABSTRACTS

EAR

The Cochleogram and its Clinical Application: Concluding Observations. JULIUS LEMPERT, New York, PHILIP E. MELTZER, Boston, ERNEST GLEN WEVER and MERLE LAWRENCE, Princeton. *Archives of Otolaryngology*, 1950, li, 307.

The authors have concluded, after considerable efforts, that the recording of the cochlear potentials is not a practical clinical procedure. It can be done easily enough during a surgical operation, but then, of course, the clinical decisions have already been made. Without major surgical procedure—with only a drum incision—it is possible only in those rare instances in which the anatomical conditions are favourable, and then only with exercise of the utmost care and skill. A clinical method ought to be routinely applicable and reliable in results, and the authors have not been able to adapt the procedure to meet these conditions.

R. B. LUMSDEN.

Studies on the Histogenesis of the Ampullary Cupula. THURE VILSTRUP, Copenhagen. *Annals Otol., Rhin. and Laryngol.*, 1950, lix, 19.

The author has tried to show that the ampullary cupula is formed from the sensory epithelium of the crista as follows: From both layers of cells in the sensory epithelium long cytoplasmic columns are extended out into the lumen. These are seen to divide in the lumen and enter the formation of a syncytium-like network, corresponding to the findings in the earlier stages of embryogenesis reported by Szily and Studnicka. After intranuclear structural changes, nuclear mass migrates out into this network. The nuclear mass emigrates in the form of peg-like chromatin bodies without structure; when it has become free of the sensory epithelium, it resumes its roundish-oval form. In several specimens, the luminal globular chromatin bodies show chromatin structures. In this way the subcupular zone is formed, and it is encountered also in the cupulae of adult animals. This layer gives rise to the peripheral fibrillary cupular zone. The demonstrated intimate connection between the cupula and the sensory cells makes it possible to understand the cupular structure in adult animals and get a better idea of the mechanism in the response of the sensory epithelium to stimulation. (Author's summary.)

The Transmission Properties of the Middle Ear. E. G. WEVER and MERLE LAWRENCE, Princeton, N.J. *Annals Otol., Rhin. and Laryngol.*, 1950, lix, 5.

The basic function of the middle-ear mechanism is well known: it serves as a mechanical transformer, providing for the ready transfer of acoustic energy from the outside air to the fluid of the cochlea. Without such transformer action the vibratory motions of the air particles would not easily be communicated to the heavier particles of the cochlear fluid, but to a large extent

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would be reflected back from the boundary. When given the proper mechanical advantage which produces an increase in the pressure, the transfer of energy is made without loss. The authors have studied this action of the middle ear in the cat, a particularly favourable animal for this investigation, in which exact measurements of the ear's operation may be made in terms of the cochlear potentials. They have found that the middle-ear apparatus—or rather, that part of it peripheral to the stapes—fulfils its duties as a mechanical transformer with only slight disturbances of the response pattern. It presents to the stimulating sounds an impedance that varies remarkably little with frequency. It does this because it is a double-tuned and highly damped system. To the single stiffness and single mass that would have to be present for the structure to act as a mechanical transformer have been added a further stiffness and mass, with the result that we have a system resonant to two separated frequencies. At the same time, the action is subjected to considerable frictional damping, so that the resonances are very broad. The results show that the middle ear in the cat—and the possibility is suggested that other ears, including man's, have made adaptations of function that are as serviceable as those revealed in this animal—presents remarkably uniform properties to sounds over a wide range of frequencies, so that the middle ear is able to carry out its function as a mechanical transformer with minimum disturbance of the response pattern.

R. SCOTT STEVENSON.

On the Function of the Sacculæ. L. B. W. JONGKEES, Utrecht. *Acta Oto-Laryngologica*, 1950, xxxviii, 18.

The author reports the results of experiments upon rabbits which suggest that the destruction of one or two sacculæ does not alter the "normal" vestibular reactions. The animals sit and move normally, and thermal and rotating stimuli result in normal reactions. Reactions to linear accelerations directed from one ear to the other are diminished after destruction of the sacculæ. The sacculæ has a vestibular function and reacts to linear accelerations acting from one ear to the other.

R. SCOTT STEVENSON.

Inner Ear Deafness of Sudden Onset. J. R. LINDSAY and J. J. ZUIDEMA, Chicago. *Laryngoscope*, 1950, lx, 238.

The authors discuss a series of 16 cases of inner ear deafness of sudden onset which cannot be attributed to such well known causes as suppurative labyrinthitis, tumours, inner ear trauma or known toxic involvement. They are also clinically differentiated from Ménière's disease by the fact that they are characterized by one attack only, with permanent impairment of function, whereas in Ménière's disease there are recurring attacks of vertigo and fluctuating deafness and tinnitus. The first four cases reported represent types in which the ear complication was associated with a systemic disease: the first being apparently diffuse labyrinthitis secondary to middle-ear infection, the second probably a metastatic involvement of the ear during acute osteomyelitis, the third toxic in nature due to an exacerbation of a congenital syphilitic condition of the ear, and the fourth a toxic neuritis of the auditory neural apparatus associated with mumps. The next twelve cases were of uncertain aetiology, but the similarity of the clinical picture suggested that they were of

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the same type. A vasomotor disturbance affecting the inner ear has been suggested and although hypothetical must be given consideration. A toxic neuritis would provide a favourable explanation for these cases and must also be seriously entertained; the onset in two cases following an acute upper respiratory infection may give some support to this explanation.

R. SCOTT STEVENSON.

Treatment of External Otitis: a Simple and Effective Technique. IRVING L. OCHS, Annapolis. *Journal Amer. Med. Assoc.*, 1950, cxlii, 1361.

In the past ten years the reports on external otitis have shown a growing realization of the rôle of *Bacillus pyocyaneus* as a pathogen. It is a well-established but not well-known fact that acetic acid acts almost specifically against this organism. After the external canal is carefully cleaned with hydrogen peroxide a snug cotton wick is inserted and then this is saturated with 2 per cent. acetic acid solution; after 48 hours the wick is removed. In chronic ears it often requires a week or more of treatment before the skin returns to normal. When the acute phase has subsided and if an underlying seborrhœa remains the patient is instructed to use a fungicidal ointment. In the past three years 248 ears in 165 patients were treated by the author without a single failure to clear up the acute phase. Even in the face of fever and pre-auricular adenopathy no other treatment was used. There is no apparent damage to tissue with this treatment. Three illustrative cases are reported.

ANGUS A. CAMPBELL.

LARYNX

On the Rôle of Streptomycin in the Treatment of Laryngeal Tuberculosis.

I. JAKABFI. *Monatsschrift für Ohrenheilkunde*, 1950, lxxxiv, 33.

In the treatment of laryngeal phthisis with streptomycin, dysphagia is usually the first symptom to be relieved. This is noted at the end of the first week of treatment, after administration of 10 to 15 g. of the drug. The hoarseness is next diminished, although the voice may remain easily tired even after complete healing. Exudative manifestations, œdema and ulcers improve after the dosage has reached 25 to 30 g. The last phase of healing is the absorption of the specific granulation tissue.

Four detailed case histories are given by the author. Contrary to the usual observations, the lung condition did not necessarily show an improvement parallel with the laryngeal healing. The bacilli in the sputum from cases of pulmonary tuberculosis may become resistant to streptomycin, whereas those in cold abscesses usually remain sensitive to the drug. This may be explained by the fact that the organisms in the lungs enjoy aerobic conditions which are more favourable to growth.

D. BROWN KELLY.

Radiotherapy of Early Cancer of the Larynx. MAX CUTLER, Chicago. *Journal Amer. Med. Assoc.*, 1950, cxlii, 957.

The author presents the results of radiotherapy in 156 microscopically proved cancers of the larynx with a minimum observation period of 5 years. They were treated by the administration of a large total dose during an 18-day period using an increasing dose through a diminishing portal. This radiation

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does not interfere seriously if subsequent laryngectomy is necessary. Laryngo-fissure yields its best results in lesions limited to the middle or anterior two-thirds of one cord with complete mobility. Radiation in this group presents as good results as those of laryngo-fissure. In this group of 156 cases, more than half of which were inoperable, there were 37·5 per cent. five-year cures, treated by radiotherapy. In 48 cases in which the lesions were too advanced for laryngo-fissure and for which the only surgical alternative was total laryngectomy there were 57 per cent. five-year cures. When the cords are freely movable or only partly fixed curability is high and radiotherapy is the method of choice. Total laryngectomy is reserved for advanced lesions with complete fixation of the cords occurring in surgical subjects, providing the fixation is caused by carcinoma and not inflammation. The most important contribution of radiotherapy to laryngeal cancer relates to the group beyond the scope of laryngo-fissure for which total laryngectomy is the only surgical alternative. When such lesions are not yet completely fixed they are ideally suited for radiotherapy and the curability is at least equal to that of laryngectomy. The future will probably witness a decrease in the number of total laryngectomies. The article occupies nine columns, has two tables and a bibliography.

ANGUS A. CAMPBELL.

MISCELLANEOUS

On Intracutaneous Reaction With Tonsil Extract. (Also a Communication on the Ætiology of Certain Forms of Polyneuritis.) H. STROTZKA. *Monatschrift für Ohrenheilkunde*, 1950, lxxxiv, 49.

Intracutaneous tests with tonsil extract were carried out in 100 cases, of which 16 gave a positive result. The reaction shed light on the ætiology of two forms of polyneuritis. Sulphonamide polyneuritis appears to be a purely toxic manifestation, and is not due to allergy. Salvarsan polyneuritis, on the other hand, is almost certainly allergic in origin. Contrary to earlier opinions, these tests are considered valuable as indicating the presence of focal sepsis and the advisability of tonsillectomy.

D. BROWN KELLY.

Bronchoscopy in Atelectasis in the Newborn. A. W. DOUST, Syracuse, N.Y. *Laryngoscope*, 1950, lx, 207.

Bronchoscopic aspiration of the newborn is a relatively benign procedure when properly performed. Selected cases of newborn atelectasis, secondary to bronchial obstruction, which failed to respond to conservative treatment, are materially benefited by bronchoscopic aspiration. The ætiology of atelectasis in the newborn is still not fully understood. If bronchoscopic aspiration were more widely used for all types of congenital atelectasis, the indications and contra-indications would be sooner understood and more lives undoubtedly saved. (Author's abstract.)

Tracheo-bronchial Aspiration with a Urethral Catheter. LEONARD CARDEN, Chicago. *Journal Amer. Med. Assoc.*, 1950, cxlii, 1039.

Asphyxia by accumulation of tracheo-bronchial secretions is a frequent complication and may cause symptoms and death in many common medical cases and emergencies. Tracheo-bronchial aspiration is an indispensable

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procedure for clearing the airway of such secretions. Bronchoscopy and endotracheal catheterization and suction should be used more frequently in such cases. Laryngeal trauma attributable to these procedures is rarely encountered. Ten cases illustrating the immediate life saving effect of this procedure are reported.

ANGUS A. CAMPBELL.

Antihistaminic Drugs : Comparative Activity in Man as Measured by Histamine Iontophoresis. THOMAS H. STERNBERG, DANIEL J. PERRY, and PAUL LEVAN, Los Angeles. *Journal Amer. Med. Assoc.*, 1950, cxlii, 969.

Thirteen commercially available antihistaminic drugs have been tested by the authors under controlled conditions. Antihistamine activity may be arbitrarily measured by converting the initial one- and two-hour readings to micrograms of histamine base per c.cm. of solution and subtracting the one- or two-hour reading, whichever is the greater, from the initial reading. The maximum histaminic activity is reached within two hours and the antihistaminic activity disappears in four or five hours. Experience with histamine electrophoresis is a reliable and accurate method of determining in man the relative antihistamine activity of various drugs. Different persons vary widely in their response to the same antihistaminic drug and it is not known why the antihistaminic drugs are not effective in some persons. The article contains two tables and three figures showing the comparative antihistaminic activity of all the drugs used.

ANGUS A. CAMPBELL.

Treatment of Otorhinogenic Meningitis with Penicillin. CHRISTIAN WEBER, Helsinki, Finland. *Acta Oto-Laryngologica*, 1950, xxxviii, 167.

The treatment of otogenic meningitis is directed partly towards the causal focus, partly towards the disease itself. Detailed clinical and roentgenological examination is the essential basis for effective surgical treatment. Emptying of the causal focus is undoubtedly the most important part of the treatment, but the meningitis as such requires treatment as well. The author, who works in the clinic of Professor Meurman, comes to the conclusion that otorhinogenic meningitis responds favourably to treatment with penicillin, but the mode of application and the dosage are of great significance. Opinions differ regarding the value of intrathecal treatment, and suboccipital administration has not been adopted in Meurman's clinic; it is considered more hazardous than lumbar injections, because meningitis causes hyperæmia of the medullar arachnoid and hæmorrhage close to vital centres may occur. Intraventricular injections are used at the clinic if lumbar injections fail. Once the skull has been opened, this mode of application is convenient and involves no risks. Treatment should not be terminated too soon after clinical recovery—this applies in particular to intrathecal treatment. Treatment with sulphonamides in doses large enough in themselves to be considered of therapeutic value, is recommended as an adjunct to other treatment.

R. SCOTT STEVENSON.