

## ABSTRACTS

### EAR

*Operations for the Improvement of Hearing in Chronic Inflammatory Processes of both Middle Ears.* W. MORITZ. *Zeitschrift für Laryngologie, Rhinologie, Otologie*, 1950, xxix, 578.

According to Herrmann, the fenestration operation may be employed, not only for clinical otosclerosis, but also for cases of conduction deafness such as adhesive process and chronic middle-ear inflammation. Only those patients whose severe bilateral deafness affects their work should be considered. In otosclerosis the deafer ear is usually selected for operation. In bilateral middle-ear deafness (often associated with secondary cochlear involvement), the side showing the lesser inner-ear deafness should be chosen. Chronic adhesive cases, and those of middle-ear suppuration which are healed and dry, may be dealt with in one stage (Shambaugh procedure). Active suppuration in the middle ear demands, of course, a preliminary operation to obtain a dry ear. A radical operation with meatal flap, similar to the first stage of Sourdille's procedure, is advised. This is followed in four to six months by opening of the labyrinth.

The criteria for the selection of cases are: (1) Not too great a loss for the speech frequencies, and attainment of the 30-decibel level by operation. (2) Almost pure conduction deafness. (3) Good functioning inner ear.

Severe deafness in otosclerosis occurs when both round and oval windows become closed by new bone. In chronic middle-ear disease, scar tissue formation can involve both windows. Such cases give a poor result on fenestration, because the provision of only one mobile window does not permit the wave movement of the endolymph which is necessary for good hearing. Theoretically such a state of affairs should be treated by making two fenestra, the second lying at a different level from the first in order to take over the duties of the obliterated round window. The posterior or anterior vertical semicircular canals at the eminentia arcuata might be suitable. The fenestra could be covered with a prolonged meatal flap or by dura mater from the middle fossa.

D. BROWN KELLY.

*New Methods of Treatment for Deafness.* P. J. KOSTELIJK. *Zeitschrift für Laryngologie, Rhinologie, Otologie*, 1950, xxix, 574.

In this paper the author discusses the modern improvements in hearing aids and their application to various types of deafness. The following principles are established: (1) Middle-ear deafness can be helped satisfactorily with a simple amplifier. (2) Inner-ear deafness, on the other hand, requires special measures to avoid unpleasant over-amplification and consequent permanent damage to the auditory nerve and cochlea. Most modern aids amplify up to 120 decibels. The tolerance threshold in perception deafness lies considerably lower than this. Nerve deaf patients therefore require a specially adjusted instrument. Two methods are employed to diminish harmful over-intensification, namely, "peak-clipping" and "compression amplification". It must

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be remembered that in addition to difficulties due to a diseased hearing organ, there are also problems on the acoustic side such as the resonance of the hearing organ and the adaptation of the ear to various sounds.

D. BROWN KELLY.

SYMPOSIUM ON THE HISTOLOGY AND PATHOGENESIS OF OTOSCLEROSIS.

*Archives of Otolaryngology*, 1950, lii, 843.

*Fissular Region of the Otic Capsule in Relation to Otosclerosis.* BARRY J. ANSON, Chicago.

In no other portion of the otic capsule is there encountered like evidence of histological instability—a circumstance which renders the fissular region subject to pathological change, the vestibular window vulnerable to invasion and the stapes subject to fixation within its fenestra.

*Incidence, Location and Extent of Otosclerotic Lesions.* STACY R. GUILD, Baltimore.

The incidence of clinical otosclerosis is far below that of the histological, because in about seven-eighths of the ears with otosclerotic lesions the condition gives rise to no symptoms, and the presence of the disease is never suspected unless serial histological sections of the temporal bones are made and studied with a microscope. Only in about one-eighth of the ears with histologically demonstrable otosclerosis are the location and the extent of the osseous lesion such that impaired hearing results. There may be occasional exceptions, but in general otosclerosis does not affect hearing acuity until, or unless, ankylosis of the stapedio-vestibular articulation occurs. In other words, to cause impaired hearing an otosclerotic lesion must invade, and replace with its peculiar kind of new bone, some portion of the articular cartilage and the adjacent part of the annular ligament. The invasion and replacement of the annular ligament usually occurs from the side of the oval window margin, but it may take place in the other direction.

Usually, only one otosclerotic area is present in a temporal bone, but two anatomically separate areas occur rather often, and three or more independent areas occasionally develop in an ear. The disease process may begin in almost any portion of the otic capsule. More than half of all otosclerotic areas arise in the region immediately in front of the oval window, and in more than three-fourths of all ears with histologically demonstrable otosclerosis this region is involved. Obviously, there is good reason to call it the "area of predilection" for otosclerosis. The round window region ranks next to the oval window in the frequency with which otosclerotic lesions develop; about one-fifth of all histologically recognized areas of otosclerosis are somewhere along the zone of attachment of the round window membrane. Only rarely do areas in this region develop into major lesions, i.e. into ones that occlude the round window niche or that otherwise might affect the acuity of hearing. Likewise, the lesions in the regions of less frequent occurrence of independent development of otosclerosis seldom, if ever, grow to a size such that they, by their presence, affect the hearing.

In the author's studies, about 30 per cent. of the persons with histological otosclerosis had only one ear involved. In persons with bilateral otosclerosis,

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bilateral symmetry of the areas is not always present. Despite all that has been learned about otosclerosis, its basic riddle remains unsolved.

*Otosclerosis: Hypothesis of its Origin and Progress.* DOROTHY WOLFF, New York.

The difficulty in giving a precise characterization of the histopathology of otosclerosis has long been recognized. Yet the microscopic picture is clear cut and easily identified. A wealth of clinical and microscopic knowledge that comprises a multiple picture of otosclerosis has been inherited from men of great integrity. The hypothesis is presented that otosclerosis has no specific cause but that it is the result of damage to the peripheral blood supply. This damage might be chemical, vasomotor or allergic. It may be trauma from vibratory phenomena. What trend the ultimate course of the disease will take depends on the constitution of the individual patient. Twenty microphotographs are presented.

*Influence of Systemic and Local Factors on the Development of Otosclerosis.* J. R. LINDSAY, Chicago.

The possible environmental influence of prolonged constitutional disturbances and of pregnancy is suggested by clinical observation. Chronic inflammatory changes in the ear may sometimes act as an environmental factor necessary for production of the disease in the presence of a hereditary predisposition. A definite relation is clinically evident between blue sclerae, fragilitas ossium or osteogenesis imperfecta, and otosclerosis. The existence of some common hereditary constitutional factor is suggested to account for predisposition to any one or any combination of these conditions. The endosteal and endochondral layers of the capsule are resistant to most general bone diseases. Osteitis deformans, or Paget's disease, and otosclerosis are exceptions.

Death of the endochondral layer may result from electro-coagulation and is followed by active absorption along vascular channels with ultimate removal and replacement by new bone. While it has been possible experimentally to produce alterations in the bones of the skeleton and the outer layer of the labyrinthine capsule by various means, the inner layers of the capsule have shown great resistance to change. Further basic research into the biological processes involved in normal cartilage and bone would seem indicated as a preliminary to the study of such bone diseases as osteitis deformans, fragilitas ossium and otosclerosis.

*Postnatal Rebuilding and Otosclerotic Bone Formation in the Region of the Otic Capsule.* T. H. BAST, Madison, Wis.

The purpose of this article is to correlate the abnormal contents of the fissa ante fenestram and the alterations in the surrounding otic capsule in the human foetus with abnormal and pathological processes in the fissular region of the adult human capsule, in order to determine what relation exists between such developmental pathological processes and otosclerotic bone. This account is based on serial sections of petrous bones obtained at autopsy in 38 cases. In most cases both ears were studied.

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It appears that many of the bony changes observed are attempts to rebuild that part of the otic capsule which was left unstable by late foetal cartilage growths, especially in the fissular area. It is not clear why attempts to rebuild this seem to result in circumscribed masses of quiescent bone when the process occurs deep in the capsule, whereas when it occurs at the tympanic orifice of the fissula it seems to form active otosclerotic bone. A larger series of cases must be studied. The fact that some periosteal bone, which is less resistant to alteration, occurs along the tympanic surface may be a factor. Again, the fact that blood vessels supplying this part of the capsule are normally found in the tympanic orifice of the fissula suggests that, owing to abnormal or unstable condition of this area, chemical substances may be liberated which stimulate these localized blood vessels to abnormal activity resulting in otosclerotic new growths.

R. B. LUMSDEN.

*Histology and Histogenesis of Cholesteatoma of the Middle Ear and Mastoid.*  
JOSEPH W. BEGLEY, Junior, JOHN R. McDONALD and HENRY L. WILLIAMS, Rochester, Minnesota. *Archives of Otolaryngology*, 1951, liii, 41.

When the evidence and opinions are balanced, the conclusion may be reached that it is possible for an aural cholesteatoma to originate in the manner indicated by any of the three theories. It would seem, however, that the metaplasia theory of origin is the most plausible in the majority of cases.

R. B. LUMSDEN.

### LARYNX

*Streptomycin therapy in Laryngeal Tuberculosis.* CLAUDE C. CODY, Houston, Texas. *Archives of Otolaryngology*, 1951, liii, 1.

Sixteen patients suffering from tuberculosis of the lungs with laryngeal involvement have been treated parenterally according to several dosage plans and by the aerosol technique. Streptomycin in each case proved an effective agent so far as the laryngeal condition was concerned. In the patients with exudative pulmonary tuberculosis some clearing could be noted on the roentgenogram, but in no patients of this group did the sputum become negative. This demonstrates well the bacteriostatic action of streptomycin, which holds the acid-fast bacteria in check while its remarkable action on granulation tissue formation allows healing to take place. From this series of patients studied, it may be said that parenteral administration of streptomycin is the more effective method of administering the drug, but carries the greater risk of side reactions. The single outstanding feature of streptomycin medication, regardless of the method by which it is given, is the relief of pain in the larynx when this organ is involved.

R. B. LUMSDEN.

*Therapy of the Alaryngeal Voice following Laryngectomy.* EMIL FROESCHELS, New York. *Archives of Otolaryngology*, 1951, liii, 77.

The topic of voiced alaryngeal speech is discussed briefly. Special stress is placed on the methods of taking in the necessary air for this kind of voice production. Inhaling into the œsophagus is preferable to swallowing. A case

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history demonstrates the advantage of the inhaling method. (Author's Summary.)

## PHARYNX

*Nasopharyngeal Malignant Tumour: an Overlooked Condition.* HAROLD L. HICKEY, Denver. *Archives of Otolaryngology*, 1951, liii, 53.

Nasopharyngeal malignant process, a disease entity formerly considered rare, is now reliably estimated to comprise about 3 per cent. of all malignant growths of the head and neck. In spite of increased knowledge available, the condition is all too frequently overlooked; this situation is due to the bizarre pattern of symptoms and signs which diverts attention from the primary lesion, to difficulties in biopsy and, unfortunately, to hurried and incomplete examinations. A brief résumé of pertinent literature is presented to show the trend of changing concepts of the disease, and a group of 24 cases is reported from private and institutional practice.

R. B. LUMSDEN.

## TRACHEA AND BRONCHI

*Management of Aspirated straight Pins in the Bronchi utilizing the Stereoscopic Fluoroscope.* ALDEN H. MILLER, Los Angeles. *Archives of Otolaryngology*, 1951, liii, 68.

At the Los Angeles Children's Hospital, the use of a newly invented stereofluoroscope has supplanted the use of the biplane fluoroscope and has made much easier the removal of most of the straight pins from the peripheral bronchi. However, one or two problems have arisen that could not be solved by any of the aforementioned procedures. Typical cases illustrating the problems presented by a straight pin in the bronchi are cited and commented on.

R. B. LUMSDEN.

## MISCELLANEOUS

*Aureomycin in the Treatment of Influenza: A Controlled Study.* MAJOR WILLIAM G. THALMANN, Medical Corps, U.S. Army, C. HENRY KEMPE, San Francisco, CAPTAIN JOSEPH A. WORRALL, Medical Corps, U.S. Army, GORDON MEIKLEJOHN, Berkeley, Calif. *Journ. Amer. Med. Assoc.*, 1950, cxliv, 1156.

This report deals with a controlled study of the use of aureomycin in the treatment of influenza, type A, in a military installation during the winter of 1949-1950. The study includes a total of 150 cases of serologically proved influenza A. Of the 150 patients, 69 were treated with aureomycin, 43 were treated with penicillin and 38 received no chemotherapeutic agent. Complications included 5 cases of roentgenographically proved pneumonia resembling in appearance primary atypical pneumonia. Bacteria regarded as etiologically significant were not isolated from any of these 5 patients. No complications proved to be of bacterial origin were encountered. Aureomycin was given

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in doses of 0.25 gm. every 6 hours. There are two tables, one giving an analysis of dosage, the other giving an analysis of results. The course of the illness in patients treated with aureomycin was not significantly different from that observed in patients who received penicillin or no chemotherapy at all. The writers feel there was no evidence that aureomycin or penicillin influenced the course of the disease.

ANGUS A. CAMPBELL.