

ABSTRACTS

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The path of infection in acute inflammation of the Middle Ear, Mastoid and Nasal Accessory Sinuses. D. G. W. VAN VOORTHUYZEN.
(*Acta Oto-laryngologica*, Vol. xviii., fasc 1-2.)

Hitherto it has generally been held that inflammations of the middle ear have arisen as the result of micro-organisms in air or secretion being forced from the nasopharynx along the lumen of the Eustachian tube, and a similar mechanical method of infection has been assumed to apply also to the accessory cavities of the nose.

In the Author's opinion this "aërogenous" method of infection is possible only in the presence of great rise of pressure in the nasopharynx and must be quite exceptional. The idea of von Ostmann that the relatively greater width and shortness of the Eustachian tube in children favours the insufflation of infected secretion and so renders them especially liable to middle-ear inflammation, is contrary to the laws of mechanics.

In a group of acute middle-ear and accessory sinus inflammations, which arise during the course of acute infectious diseases and septicæmic conditions, it is probable, although not certainly proved, that the infection is hæmatogenous.

The greater number of acute middle-ear and accessory sinus inflammations, however, must arise through the *progressio per continuitatem* of a rhino-pharyngitis or through a retrograde spread by way of the lymphatics from an infected nasopharyngeal mucous membrane.

The common view of the origin of tuberculous disease of the middle-ear as the result of an aërogenous infection is wrong. In this condition, also, the infection is either a hæmatogenous or a retrograde lymphogenous one.

[In an Editorial note appended to this paper it is stated that the Author, who is resident in the Dutch Indies, has not had access to certain communications on the subject by Grünwald, Ruttin and others.]

THOMAS GUTHRIE.

Fibro-hæmangioma of the Petrous Bone and Middle Ear in three sisters.
C. GOEKOOP. (*Acta Oto-laryngologica*, Vol. xviii., fasc 1-2.)

Benign growths of the middle ear and petrous bone are comparatively rare. The occurrence in three sisters of growths of a similar nature, arising in each from the same circumscribed spot,

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implies a marked predisposition, but the family history threw no light on the cause.

In each of the sisters the first symptom was tinnitus, noticed at about twenty years of age, and due probably to closure of the Eustachian tube from pressure in the region of the peritubal cells. In two, the growth was on the right side, and in one on the left. In all of them the growth was very slow. One of the sisters died in ten years of aspiration pneumonia. In the eldest sister the growth has been present for nineteen years and she is still in fairly good health. It appears to have ceased to grow during recent years. In the youngest sister it has been present for six years.

Microscopical examination of portions of the growth removed from the meatus showed, in two of the cases, the appearances only of an ordinary aural polypus, and it is possible that the part in the meatus really consisted only of granulation tissue from the middle ear. In the third case, however, the specimen was characteristic of hæmangio-fibroma, and it may be concluded that in the two other cases, also, the growth was a fibroma, less plentifully provided with blood vessels.

The whole progress of the disease showed a striking similarity in the three cases; for example, the age at which the symptoms first appeared, and the fact that in each of the two married sisters facial paralysis first developed during pregnancy and became worse during the puerperium. Especially remarkable is the similarity in the site of the growths in the petrous, as shown by the radiograms.

THOMAS GUTHRIE.

Experimental Investigations on the Chemotherapy of Meningitis.

K. VON BECK, K. BERINGER and M. GUNDEL. (*Münch. Med. Wochenschrift*, Nr. 33, Jahr. 79.)

The experiments were made with the cerebro-spinal fluid of patients who for some specific reason required to have lumbar puncture carried out. Investigations were carried out with urotropin, septojod, solganal and tryptflavin.

After withdrawal, small measured amounts of the cerebro-spinal fluid were inoculated with definite infective doses of typhosus, staphylococci, hæmolytic streptococci and pneumococci. The infected fluids were used against non-infected controls to inoculate culture media, and the latter were examined at stated intervals for percentage growth of organisms.

The results are shown in four tables. When the drugs were administered intravenously there was no noticeable bactericidal effect in the cerebro-spinal fluid. When, however, on two occasions intrathecal injections of tryptflavin were made in the lumbar region about one hour before the withdrawal of the spinal fluid, the latter was found upon injection and cultivation to have

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markedly bactericidal qualities which, in six instances, led to the complete destruction of the infecting organism in twenty-four hours. These six instances concerned two of the cases (spinal paralysis) and the amounts injected were in one instance 1 c.cm. of an 0.1 : 5 c.cm. solution and in the other 1 c.cm. of a 2 per cent trypanflavin solution. It is suggested that if such intrathecal injections be used in treatment it would be essential for the injection to be carried out early, that is in the non-purulent stage of the infection.

J. B. HORGAN.

Alterations in the Cerebro-spinal fluid. ANNE-MARIE NELKEN.
(*Arch. Ohr-, u.s.w., Heilk.*, 1932, Band cxxxiii., pp. 136-64.)

The author first reviews the very extensive literature on the subject and then describes her own clinical researches in over one hundred cases. The subject is discussed under three headings : I. *The Calcium content.* II. *The Glucose content.* III. *The Weichbrodt reaction.*

The normal calcium content of the cerebro-spinal fluid is 5-6 mg. per cent, approximately 50 per cent of the blood serum content. The calcium level is diminished in tetany, it is slightly increased in meningitis, encephalitis, cerebral abscess and cerebral tumours. But speaking generally, the determination of the calcium level in the cerebro-spinal fluid is of little value diagnostically in oto-rhinology.

The literature on the *glucose content* of the cerebro-spinal fluid is full of contradictions. It may be accepted that the glucose level becomes less in all forms of meningitis, especially suppurative and tuberculous meningitis. When the glucose has completely disappeared death generally results. In *diabetes* the glucose content of the cerebro-spinal fluid varies side-by-side with the blood sugar level. In certain conditions the glucose content is increased in the cerebro-spinal fluid apart from any change in the blood serum, e.g. in epilepsy, encephalitis lethargica and chorea.

In *alimentary hyperglycæmia* "hyperglykorachia" does not occur, but the increase in the glucose-level produced by adrenalin (stimulation of the sugar centre in the medulla) occurs equally in the blood serum and in the cerebro-spinal fluid.

When a specimen of cerebro-spinal fluid from a case of meningitis is kept in an incubator for twenty-four hours, the glucose content diminishes still further. This seems to prove that the diminished glucose content is due to a *glycolysis* caused by the infecting organism, and that it is not dependent on factors controlling the medullary centre or on the blood-sugar level.

The *Weichbrodt reaction* is a simple and particularly delicate test for the albumin and globulin content of the cerebro-spinal fluid. Seven parts of cerebro-spinal fluid are mixed with three parts of a 1 in 1,000 solution of mercury perchloride. After a few minutes a deposit

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occurs in all pathological cases, but not in normal cerebro-spinal fluid. In tabular form comparisons are made between the following reactions: Nonne-Apelt, Pandy, Wassermann and Weichbrodt.

Up to the present time the Weichbrodt reaction has been used only in the diagnosis of tertiary syphilis of the central nervous system. The author shows that this reaction has also some diagnostic value in the various forms of otogenic and rhinogenic meningitis.

J. A. KEEN.

Abnormal Muscles in the Middle-ear. F. ALTMANN. (*Arch. Ohr-, u.s.w., Heilk.*, 1932, Band cxxxiii., pp. 28-37.)

Congenital abnormalities or absence of either tensor tympani or stapedius muscles are not too uncommon, but the presence of *additional muscle bundles* must be looked upon as very rare. Three such specimens are described.

1. The temporal bone of a new-born infant which showed many abnormalities of both ear-organs (absence of os tympanicum, of the tympanic membrane, malformation of the cochlea). An abnormal muscle bundle (striated) was found in the medial wall of the tympanic cavity, running parallel to the facial nerve, but enclosed in a separate bony canal. The tendon of this small muscle joined the tendon of the tensor tympani. The nerve supply of this muscle could not be determined. This abnormal muscle bundle has been described previously by Schwabach (one specimen) and by Brock (five specimens), but these authors are unable to give any explanation of the morphology. It is probably a remnant of the primitive depressor muscle of the mandible, which is supplied by the facial nerve.

2. A right temporal bone from an infant, aged two days, with microtia and congenital atresia of the external meatus. An *abnormal muscle* was found above and lateral to the tensor tympani.

3. A left temporal bone from a six months old foetus with double microtia and atresia of both external meatus. *Two abnormal muscles* were found near the tensor tympani.

As regards specimens 2 and 3, the author assumes that the abnormal muscles are split-off muscle bundles belonging to the tensor tympani, and that they are therefore supplied by the trigeminus. The article is illustrated.

J. A. KEEN.

Deafness after poisoning with Oil of Chenopodium. KARL HILLENBRAND. (*Münch. Med. Wochenschrift*, Nr. 29, Jahr 79.)

A case is described in detail in which a woman who took repeated doses of oil of chenopodium for the cure of worms suffered a severe injury to her inner ear. The conclusions drawn are that the therapeutic dose of this drug should never be exceeded, that the bowels should be opened, preferably by castor oil, not later than one hour after the drug is administered, and that it should never be taken on more than two consecutive days.

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The Diagnosis of Orogenous Meningitis. G. ALEXANDER. (*Wiener Klin. Wochenschrift*, Nr. 25, Jahr 45.)

Meningitis may occur so early in otitis media that it simulates a concurrent and independent disease. When other otogenous intra-cranial complications also exist, the clinical signs of meningitis may be absent. The classical clinical symptoms of the affection in its early and later stages are enumerated, and stress is laid upon the prognostic importance of lumbar puncture. This is essential to the diagnosis, and allows of differentiation of the disease from chronic or acute abscess of the brain, neoplasm (gumma, tubercle, hæmorrhage) meningism, tuberculous meningitis, encephalitis and diabetic coma. In infants the anterior fontanelle is tense and the child lies curled up in the foetal position; pressure on the clavicle or symphysis pubis produces twitching of the legs, and dorsal flexion of the great toe may be produced by pressure on the symphysis pubis. When the leg is hyperflexed at the knee and hip, the contralateral great toe is dorsiflexed and the other toes are spread in a fan-like manner.

J. B. HORGAN.

Is a cure of Otosclerosis to be obtained by the use of Adrenalin? OTTO MAYER. (*Wiener Klin. Wochenschrift*, Nr. 12, Jahr 45.)

Mayer surveys the question of influencing otosclerosis by adrenalin as well as by other hormones such as insulin. He maintains that unfortunately the hopes of such therapeutic success have not yet materialised. Earlier trials have shown that neither a cure nor an essential improvement of the disease can be attained by the use of adrenalin. The facts which have recently been advanced in favour of this remedy rest upon inaccurate suppositions. Some passing success has been attained with insulin, but the writer warns us against the possible stenocardiac trouble which may result from its use.

J. B. HORGAN.

The treatment of Ménière's Symptom-complex with Padutin. KARL HILLENBRAND. (*Münch Med. Wochenschrift*, Nr. 30, Jahr 78.)

Padutin (Kallikrin "Bayer") is a circulatory hormone formed by the pancreas. It dilates the cardiac coronary vessels and the arteries of the brain as well as all the smallest peripheral vessels, these phenomena being accompanied by a compensatory constriction of the vessels of the splanchnic area.

On the assumption that Ménière's syndrome depended on some disorder of the peripheral circulation, eight cases in which the classical symptoms occurred were treated with Padutin. The preparation was administered orally in doses of 5 to 25 drops three times daily.

In two cases, after a total administration of 10 c.cm. there was no improvement. In another, a severe case, the symptoms were at

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first accentuated but considerable improvement was noticeable after a total dose of 30 c.cm. had been given. This patient had previously had a month's unsuccessful treatment with quinine and potassium bromide. In three patients a distinct improvement occurred after the administration of Padutin. Two other cases in which a surprisingly quick and pronounced improvement occurred are described in detail.

It is specifically stated that it is only the vertiginous portion of the symptom-complex which is beneficially influenced by Padutin.

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The Health of the School Child : Annual Report of the Chief Medical Officer of the Board of Education for the year 1931. Chapter IV : Adenoids and Enlarged Tonsils. pp. 50-64. (Published December 1932.)

Sir George Newman's annual report is a summary of the work done by the Local Education Authorities throughout England and Wales. The section dealing with tonsil and adenoid operations is more lengthy than usual, a special chapter being devoted to the subject in the present report. Sir George discusses many points of interest to the specialist and he gives numerous and valuable references.

The great increase in frequency of operation causes the Board of Education some anxiety. In nine years the increase has been more than 130 per cent. The *considerations bearing upon the increase of operation* are analysed. The chief cause is probably *improved facilities* for the operation, particularly the provision for in-patient treatment of the children before and after operation. *Excessive operating* may or may not be a factor. If unnecessary operations are being performed, the author suggests that they will be performed in two types of case :

1. Those in which there is a physiological enlargement of the lymphoid tissue, not so considerable as to be obstructive.
2. Those in which there is, or has been, some local inflammation from which, however, natural recovery is likely to take place.

There is a wide variation in the proportion which the number of operations annually performed bears to the school population in the respective areas, the figures varying from 1 to 8 per cent. The normal school life of an elementary school child is nine years, from 5 to 14. The annual percentage figure must be multiplied by nine in order to obtain the total operation-rate among elementary schools in any given area, assuming that the annual percentage has remained constant.