

Abstracts.

E.A.R.

Primary Diseases of the Labyrinth as the Result of Focal Infection.—G. E. Shambaugh. "Annals of Otol-ogy, etc.," xxvi, p. 685.

Distinguishes three distinct types of primary degeneration in the labyrinth: (a) Cochlear, (b) vestibulo-cochlear, (c) vestibular. Upon these depend the wide variation of symptoms. The ætiology is quite clear in many cases—it may be syphilitic, or occur as a sequel of mumps, typhoid, measles, scarlatina, etc. But there remains a large percentage in which the cause is not accounted for and in these it is probably that focal infection is responsible. Four cases are given, due respectively to acute rheumatism, septic tonsils, arthritis, tonsillitis, and chronically infected tonsils.

The paper is evidently a continuation to that by the same author in a previous issue of the "Annals" (xxiv, p. 480). Similar cases were recorded by the reviewer in "The Practitioner," xcvi, p. 245.

Macleod Yearsley.

The Diagnosis of Vertigo. (1) **Vertigo as a Symptom of Primary Disease of the Labyrinth.**—George E. Shambaugh. "Journ. Amer. Med. Assoc.," 1917, September 8. (2) **Aural Vertigo Occurring in Suppurative Disease of the Middle Ear.**—P. D. Kerrisson. *Ibid.* (3) **Vertigo due to Intracranial Disease.**—T. H. Weisenburg. *Ibid.* (4) **Value of Bárány Tests in the Diagnosis of Vertigo from whatever Cause.**—Isaac H. Jones. *Ibid.*

In this interesting group of papers the problem of vertigo is approached from various points of view.

The first two writers deal with the question as it presents itself to the aurist.

Shambaugh remarks that great advances have been made since Ménière, in 1851, showed that vertigo might be associated with disease of the internal ear. It soon became obvious that cases of Ménière's disease were not all due to hæmorrhage into the labyrinth, and the term "Ménière's syndrome" appeared more applicable. Under this heading are grouped cases characterised by attacks of vertigo, associated with tinnitus and deafness, cases which differ widely, however, as regards their pathology.

(1) Hæmorrhage into the labyrinth is probably of rare occurrence, though it may occur as a complication of blood diseases, such as leucæmia, purpura, and pernicious anæmia.

(2) Embolism of the labyrinthine artery may occur in caisson workers, the result of gas emboli, and the writer has seen one case of blood embolism during the puerperium.

(3) Syphilis, secondary or tertiary, and hereditary syphilis may invade the labyrinth, but, as a rule, the progress is so gradual that the disturbance of equilibrium is "compensated," and vertigo does not occur.

(4) Neuritis of the eighth nerve may be caused by quinine, alcohol,

or tobacco, or by the toxins of infectious fevers. Sometimes the vestibular nerve is alone affected, so that the vertigo is unaccompanied by tinnitus or deafness.

The most frequent cause of vertigo is "a chronic degenerative process affecting the peripheral neurons of the cochlear and vestibular nerves, characterised by high-pitched tinnitus and loss of hearing for high tones." Attacks of vertigo occur, and these are regarded as the result of labyrinthine hæmorrhage by some authorities, who would reserve for such cases the term "Ménière's disease." The loss of function in the semicircular canals may be demonstrated by the rotation of caloric tests. Many of those cases are the result of some chronic focal infection, such as is often to be found in the faucial tonsil.

Confining his attention to the vertigo which may occur in cases of otitis, Kerrisson alludes, in passing, to those rare occasions when the symptom does not imply involvement of the labyrinth in the suppurative process.

As a rule the vertigo of middle-ear suppuration is the result of an infection spreading to the labyrinth.

During the acute stage, which the aurist seldom sees, there is spontaneous nystagmus towards the side opposite the lesion, subjective sensation of the rotation of surrounding objects in the plane of the nystagmus, and a tendency of the patient to fall, if standing, in the direction opposite to that of the quick eye movement.

In an uncomplicated case of suppurative labyrinthitis those symptoms of vertigo, nystagmus, and ataxia gradually subside, leaving the patient in what is known as the latent stage. In some cases there may still be brief attacks of vertigo, induced by some movement or position to which the patient has not been re-educated, such as going up or down stairs, sudden turning, or standing at a height or on a narrow support. It is clear that such vertigo constitutes a menace to the patient's life.

During the acute stage there has been a recent infection of a bone cavity from which the anatomic pathways to the meninges are still open and unguarded, and it is clear that the treatment must consist in absolute rest and quiet and a postponement of all operative interference.

By the time the latent stage is reached the focus of infection has become walled off by inflammatory exudate, but is still liable to break down the barriers and infect the meninges. It is then that a careful radical mastoid operation, with drainage of the labyrinth, is the only treatment which will safeguard the patient's future.

Vertigo, in any suppurative lesion of the ear, is always a serious symptom, and the questions of whether to operate and when to operate will require the aurist's best judgment.

Patients do not die of suppurative labyrinthitis *per se*, but of a secondary intracranial infection, and before deciding upon operation, the chances of recovery without operation, the possible influence of an operation in causing a spread of infection, the stage at which operation is safest, must all receive due consideration.

Weisenburg treats the subject from the standpoint of the neurologist. He describes a number of cases of cerebral tumour in which vertigo was present. Vertigo in such cases points to a great increase of intracranial pressure, or to disease of the posterior cranial fossa.

A patient with a left cerebello-pontine angle tumour had no dizziness on standing upright or looking to the right, but whenever he looked to the left he at once felt dizzy.

In a patient, aged six, from whose right cerebellar hemisphere a cyst

was removed, vertigo was entirely absent. There was no increase of intracranial pressure.

Another patient had a glioma of the right cerebellum, and suffered from attacks of vertigo, with nausea and vomiting, symptoms which disappeared after a decompression operation.

From a study of such cases it becomes evident that vertigo of itself is of little value as a localising symptom.

Functional vertigo is of common occurrence. Oppenheim believes that anyone can bring on a feeling of giddiness by concentrating his thoughts on a loss of balance and calling up recollections of the sensation. In neurasthenic individuals fear or thought of vertigo are quite sufficient to produce it.

Vertigo is very common in traumatic neuroses, and the diagnosis of such cases is often very difficult. The vertigo of minor epilepsy must not be forgotten. It is frequently confounded with aural vertigo, although the two may coexist.

Jones advocated a more general resort to the Bárány tests in the diagnosis of vertigo. By this means one may ascertain the condition of the vestibular mechanism, and narrow down the diagnosis to three possibilities—functional, ocular, or toxæmic vertigo.

Vertigo may be due to one of the following causes:

(1) A lesion in the ear itself. The importance of labyrinthitis has only been recently recognised, but we now know that a vestibular affection produces vertigo, nausea, and vomiting, just as a cochlear affection produces deafness and tinnitus.

(2) A lesion within the brain, affecting the intracranial pathways from the ear. This may be abscess, tumour, gumma, hæmorrhage, etc.

(3) Ocular conditions may produce vertigo, which is frequently cured by correcting a refractive error.

(4) Cardio-vascular conditions causing anæmia or hyperæmia of the vestibular mechanism, affecting the ear, the pathways, or the centres.

(5) Toxæmia, which may be evanescent or permanent. The simplest illustration of the former is the vertigo produced by alcohol, while the latter include such poisons as the toxins of mumps and syphilis.

Several interesting cases of toxæmic vertigo are quoted, due respectively to pyelitis, root abscesses of teeth, and septic tonsils. In all cases a diligent search for any such foci of infection should be made.

Douglas Guthrie.

MISCELLANEOUS.

Tooth Impacted in a Secondary Bronchus of the Left Lung; Removal by Lower Bronchoscopy after two Unsuccessful Attempts by Upper Bronchoscopy.—StClair Thomson. "The Practitioner," vol. ci, No. 2, 1918, August, p. 61.

The aspiration of the tooth was not noticed or even suspected at the time of the accident. It occurred in a child, aged ten. According to the dentist, the tooth did not fall from his forceps in the mouth, but it fell on the napkin below the child's chin. As she was recovering from the nitrous oxide anæsthesia she threw up her arms and made a deep, wide-mouthed inspiration. It must have been at this moment that the tooth was aspirated into the left lung. The first attempt at per-oral removal failed owing to the tight impaction of a smooth, hard body,

whose slippery, conoidal surface offered no grasp for the forceps. The second effort failed because the patient collapsed before removal had been attempted. The collapse was possibly due to the traction on the heart necessitated by the obliquity of the bronchoscope tube in the per-oral route. The removal through an opening in the trachea was found to be simple, safe, and prompt, and in no way comparable to the difficulties and anxieties of the two per-oral attempts.

The following conclusions are arrived at: Endoscopy of the air- and food- passages must always remain in the hands of the expert laryngologist. If he is well experienced and in regular practice he will first approach all cases through the mouth, and in most instances he will succeed.

But in a certain number of cases, particularly the rarer and more difficult ones which occur in the left lung, the lower route, through a tracheal opening, is in the interest of the patient. It will also be the route taken more readily by those who are less experienced.

The advantages can be summarised as follows: (1) Less anxiety with the anæsthetic, as we all know that the administration through a tracheotomy opening avoids all pharyngeal and laryngeal reflexes, and is, therefore, much smoother and safer; (2) ability to succeed without several trained assistants, because there is no longer the necessity to mobilise the head; (3) the use of a wider and shorter tube, thus obtaining—(4) better illumination, (5) a larger field of vision, and (6) increased facility of manipulation; (7) less leverage and traction on the important structures at the root of the lung; (8) shorter sitting; (9) greater certainty in result; (10) in the event of failure, or of the foreign body shifting its position during the *séance*, the tracheotomy is a decided security.

Lower bronchoscopy will therefore be the necessary method in certain circumstances, or when foreign bodies are tightly impacted, or when they have receded to the deepest corners of the airway, and particularly in the greater difficulties presented by their entry into the left chest.

The only drawback is the insignificant one of a slight scar. The death-rate from a preventive tracheotomy (as compared with one done for stenosis and often executed in haste and under difficulties) should be *nil*. Two good plates illustrate the communication.

StClair Thomson.

The Internal Secretions in Ear, Nose, and Throat Affections.—Harry L. Pollock. "Laryngoscope," May, 1917, p. 430.

Pollock holds that we shall not be able to put our treatment of glandular disturbances on a rational basis until the physiological chemists can definitely tell us by examination of the blood and the various excretions or secretions whether there is a deficiency or an over-production of the internal secretions. In perfect health all the ductless glands must work in harmony. When one or the other is working excessively or not secreting sufficiently the glands are thrown out of harmony—*i. e.* they must undertake to supply the deficiency or an antagonistic gland will secrete excessively since the inhibitory influence of the affected gland has been removed. We know that the suprarenal as well as the hypophysis acts as a check upon the thyroids and *vice versâ*. When the suprarenal is destroyed or secretes too little, the hypophysis often hypertrophies and attempts to replace it in the economy.

The Thymus.—Basch, experimenting upon dogs, discovered that this gland continued to develop for four weeks after birth and then rapidly retrograded. (In the human subject the retrogression goes on to

puberty.) If the dog's thymus was removed previous to the fourth week, marked developmental change took place—mostly in the bony structures. The bones became soft and weak and the animals could not stand. This condition corresponds strikingly with rickets in children. Extirpation of the thymus also heightened the irritability of the nervous system. Intravenous injections of thymus extract depress the heart action, slow the pulse, and produce a fall in blood-pressure. At the *post-mortem* there is always a clot in the right ventricle. If, however, hirudin was first injected an otherwise lethal dose of thymus could be given, as this drug prevented clotting. Pollock suggests that the administration of hirudin will prevent deaths under anæsthesia in cases of status lymphaticus.

The Suprarenals.—The main secretion comes from the medulla of these glands from which the extract is obtained. Experimental removal of the gland produces progressive muscular weakness, cardio-vascular asthenia, and frequently pigmentation of the skin. The first effect of an injection of adrenalin is a rise of blood-pressure due to a constrictor action on the walls of the vessels themselves. This action is of short duration, and is very often succeeded by dilatation and a fall in blood-pressure. Long-continued injections cause necrosis of the middle coats of the arteries and a deposit of lime salts (arteriosclerosis).

Bossi found experimentally that in sheep, in which one gland was removed, symptoms of osteomalakia resulted in a few days. Bossi treated cases of osteomalakia with adrenalin injections, and found that the patients recovered completely. Pollock asks why, if adrenalin can cure osteomalakia, it cannot cure otosclerosis.

The Hypophysis.—The posterior lobe (nervous) furnishes the principal therapeutic extracts, the action of which is very similar to that of adrenalin. The hypophyseal extract, however, acts longer and can be used indefinitely. Acromegaly is caused by a hypersecretion, but not necessarily an enlargement of the gland. Hochenegg cited the first case of acromegaly in which the hypertrophy was removed by the nasal route. There followed a diminution in size of the hands and feet with complete recovery in three months. The condition of hyposecretion was first described by Froelich and called "dystrophia adiposa genitalis."

Pollock reports a case of tumour of the hypophysis operated upon by the antro-post-ethmo-sphenoidal route: Male, aged twenty-three. Gradual onset of blindness for six months; no headaches. Nasal examination showed nasal turgescence. X rays showed flattening out of the sella and disappearance of the posterior clinoid processes. The patient was given 350 grms. of dextrose, and yet no sugar was found in the urine (increased tolerance for sugar). First operation November 12, 1916. Left middle turbinal removed and ethmoid exenterated. Second operation November 21, 1916. Anterior wall of maxillary antrum exposed through canine fossa. Posterior ethmoid broken into with curette and sphenoidal sphenoid opened. Septum between the two sphenoids broken down. Postero-superior portion of sphenoidal sinus opened with a long electric burr and hypophysis exposed. A soft tumour mass was felt, but was not removed. The patient made an uneventful recovery, but "too short a space of time has elapsed to expect any great amount of improvement in his symptoms."

J. S. Fraser.