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By A. R. Tweedie, F.R.C.S.

Mucosus Meningitis with Recovery—Dr Urbantschitsch.—Boy, aged 21 months, had a bilateral otorrhœa for one week, associated with fever and vomiting. Lumbar puncture on 7th January revealed turbid fluid with *Streptococcus mucosus* in pure culture. The tympanic membranes were normal except that the line of demarcation between the posterior edge and the external auditory meatus was obscured.

8th January—The mastoid cells on each side were filled with pus, in which also the *Streptococcus mucosus* was found. Intra-lumbar injection of 2.5 ccm. of streptococcus serum was made. Much improvement followed on the day after the operation.

Repeated lumbar punctures showed at first still turbid fluid though sterile; but on the 28th January the organism was again found in the fluid. Eventual recovery took place, both ears healing completely.

Urbantschitsch stated that this was the first of seven similar cases which had come under his care all of which had recovered.

Injury to the Labyrinth at Operation: Condition after Twenty Years—H. Neumann.—Neumann had assisted at the operation, twenty years ago, when, by mischance, the horizontal semicircular canal had been exposed and the open end of the canal in both directions could be easily seen. As a result of this injury, symptoms of labyrinthitis at once appeared, and, on examining the patient with the tuning fork, a gradual loss of hearing was found, but suggestive of an injury to the *sound-conducting* apparatus. The diagnosis of serous labyrinthitis was made dependent on disturbance of the endolymph which really forms part of the sound conducting apparatus.

Unfortunately, Neumann had entirely lost sight of the patient until now, when he had applied for relief of giddiness following an attack of influenza. Examination revealed a remarkable degree of hearing, with a well-healed radical operation wound; with the vestibular tests, scarcely any difference could be demonstrated between the two sides.

The vertigo of which the patient complained could not be regarded as referable to the labyrinth. It was probably associated with the attack of influenza.

Nystagmus as the Result of Catheterisation—E. Ruttin.—Female, aged 20, applied for treatment in December 1925, on account of discomfort in the ears with some depreciation of hearing. No

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history of otorrhœa, nystagmus, or vertigo was obtained, but she herself stated that she was very nervous.

On catheterisation of the left ear, a nystagmus directed to the right and lasting over two minutes occurred, unaltered by the position of the head. Both tympanic membranes were intact; but on the left side, the posterior superior quadrant was distended and the mallear plexus injected. On the right side, the membrane was atrophic.

The result of the rotation tests pointed to a hypersensitive condition on the left side, both for the horizontal and anterior vertical canals, while the posterior vertical canals gave a normal response. The patient was tested on several occasions in the same way on both sides with varying result. Ruttin considered that the phenomena must be due to a combination of some intratympanic lesion around the windows, combined with a general hypersensitive condition.

Further Observations on Nystagmus induced by Alteration of Position of the Head and Body—E. RUTTIN.—Male, aged 56, who was formerly perfectly healthy, on the 26th October, without any preliminary discomfort, suddenly had an attack of giddiness in the street; during it, objects appeared to revolve and he vomited, but he did not notice any alteration in his hearing, although he had tinnitus on the left side.

5th November.—On examination, both tympanic membranes were normal.

Conversation, R. ear, at 6 metres; L. ear, at 5 metres. Whisper, R. ear at 4 metres; L. ear, at 2 metres: Weber not lateralised: Rinné positive on both sides: Schwabach on both sides reduced: T.F. C.1 and C.4 well heard on both sides.

Spontaneous nystagmus (rotatory) to the right of the first grade, with a trace of horizontal nystagmus to the left.

Rotation tests suggested a decreased sensibility on the left side and an increased sensibility on the right side, as regards horizontal and anterior vertical canals, whilst the response as regards the posterior vertical canals was about normal.

Caloric reaction: 600 ccm. of water at 18 degrees, applied to left ear, resulted in very slight nystagmus, without giddiness and without disturbance of the pointing reaction; applied to the right ear in the same way, very slight but definite nystagmus, without vertigo, but with typical though slight by-pointing.

Galvanic reactions: Kathode left; anode on the right temple; no nystagmus with 20 milliamperes.

Anode left: Kathode on right temple; rotation nystagmus to right with 5 milliamperes.

Kathode right: Anode on the right temple; rotation nystagmus to right with 10 milliamperes.

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Anode right: Kathode on left temple; rotation nystagmus to left with 20 milliamperes.

Patient was a non-smoker and non-drinker; Wassermann reaction negative; oculist and physician reported normal systems "except arteriosclerosis of the aorta."

The symptoms were much improved with iodide of potassium up till the end of the year, but on the 16th February 1926 he reported that for the last eight days he had suffered with giddiness when he lay on the left side; no tinnitus.

On turning the patient on the left side, a rotatory nystagmus to the left, of the third degree, was at once induced, which lasted for one minute; on turning on the right side, no nystagmus. If turned to the prone position, there was no nystagmus unless the head was turned to the left, when a rotatory nystagmus of the third degree and vertigo appeared, but no nystagmus could be induced if head was turned to the right in this position.

While lying on the back, if the head was turned to the left, rotation nystagmus of the third degree to the left occurred, but no nystagmus was induced if the head was turned to the right in this position. If from the prone position he was turned to the left side, a rotation nystagmus to the right of the third degree occurred, but no nystagmus was induced if he was turned to the right side.

Hearing range and functional tests remained as at the first examination; slight spontaneous rotatory nystagmus to the right and left; no spontaneous error in pointing; no fistula symptom.

Rotation tests showed a definite hyposensitive condition on each side, as did also the caloric tests, while the galvanic tests now gave a weak typical nystagmus in each direction, with 15 milliamperes, in accordance with the normal position of the kathode.

Ruttin considered that this could not be a nystagmus due to position, as it was really only on movement that these phenomena were induced, and then the nystagmus was only transient. As regards the particular part of the reflex arc responsible for the nystagmus, he freely admitted he could offer no definite suggestion, but was inclined to regard it as of central origin, a view which was admitted generally in the discussion which followed.

Osteoma of the Temporal Bone—E. Ruttin.—Woman, aged 35, applied for relief on 27th March 1926. Previously perfectly well, she had noticed for the last year a gradual deafness and tinnitus on both sides with right-sided headache, vomiting, and vertigo. The attacks of vertigo were usually short, lasting about half an hour, during which, however, there was neither vomiting nor discomfort.

On the right side, behind and above the auricle, was a hard bony swelling about two fingers in breadth, covered with normal but only

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slightly mobile skin. Tympanic membranes were normal. X-ray examination confirmed the extent and consistency of the tumour.

Weber was not lateralised: conversation voice, R. 3 metres, L. 2 metres: whisper, R. $\frac{1}{2}$ metre, L. $\frac{1}{4}$ metre.

Bone conduction shortened on both sides; no spontaneous nystagmus; no fistula symptom, and no by-pointing.

Rotation reaction, symmetrical and normal, though hyposensitive, but associated with extreme giddiness, and the vertical nystagmus so induced, equal in point of time both upwards and downwards.

Caloric reaction, about normal on each side, accompanied with slight giddiness and typical by-pointing.

Ruttin considered the condition to be very rare, and drew attention to the fact that the functional tests indicated deafness of the combined middle and inner ear types on both sides, suggesting that very possibly other parts of the bony ear were involved in the growth.

28th June 1926.

(*Monatschr. f. Ohrenheilkunde*, August 1926.)

Central Nystagmus—E. RUTTIN.—Male, aged 38 years, attended on the 21st June 1926, complaining of discharge from both ears for a long time, but lately the discharge from the left side had become much more profuse and was accompanied by giddiness and headache.

There was a rotatory nystagmus to the left which at first sight was regarded as a vestibular nystagmus of the third degree. More accurate examination, however, revealed a marked rotatory nystagmus to the left on looking to the left, which, on looking directly forward, disappeared, but on looking to the right, was again present although rather weaker, while its "direction" was the same as when looking to the left.

Ruttin usually estimated nystagmus from the movement of the upper pole of the eye-ball, which is more pronounced than the movement of the lower pole. In this case, however, on looking to the right, the chief movement took place at the lower pole. He submitted that nystagmus of this character having the same "direction" on looking either to the right or to the left, and which disappeared on looking directly forward, was always central in origin. This patient he remembered already to have seen ten years ago, when he performed a radical operation on the left side. (Some time before that date, a radical operation had also been performed on the right side.) Ten years ago he had raised the question as to whether the nystagmus was of peripheral or central origin, and had come to the conclusion that it was central. He could also remember that the character of the nystagmus had not changed since then. At present, there was a well-healed operation cavity on the right side, while on the left there was still some secretion. There was no fistula symptom, and no spontaneous by-pointing.

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Abstracts

Conversation voice, L. 1 metre; R. only shout close to ear. Weber lateralised to left; Rinné negative both sides; Bone conduction shortened on both sides.

On rotation, with the head erect or bending forward, no reaction was obtained in either direction, and these tests were only accompanied by very slight vertigo and falling tendency. On the other hand, rotation to the right with the head on the right shoulder, induced a downward directed nystagmus lasting 5 seconds, with marked vertigo and typical falling tendency; while rotation to the right, with the head on the left shoulder, induced an upward directed nystagmus lasting 4 seconds, with again marked vertigo and typical falling tendency.

Caloric reaction, with water at 18° on either side, induced a nystagmus which lasted about 1 minute 40 seconds, accompanied with giddiness, typical by-pointing, and typical falling tendency. The exact location of the cause of this nystagmus was difficult to suggest. The Wassermann reaction, oculist's and physician's report were negative, and as the character of the nystagmus as stated above had remained unaltered for ten years, it could not be attributed to such systemic diseases as multiple sclerosis, syringomyelia, or tabes. He suggested that the case was similar to one described by Fremmel and that the focus of infection was in the vestibular nucleus.

ABSTRACTS

THE EAR.

A Contribution to the Study of the Importance of the Auricle in Man. S. KOMPAGNÉETZ. LÈKATÉRINOSLAW. (*Acta Oto-Laryngologica*, March 1926, Vol. ix., Fasc. 1-2.)

After a detailed review of the literature on the subject the author describes a case of total loss of the auricle in a peasant aged 48, which occurred as the result of an accident. The external auditory meatus which remained was about the size of a pin head. After carrying out certain tests with a series of forks of the Bezold-Edelmann series he came to the following conclusions:

1. Although the auricle of man may be a rudimentary organ, yet it possesses a certain acoustic value.
2. The auricle exerts an influence on the perception of deep tones.
3. The cartilage of the auricle conduces to the better transmission of sounds of a pitch above g^3.
4. The auricle plays a certain part in the determination of the direction of sound.

H. V. FORSTER.

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