The treatment employed was liquid paraffin by the mouth, non-residue diet, mainly fluid, and enemata. This latter produced soft and watery results, with several hard, stale, dark lumps, very few being any larger than walnuts. His progress appeared to be quite satisfactory, and although the lump was still palpable, it was considerably smaller.

As in the first case, everybody concerned was quite pleased with his condition, and we thought we were out of the wood. On the sixth day, however, I received an urgent call about 10 p.m. owing to a sudden attack of very severe pain, on the left side. He was then partially collapsed, cyanosed, and sweating; his pulse was poor. He stated that he had never endured such "terrible" pain before in his life. The tenderness over the lump was very marked, and he could hardly stand the lightest pressure.

A consulting surgeon was called in the same evening, and he considered that there was a possibility of a bowel perforation. He expressed a wish to have the opinion of another surgeon, and when the latter arrived later in the evening, they both considered that, at any rate, that evening the patient was in too bad a state to have his abdomen opened. Here it should be stated that he was a difficult subject to examine, owing to his build and to the extreme tenderness of the lump. Morphine was given hypodermically, and after a short time the condition became much better. Next morning—that is, the seventh day—he was fit enough to be removed to a nursing home, to be kept under observation.

Owing to the improved general condition it was considered possible to perform a laparotomy, should this be deemed necessary. One surgeon was inclined to take the risk, but the other thought the risk was too great, and, strange as it may seem, the consulting physician was rather in favour of the operation. A third surgeon was consulted, and it was decided to give the patient a barium enema and to take an x-ray by means of a portable apparatus. The x-ray revealed the presence, as in the former case, of several small diverticula, with a marked spasm of the descending colon.

A super-consultation was then held, at which were present three consulting surgeons, a consulting physician, the radiologist, and the G.P.! The result of this was that everybody agreed that if there was a real obstruction, then the only operation possible was one to relieve the obstruction by an opening into the bowel above this area. This would mean a colostomy of the transverse colon, and we came to the unanimous conclusion that this would be exposing the patient to too great a risk. Furthermore, the patient's condition was better, and there was now very little pain or tenderness, though the bowels were failing to function.

At this moment in the consultation a very dramatic interruption occurred. There was a tap at the door and the sister of the nursing home came in with a specimen glass full of a fluid that looked like blood. It actually was almost pure blood, and in fact was haematuria. The case was now more obscure, but one of the experts took a very serious view and expressed the opinion that the haematuria must be of toxic origin and that therefore the outlook was very grave; nevertheless, we still stood by our opinion that no operation was possible. The problem, however, was completely cleared up next day.

When I saw the patient next morning he seemed very much better. He had got rid of the barium and with it he had passed a good deal of faecal matter, but, more than this, he made a very important statement—namely, that when passing water that morning he had heard a little "tinkle." To cut a long story short, he had passed a small stone. Suddenly the case became clear. The severe attack of pain in the left side which occurred on the evening of the sixth day was actually an attack of renal colic due to the passing of a small stone down the ureter. The lifting about of the patient for the taking of the x-rays had been enough most probably to move the stone on over the brim of the pelvis into the bladder. This caused the haemorrhage which the patient got rid of a little later. The passing of the stone per urethram the following day completed the picture.

AURAL VERTIGO*

BY

W. S. THACKER NEVILLE, M.D.DUB., F.R.C.S.ED.

HARROGATE

We recognize our position in space by means of the muscle senses in the soles of the feet, by our eyes, and by our semicircular canals. Labyrinthine vertigo consists in a false sense of movement of the patient or of his surroundings. The movement may be in a linear, rotary, or vertical direction, and is accompanied by nausea, vomiting, pallor, sweating, and sometimes diarrhoea. Sensations of forward and backward movements are not seen, but if present are in favour of a neurasthenic or cerebral vascular condition. Besides this false sense of movement the patient may really fall, or may be flung out of his chair, or have a sensation of being pushed, yet he never loses consciousness. The onset of these sensations is sudden; they last only a short time, and are followed by a feeling of unsteadiness on the legs.

The function of the labyrinth may be interfered with if there is a lesion in the vestibular tracts in the cerebellum or in the vestibular nerve, or if these nerve endings are affected by a toxin, or the blood supply of the semicircular canals is suddenly increased or decreased, or the fluid in those canals is exposed to pressure or toxins.

Lesions in Vestibular Tracts and Vestibular Nerve

The commonest cause of a lesion which affects the vestibular nerve tracts in the cerebellum is thrombosis of the inferior cerebellar artery, in which there is a sudden onset of vertigo and nystagmus to the affected side associated with ocular sympathetic paralysis and paresis of the soft palate and vocal cord and disturbances of sensation. A vascular lesion in the lateral part of the pons may also, according to Brain, produce vertigo, deafness, and tinnitus associated with paralysis of the seventh and eighth nerves and disturbances of sensation.

The vestibular nerve tracts may also be affected in disseminated sclerosis, in which there is vertigo without loss of hearing. The vertigo is usually accompanied by an intention tremor, absence of abdominal reflexes, and extensor plantar responses with possibly optic atrophy. The nerve tracts may also be disorganized by a head injury. In such cases there is tinnitus and vertigo; the vertigo usually tends to become less, though in some cases it, like the tinnitus, persists for a very long time. Vertigo may be the aura of an onset of *petit mal*, but it can easily be differentiated from aural vertigo, since in the latter there is never loss of consciousness. Vertigo may also occur in neurotic individuals; it consists in a feeling of the legs giving way, and is accompanied by intense anxiety and palpitation which may, according to Russell Brain, be due to a fear of heart disease.

The commonest lesion of the vestibular nerve itself is a tumour of the eighth nerve. The patient complains of vertigo, tinnitus, and deafness, and the striking feature is that there is anaesthesia of the cheek and later fascial nerve paralysis. (Anaesthesia of the cheek may be preceded by anaesthesia of the cornea.) Examination of the labyrinth shows a complete loss of function with, according to Eagleton, a loss of function of the vertical canal on the opposite side.

The Semicircular Canals in Causation of Vertigo

In an aurist's experience the semicircular canals themselves are the commonest cause of vertigo. These canals are surrounded by a network of blood vessels, and contain

* Read before the Yorkshire Branch of the British Medical Association, September, 1934.

fluid and nerve endings. On the peripheral aspect of the canals is the middle ear, which communicates with the canals via the oval and round windows.

Just as we can get changes in the walls of the blood vessels of the eyes, so we believe we can get similar arteriosclerotic changes with or without haemorrhages in the blood vessels of the labyrinth, which would account for the vertigo that occurs in elderly people on stooping or turning their heads. These blood vessels may undergo spasm with loss of hearing, then relaxation followed by tinnitus, giddiness, and return of hearing, and it is a question whether such cases could not be cured by stripping the sympathetic nerves of the internal carotid artery, or by removing the superior sympathetic ganglion. Russell Brain considers that spasm of these arteries also accounts for the vertigo that occurs in sufferers from migraine.

The fluid in the canal can produce vertigo when it is moved, as when one performs the rotation or caloric tests, or is on a ship. It is said that to avoid sea-sickness it is best to lie flat on the back. This fluid may also be affected by toxins; thus in acute otitis media there may be vertigo and nystagmus to the affected ear due to absorption of toxin stimulating the nerve endings, or, if the infection is more severe, destruction of the nerve endings and consequently a nystagmus to the opposite side. In the case of the nystagmus to the same side, suction applied to the Eustachian tube or a paracentesis of the tympanic membrane will allow the toxic fluid to escape, or in severer cases a mastoid operation will be necessary. When there is nystagmus to the opposite side a serous or suppurative labyrinthitis must be diagnosed. As long as any hearing is present we diagnose serous labyrinthitis and do not operate, but when all hearing has gone and the hot caloric test is incapable of affecting the nystagmus we are forced to diagnose the suppurative condition. If the suppurative labyrinthitis is secondary to an otitis media I do not operate unless the signs of labyrinthitis increase instead of decrease, or unless meningitis appears, but if it follows an operation such as the removal of a polypus or a mastoid, I then perform a labyrinthectomy at once.

Besides reaching the semicircular canals directly from the middle ear as just described, toxins may reach the canals via the blood stream, as in the case of those from the intestine or from alcohol, tobacco, or a septic focus; thus one patient drove his car from side to side of the street, but when his tonsils were removed his vertigo disappeared.

Displacement of the Stapes

Another cause of vertigo is displacement of the stapes, which may be due to an oversecretion of fluid in the semicircular canals. This is considered by Mygind and Dederding to be the commonest cause of the kind of aural vertigo which is usually termed Ménière's disease. This water-logging of the labyrinth occurs in those who have faulty water metabolism; such patients are usually easily recognized, as they show a loss of low notes and absence of or decreased bone conduction, deafness which varies from day to day, an increase in weight, and a thickening of the subcutaneous tissues. However, I would not diagnose a patient as water-logged without giving 1,000 c.cm. of fluid, and seeing how much fluid the patient had passed, and how much he or she had increased in weight after an interval of four hours. The increase in weight equals the weight of the retained fluid, and thus, by weighing the patient before the fluid is taken and at the end of four hours, the amount of fluid retained is estimated. Such patients are cured by dehydration with salyrgan, a no-salt diet, and extreme limitation of fluid.

An attack of aural vertigo in which the patient has nystagmus and vomiting may be arrested by an injection of bulbo-capnine. This drug, orally administered, is also useful in some cases to ward off attacks.

Another cause of displacement of the stapes is blockage of the Eustachian tube, with consequent absorption of air in the middle ear. This occurs in inflammatory states of the Eustachian tube or in swelling of the mucous membrane due to water-logging. Such patients are cured by reducing the swelling in the Eustachian tube and by catheterization. To reduce the swelling in the Eustachian tube a nasal operation may be necessary.

At times no cause can be discovered to account for the presence of aural vertigo, and in those cases the best treatment is Mollison's—that is, destruction of the nerve endings by injecting alcohol into an opening made in one of the semicircular canals. This I have done on three occasions. Before adopting this treatment I used to destroy the cochlea and semicircular canals by a labyrinthectomy. The injection of alcohol, however, is easier, and exposes the patient to less trauma. Brain specialists such as Dandy, Cairns, and Dott cure this form of vertigo by dividing the seventh nerve, and lately Dandy has been successful in dividing the vestibular branch alone, and so retaining the remnant of hearing that is often present in these patients.

BIBLIOGRAPHY

- Brain, Russell: *Proc. Roy. Soc. Med.*, 1933, xxvii, 307.
Cairns, H., and Brain, Russell: *Lancet*, 1933, i, 946.
Dandy, Walter E.: *Arch. of Otolaryngol.*, 1934, xx, 1.
Dederding, Dida: *Ibid.*, 1929, Supplementum xi.
Mollison, W. M.: *Proc. Roy. Soc. Med.*, 1930, xxiv, 970.
Mygind, S. H.: *Ibid.*, 1929, xiii, 393.
Neville, W. S. Thacker: *British Medical Journal*, 1931, ii, 54.
Portman, G.: *Proc. Roy. Soc. Med.*, 1928, xxi, 97.
Idem: *Journ. Laryngol. and Otol.*, 1928, xliii, 860.
Symonds, C. P.: *Lancet*, 1933, ii.
Von Sture Berggren: *Acta Oto-laryngol.*, 1929, xiii, 233.

TONSILLECTOMY WITH LOCAL ANAESTHESIA

A REVIEW BASED ON 500 CASES

BY

GEOFFREY MOREY, M.B., B.S.ADELAIDE, D.L.O.

JUNIOR SURGEON, EYE AND EAR HOSPITAL, SHREWSBURY

For some reason unknown to me local tonsillectomy has never received very favourable consideration in England; yet the mere fact that this is almost the only method employed in many of the large Continental clinics should be sufficient evidence that it is definitely worthy of greater consideration than it has hitherto received. Having just completed a series of five hundred cases in patients whose ages ranged from 16 to 74, I feel that a short description of the technique may not be out of place, since many advantages are claimed over the more universal dissection under general anaesthesia. The advantages of using a local anaesthetic are that the operation is considerably more speedy without there being any sacrifice of efficiency; that there is a minimum amount of bleeding (often there is literally none at all); that there is no vomiting; and that there is a cleaner dissection. The patient suffers no pain and extremely little discomfort.

Technique

The nurse sprays the patient's throat several times with 10 per cent. cocaine and adrenaline, and then the injection, which is the most important part of the operation, is commenced. It should be stressed that the quantity of novocain solution injected is even more important than its strength. About 30 to 40 c.cm. of a 1/2 per cent. solution is recommended.