

noises. Taking these *en masse*—apart from the types—twenty-six patients complained of tinnitus, and of these seventeen were improved. In one case the noise was not heard in the left ear for a period of six weeks, when it recurred; in another patient there has been no tinnitus for four months.

I am aware that the results obtained are rather better than those got by other observers, but I would urge that there is something in how the current is applied. I have the less hesitancy in emphasising this point as the electrical treatment was entirely carried out by Dr. Riddell, and was in accordance with his ideas.

As is known, the common method of applying the current is by means of the *effleuve* (or spray). This was the method adopted in our earlier cases, but it was found unsatisfactory. Dr. Riddell then introduced a method which, so far as we know, has not been used in ear work—by means of a condenser electrode placed in each ear. It is probable that in this way the current is more completely concentrated on the ears. This latter method gave better results. The case of sclerosis which I have already quoted was first tried by the *effleuve* without any effect, but after eight applications with the condenser electrode in the ears the noise ceased. Other patients in like manner affirmed that it was the method which did them most good.

The treatment is purely empirical, but I think it is worth a trial on the lines on which Dr. Riddell worked.

In conclusion I have to thank Dr. Riddell for the interest he has taken in the investigation.

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### **SUPPURATIVE DISEASE OF THE TEMPORAL BONE, WITH THE PRINCIPAL EXTENSION INTO THE PETROUS PORTION.<sup>1</sup>**

BY RICHARD LAKE, F.R.C.S.ENG.

THE patient, a lad of nineteen, presented himself at the hospital, suffering from slight discharge from the left ear and attacks of vertigo.

*Previous history.*—The history he gave was that nine years ago he was struck in the left ear with a tennis ball. A week or so afterwards he had an attack of influenza, with severe pain in his left mastoid, but he states that at no time did he have any dis-

<sup>1</sup> Communicated to the Otological Society of the United Kingdom, May 21, 1904.

charge from the ear. The pain continued for four months, always coming on about eleven o'clock at night, and lasting for about an hour, gradually increasing in severity. He became unconscious one night, and was operated on the next by Mr. Stanley Boyd, who has been kind enough to give me the following particulars:

Seen with Dr. Michie December 3, 1903. Had suppurative otitis media two months ago (side?). Membrane perforated; discharge; got better for a month. After a tram ride severe pain returned, with fever and swelling behind ear. This swelling varied. Pain, fever, and loss of sleep said to have rendered him weak and anæmic. Has had one, perhaps more, rigors.

I found him very pale and weak. Little discharge from meatus; no swelling over mastoid. Swelling and tenderness below ear, where a gland is enlarged. No signs of cerebral abscess.

Pinna turned forward by usual incision. A little pus escaped. Collection probably drained imperfectly into external auditory canal. Antrum opened: it was large and lay low. It was cleared out, iodoformed and plugged. I did not see the boy again.—S. BOYD.

*Present state* (1904).—The operation wound healed satisfactorily, and the boy was relieved of his pain. He has been suffering with attacks of vertigo for some months.

On examination the external meatus was stenosed about half an inch down, an orifice about the size of a pin-head only being left, from which exuded a thin and slightly offensive discharge.

He was admitted into the hospital, and on March 1 put under an anæsthetic. On reflecting the ear, the bone was found to be as dense as I have ever seen it, and showed traces of the old operation. When one arrived at the level of the stenosis, one found that the bony canal itself was much stenosed, and that the hole in the membranous meatus was plugged by a dense mass of inspissated pus and epithelium. The extreme density of the bone rendered it easier now to have resource to the burr. The bony meatus was cut out to its right level below, and the radical mastoid operation performed as rapidly as possible. The antrum itself was extremely small. The whole of its cavity, and that of the middle ear, was full of cholesteatomatous material, and a large sinus was found leading deep into the petrous bone. The diseased bone in this region was rapidly cleared away, and as a result the upper surface of the external semicircular canal was exposed in its entirety, the major portion of the posterior canal also; the superior, however, was not brought into view, the external semicircular canal having the appearance of being supported on a pillar of bone, which contained the facial nerve. The bony canals were almost of a dazzling whiteness.

The wound was treated in the ordinary way and grafted on

the fifteenth day, the condition of the wound showing no features of interest. The case, however, is one of considerable interest, as being one of a class of cases which seem to form a link between intra-labyrinthine suppuration and necrosis of the labyrinth; for had this case proceeded, unrelieved by operative measures, one of two endings must have followed—either the pressure of the cholesteatomata would have caused an erosion, and eventually penetration of one of the semicircular canals, thereby setting up an intra-labyrinthine suppuration, or the infective osteitis would have invaded and destroyed the cancellous bone surrounding the labyrinth, thereby cutting off its nutrition, and necrosis of the labyrinth would have followed. Or even a third local condition might have followed, which would have been a combination of these two. Cases somewhat similar have been recorded both on the Continent and in America.

It may be interesting to mention here in this connection that it was impossible to see the foramen ovale even when all hæmorrhage was controlled and the parts quite dry.

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### **A CASE OF TINNITUS AND VERTIGO TREATED BY DIVISION OF THE AUDITORY NERVE.**

By R. H. PARRY, F.R.C.S.ENG.,

Surgeon to the Victoria Infirmary, and Surgeon to the Royal Hospital for Sick Children, Glasgow.

S. D——, aged thirty, engineer, was recommended for treatment in February, 1902, by Dr. Jones of Glasgow, who in his letter expressed a hope that something might be done by operation to relieve his condition, as all other forms of treatment had failed.

The patient stated that he had enjoyed excellent health until six years ago, when one day he was suddenly seized with giddiness while he was lighting his pipe. He was not far from his house at the time and managed to stagger to it. While the attack was on him everything seemed to be turning round. During the next six months he had several such attacks, and he had finally to give up work for two years. The giddiness became more or less constant, affecting him more particularly when walking. He improved somewhat towards the end of that period, and was able to resume work and to remain at it for two years.

A year ago he was again obliged to give up work owing to the frequency of the attacks of vertigo. He complained of noises in