SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF OTOLOGY

May 3rd, 1962

Discussion on Polytomography of the Temporal Bone

DR. JAMES BULL said he first of all wished to congratulate the Speakers on the excellent work they had been doing, and confessed that all he had to say was tinged with envy and jealousy as he had hoped, for the last ten years, to obtain a Massiot Polytome. Unfortunately, the apparatus was too expensive for most hospitals. Dr. Ross had pointed out that the machine cost £8,000 in England (including import duty). This, however, was not the end of the story, for it requires a rather large room to be housed, and very few X-ray Departments have spare radiographic rooms and, if they do, there is great competition for the type of apparatus which is to be installed. The Speakers had also made clear how time-consuming these examinations were and demanded the full-time attention of one Radiographer. They also took up much more of a Radiologist's time than most examinations and, for these various reasons, a hospital had to be rich to afford such equipment. As Mr. Angell James had pointed out, there were fifty such apparatuses in France, and only two in England, both at Provincial Universities. It would seem that the London hospitals cannot afford such expensive equipment.

Regarding the merits of this apparatus against conventional tomographic machines, Dr. Bull supposed that the main advantages gained were in the better demonstration of the ossicles and, apparently, the unfailingly beautiful demonstration of the facial canal. This was most impressive, and Dr. Bull's experience was that this canal was very difficult to demonstrate with conventional tomographic machines. He wanted to know how well, and how frequently, fractures of the petrous bones could be demonstrated with the Polytome. One fracture shown during the course of the morning could have been seen by using any tomographic equipment. Finally, he wondered how often the Polytome would demonstrate fractures of the ethmoid which one met in association with C.S.F. rhinorrhœa. His experience with these cases was that it was exceedingly difficult to demonstrate these fractures with conventional equipment.

DR. I. SIMSON HALL said he had had the advantage of tomography of this type in Edinburgh for some time, through the co-operation of Dr. Eric Samuel, and he had come to rely upon tomography of the temporal bone as a very important aid in accurate diagnosis. It was pre-eminently useful, as had been pointed out by speakers, in cases of malformation of the ear, in order to determine the approach to the middle ear and the presence or absence or any air-containing cavity. He had also found it of great value in planning operations associated with

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facial paralysis as the result of head injuries. These cases had been referred by the neurosurgical department for exploration, and occasionally tomography was able to point specifically to the area of injury and so shorten and simplify treatment to a very great extent.

THE SCOTTISH OTOLARYNGOLOGICAL SOCIETY

THE EIGHTY-FIFTH MEETING OF THE SOCIETY WAS HELD AT THE ROYAL INFIRMARY, EDINBURGH, ON SATURDAY, NOVEMBER 24TH, 1962. THE PRESIDENT DR. J. B. HUTCHISON WAS IN THE CHAIR.

Cases were presented by Dr. Brownlie Smith, Dr. R. B. Lumsden, Dr. J. M. Farquharson, Dr. J. F. Birrell and Dr. G. D. McDowall. The following cases gave rise to discussion.

Case II. Chronic Suppurative Otitis Media.—Dr. Brownlie Smith. The patient, aged 30 years, had a history of right otorrhœa with slight deafness for nine years. A polyp arising from a posterior perforation was removed. Four months later suction clearance of the middle ear was performed. The ossicular chain was seen to be intact. The ear became dry and following the application of an oil silk patch the perforation healed. A hearing gain of eight decibels was recorded.

Dr. Dixon asked if Dr. Smith had done any work on the posterior annulus with a burr; he had found it necessary in a number of cases of suction clearance. Dr. Smith replied that he had not reduced the posterior annulus.

Dr. Thomson said that Professor Verhoeven had emphasized the necessity for microscopic examination of the ears and the careful removal of all squamous epithelium from the middle ear.

Dr. Lumsden remarked that treatment depended on the ability of the patient to attend for inspection. He wondered if this surgery was adequate unless the patients were able to attend regularly for post-operative observation.

Case IV. Left Facial Paralysis. Bell's Palsy. Dr. Brownlie Smith. This lady developed a severe pain in her left ear on July 26th, 1962 followed two days later by a facial paralysis. There was altered sensation on the left side of the tongue and left hypercusis. Salivation and lacrimation were normal. There was no deafness and no sign of vesicles. X-ray of mastoids was normal and after twenty-one days a strength duration curve revealed reaction of degeneration. On October 10th a left facial nerve decompression was carried out.

Dr. Smith said he had shown this case because of the difficulty in deciding at what stage a decompression of the facial nerve should be carried out. Many people thought this should be done early, in fact, in the first two weeks, and it was well-known that the results of very early decompression are very much better than after a long period. The operation was credited with success in those cases which would have recovered naturally. This patient had had very severe pain over the mastoid and, where there is pain, Kettel recommended that these cases should be decompressed immediately. When the sheath of this patient's

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nerve was incised the nerve itself looked like a mass of jelly. Now, six weeks after the operation, he thought some return of movement was beginning, especially at the corner of her mouth.

Dr. Munro asked what the object of this operation had been. Was it to prevent degeneration or to encourage re-generation? Had Dr. Smith carried out an electro-myograph, which could give evidence of re-generation weeks before there was any clinical re-generation? If he must operate, why did he choose to operate on this nerve two-and-a-half months after the onset of the paralysis? They knew that the facial nerve only regenerated about one inch per month. If he was going on the strength duration curve, he should have operated on it immediately after this had been demonstrated. Why had he not waited four or five months before operating? The questioner thought, however, that in Dr. Smith's skilful hands, the operation had not interfered with the normal process of the regeneration of the nerve.

Dr. Dixon said that from what Dr. Smith had done in this difficult case, he would suggest that electrical tests were very unreliable. One must wait for the nerve to grow out from proximal to the lesion, in fact, recovery seemed to start very soon after the operation.

Dr. Venters said he used to carry out this operation. It was not an easy one to do, and he was never satisfied that the results were any better than waiting for an ordinary recovery. This had been discussed on many occasions at other Clinical Meetings.

Dr. Maran said that the reason why they did not do electromyography was that the strength duration curve and the clinical findings showed that the nerve was not conducting at all.

Dr. Donaldson said that after the operation there had been definite improvement and this showed that there had been a response to operation.

Dr. Smith said one did not operate on the facial nerve with any great avidity. He was quite sure that Kettel would have advised immediate operation in a case of this nature, because it would not normally recover. He had waited three months. He agreed with Dr. Munro that one can quite easily produce a permanent paralysis with no recovery at all. Only when they decided in the Department that this was a case which would not recover without decompression, did they decide to operate and, at operation, when the sheath of the nerve was incised, it was observed that the centre of the nerve was a jelly-like mass. This finding suggested that the decision to operate was a correct decision.

Case X. Otosclerosis. Stapes exploration. Perilymph leak. Dr. Lumsden.

Tympanotomy performed on this patient on 14.4.62 revealed anterior fixation of the footplate. Mobilization was effected by direct needling of the anterior window margin and was accompanied by a profuse flow of perilymph which continued for two days.

Dr. Lumsden, in presenting this case, observed that if stapedectomy had been carried out it would have been impossible to place a graft and prosthesis because of the excessive flow of fluid. He invited opinions regarding the etiology and treatment of this condition.

Dr. Hutchison remarked that this condition had been mentioned by others, who, so far as he knew, did not attempt any further surgery.

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Dr. Russell suggested doing a lumbar puncture on a future occasion to see whether it had any effect on controlling the flow of perilymph.

Cases XI.—XV., were presented by Dr. Lumsden to demonstrate the use of Ultrasound in the treatment of Ménière's Disease.

Dr. Lumsden said that this respresentative group of cases of Ménière's Disease illustrated the variety of problems in connection with this method of treatment.

Case XI, could be regarded as a satisfactory one, but *Case XII*, an early one to be treated by this method, received inadequate dosage on the first occasion. His condition has been very satisfactory since a second application.

Case XIII is the only case to which bilateral treatment has been applied. She was a clear cut example of the second ear becoming involved quite a time after the first operation. The extraordinary thing is her ability to get about, but she has a little difficulty in the dark.

Case XIV illustrates the accident of facial paralysis with complete recovery. Facial paralysis is the main problem to be considered at the present time. In the series of sixty-six patients there have been eight cases of paralysis all of which have recovered over varying periods up to six months.

Case XV was a complete failure in spite of two treatments. At a third operation when labyrinthectomy was performed an unusually thick bony wall of the lateral canal was found. Since this patient's operation the technique has been modified, the semi-circular canal wall being thinned as in a fenestration operation, so that the risk of reflection of ultrasound is minimized. Of the twenty-two cases reported in 1958 the results have remained more or less as they were eighteen months after treatment. Fifteen of the twenty-two remain completely free from vertigo. Four have attacks not sufficiently severe to warrant repeating the treatment.

Dr. Hutchison referred to a patient whom he had sent to Dr. Lumsden a short time ago. Before Ultrasonic treatment she had required prolonged hospital treatment and remained unsteady. Now she was walking about and feeling extremely well.

Case XXVI. Laryngeal Stridor. Dr. Birrell.

H.M. now aged four years was referred to hospital because of a rough inspiratory stridor since birth with episodes of dyspnœa at night. Stridor was loud enough to keep the parents awake and could be heard throughout the hospital. Laryngoscopy on 21.8.61 showed the vocal cords near the midline. An endotracheal tube could not be passed. Further laryngoscopy on 16.10.61 revealed a solid subglottic obstruction involving nearly three quarters of the glottic space. Two weeks after tracheostomy was performed, an abnormal artery being found crossing the trachea at the level of fourth or fifth ring. The larynx was re-examined and the hard swelling was again observed. A presumptive diagnosis was made of chondroma of the cricoid cartilage.

Laryngofissure performed on 11.12.61 revealed a free passage of normal size through the cricoid ring. It was then considered that the obstruction was due to malposition of thyroid cartilage on cricoid cartilage or hypertrophied cricoid

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cartilage. Subsequent examinations have shown a very slight improvement in the lumen.

Dr. Birrell asked for suggestions as to the further treatment of this child. An angiograph had been done but the report had not yet been received. A Barium swallow had shown no œsophageal abnormality. He had contemplated division of the abnormal artery or division of the anterior ring of the cricoid bone with the insertion of a plastic obturator which might have the effect of correcting a malposition of the cartilages.

Dr. Thomson reported a similar case with a vascular complication. A child of six weeks who was admitted to hospital with a very marked stridor accentuated by a respiratory infection. Tracheotomy was done and laryngoscopy showed a hard swelling apparently arising from the anterior wall of the larynx. Biopsy was unsuccessful because of the solid nature of the swelling. No further measures were attempted and subsequent examinations have shown a much wider laryngeal aperture.

Dr. Farquharson said that he had seen a similar hard subglottic swelling, which he thought was a cricoid chondroma, in a man who had had a tracheotomy for thirty years following a thyroid operation. Laryngofissure revealed a normal cricoid but the upper part of the trachea was acutely angulated. The patient had a very marked kyphosis. A Portex tube was put in to restore the normal angulation of the trachea and the tracheotomy was closed. The result was very satisfactory for some three weeks, after which attacks of stridor recommenced. On re-opening the tracheotomy it was found that the tracheal rings, distal to it and the Portex tube, had collapsed. It was considered necessary to give him a permanent very low tracheostomy as he was not fit for further surgery.

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