SOCIETIES' PROCEEDINGS.

BRITISH MEDICAL ASSOCIATION.

Meeting at Aberdeen, July, 1914.

DR. H. LAMBERT LACK, *President, in the Chair.*

Abstract Report by MR. HAROLD WHALE.

(*Continued from p.* 538.)

Discussion on Hæmorrhage in Tonsil Operations.[1]

Sir W. MILLIGAN asked Dr. Hill to define exactly what stump there was left after a complete enucleation for the hæmostatic blade of his instrument to grasp and crush. He looked upon a complete enucleation as leaving nothing in the faucial isthmus than that portion of the superior constriction of the pharynx which formed its floor.

Dr. MACKENZIE BOOTH asked Dr. Hill for further details regarding the case of hæmophilia in which he had operated. According to Dr. Bullock true hæmophilia is one of the rarest conditions, and probably in such a condition excision of the tonsil should not be undertaken. Dr. Booth deprecated any unnecessary complication in tonsil guillotine, simplicity in an instrument in such general use being very desirable.

Dr. WATSON-WILLIAMS said the method of utilising the grasp in these tonsillectomes, which Whillis had introduced in this country, enabled one to use the crushing instruments with success. Mr. O'Malley's instrument had been improved by the adoption of this handle instead of his original thumb-sliding blade, and with his leaded slot undoubtedly went far to crush any stump and to arrest hæmorrhage.

Mr. JOHN F. O'MALLEY congratulated Drs. Hill and Elphick on this very ingenious modification of Ballenger's instrument. It promised to be effective in diminishing the amount of hæmorrhage during operation. He had estimated the hæmorrhage in 415 cases, his conclusions being supported by similar observations in over 2000 cases in all, and had found the average loss to be a fraction over 3 drm. per patient at the time of operation. The operations performed were complete guillotine enucleations by the instrument which bears his name. In this series he had only had one case of serious bleeding, which set in twenty-four hours after operation, but was arrested spontaneously by the time that the child reached the hospital. The perfect guillotine for the purposes of tonsil enucleation must be capable of enucleating cleanly and completely any compact mass of tonsillar tissue with its capsule, which needs removal, with a slight or moderate amount of hæmorrhage, and easy to manipulate by any surgeon of average dexterity. A single-bladed instrument answered all these purposes very efficiently. In the attempt to carry out this ideal, he gave the following details of his instrument, which he considered essential and always desired to insist upon in construction: (1) A thin ring, about $\frac{1}{16}$ in. on cross section and forged in one piece. (2) The upper margin of the ring must be square edged and not bevelled. (3) A recess in the inner aspect of the ring filled flush with lead to receive the thrust of the blade. (4) A slightly dulled blade.

[1] For introductory paper see p. 545.

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(5) A D-shaped opening. (6) A shaft and blade, 6½ in. long, the handle joining the shaft at an obtuse angle. (7) When the blade is driven home the two bars of the handle must not approximate closely, or it is impossible to grasp with precision, and the rotation movement at the end of the operation is more difficult to perform. The thin ring gives strength without bulk, and facilitates its insertion on the deep aspect of the gland. This is a point of considerable importance when dealing with tonsils fixed by inflammatory adhesions and also those commonly described as flat. The square (non-bevelled) edge of the opening is capable of raising a fold on a flat skin or mucous surface, and therefore grips a fixed or flat tonsil and prevents slipping when bringing it forward to the anterior faucial pillar. The leaded recess is a factor in hæmostasis, by insuring the blunt severance of the tonsillar vessels and attachments, this effect being increased by the very slow insertion of the blade. The blade should be slightly duller edged than that used in the old type of guillotine, but capable of cutting cleanly if driven through a slotted ring. The soft metal permits sufficient thrust to sever the tonsil attachments to a fine film, so that the severance can be completed by a quick rotation of the instrument on the long axis of its own shaft. This movement applied a single twist torsion action to the vessels already bluntly severed. There should be no need for traction, and to ensure this it is well to see that the lead is flush with the edges of the recess and that the blade is of the sharpness indicated above. In a properly made instrument renewal of the lead is not necessary before the completion of 500 operations. The D-shaped opening gives more space posteriorly without increasing the width of the instrument, and if the straight posterior edge is kept parallel with the anterior pillar the lower pole of the tonsil is never missed. The long shaft placed at an open angle with the handle enables the latter to clear the patient's chin and shoulders, and facilitates the rapid rotation movement which completes the enucleation.

Dr. Hill, in reply, admitted that a set of hæmostatic guillotines meant an expensive outlay. As regards the complicated nature of the instrument it only differed from the Ballenger-Sluder instrument in that there was additional Mackenzie blade and a ratchet for clamping the crushing blade. A simpler and cheaper arrangement was contemplated by adding an additional blade with a crushing edge to the Mackenzie type of guillotine. The Ballenger pattern was, however, an efficient and genuine one-handed guillotine, which could scarcely be claimed for the thumb-driven instruments which really required the use of two hands to drive home the blade with a dulled edge in enucleation by the Whillis method. Mr. Elphick, however, was responsible for the inception and construction of this particular hæmostatic guillotine, and therefore any credit or discredit connected therewith belonged to him. He (Dr. Hill), while not aiding Mr. Elphick in the inception, had no hesitation in abetting him in the practice of this improved technique.

Discussion on Difficulties and Dangers of Exploratory Puncture of the Antrum of Highmore.[1]

Mr. T. Jefferson Faulder, in ten years' practice, had observed several of the accidents mentioned by Dr. Kelly in exploratory puncture of the antrum. They include wounds of the canine fossa, of the orbit, of the

[1] For introductory paper see p. 556.

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pharyngeal wall. They resulted in emphysema, cellulitis, and hæmatomata, and in failure to carry out the exploration. So far as he had been able to observe, these accidents are due: (*a*) To want of appreciation of the anatomy of the outer wall of the nose; (*b*) to failure to realise the difficulties and to follow guides given, *e. g.* when very dense bone is encountered it generally means that the trocar is in the wrong place; (*c*) and to want of skill. Emphysema is a less serious event than cellulitis. Therefore, as safeguards against possible accidents, he recommended: (*a*) That air be injected first before the lotion is turned on. The whistling sound which air makes on issuing from the natural opening is, in itself, characteristic, and a good indication that the cannula is really in the antrum. If, by chance, the end of the cannula is somewhere else, then the whistling sound is absent, and emphysema results. In his experience emphysema produced in this way had not resulted in cellulitis, whereas injection of lotion into the wrong place had nearly always done so. (*b*) If a straight trocar is correctly placed in the antrum it will stay in that position, lying obliquely against the columella. If it falls away from that position it is not in the antrum, but, for example, has passed between the muco-periosteum and the bone in the inferior meatus. (*c*) After washing out an antrum it appears to be a good plan to give it a good final douche with air, because it cannot be an advantage to leave a pool of lotion in a cavity like this. (*d*) Where an accessory opening is present exploratory puncture becomes unnecessary. Unfortunately, we cannot, without special examination, say whether there is an accessory opening or not. If there is one, all conservative treatment can be carried out through it, and this, at any rate in the case of a nervous patient, is a great advantage. None of these accidents to which he had alluded had happened to himself, but the case which he was about to relate shows that success in the puncture is not the last word to be said. One day in December, 1913, a patient, man, aged thirty-one, was referred to him for examination of the nose. He complained of a cloud before his eyes, especially the left, for fourteen days, mainly affecting the nasal field; also of some pain behind the eyes. He had similar attacks three years ago, affecting first the left and then the right eye. The left disc was definitely hyperæmic and its edge blurred. Faint stippling of the left macular region. Vision: R.V. = $\frac{6}{18}$, L.V. = $\frac{6}{60}$. Septum irregular, with some slight œdema high up. Posterior ends of turbinals swollen. Transillumination: Right crescent, good; left, very poor. He punctured the left antrum in the usual way, first passing a wool carrier bearing a small pledget of cotton-wool, damped with 10 per cent. cocaine and adrenalin, along the inferior meatus. Nothing special was noted about the patient or about the puncture. As he was beginning to inject air through the trocar the patient was seized with a kind of epileptic fit and, remaining semi-conscious, was admitted to the ward. December 9: Temperature, 98° to 99° F.; pulse, 90 to 100; vomited several times, sitting up to do so. Although apparently conscious did not feel the prick of needles. Condition suggested hystero-epilepsy. Pupils equal and active. Tendon reflexes very variable. December 10: A succession of fits, necessitating chloroform. Each attack commenced with rolling-up of the eyeballs. Clonic movements of the limbs, now on the left, again on the right. Cyanosis, loss of reflexes, and incontinence. Moist sounds in the chest and great cyanosis. Injections of digitalin and atropin. December 11: Cyanosis much less. Patient appeared to recognise his relations. Temperature rose to 103·5° F. December 12: Temperature, 98° F. No fits since the second day. Could not be fed

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by the mouth, rectal injections always returned. Respiration very laboured, only the upper thoracic muscles being used. December 13: Temperature, 102·6° F.; pulse, 160. The patient gradually sank and died early on December 13. *Post-mortem:* All viscera perfectly healthy. Special attention was paid to the accessory sinuses, which were all quite healthy. Optic nerve looked normal and had no unusual relations. The meninges and surface of the brain showed nothing abnormal. The brain was put in formalin for hardening. On serial sections nothing abnormal was discovered except an appearance of softening in the neighbourhood of the internal capsule. This might have been due to failure of the hardening fluid to penetrate. The microscopical report is not yet forthcoming. No direct connection between the puncture and the fatal issue could be made out. It might be called an accidental coincidence or it might be analogous to cases of which one has heard where an aortic aneurysm ruptures during an attempt at œsophagoscopy. A somewhat similar case (Schneider, of St. Petersburg) is reported in the *International Centralblatt*, June, 1914.

Mr. Hastings asked Dr. Brown Kelly what was found *post-mortem* in the case he had described. He agreed that the explanation suggested by Dr. Brown Kelly, that the cannula had passed through both walls of the antrum and entered the pterygo-maxillary fossa, was the right one, because, though he always made a point of moving the handle of his trocar and cannula to be sure that the end was in a cavity, he had had two or three cases where severe symptoms of collapse, one of which was accompanied by unconsciousness, had followed exploratory puncture of the antrum.

Dr. Oliver St. John Gozarty asked what amount of cocaine was used and what the percentage was, as he had found that the stronger solutions were less toxic, as the mucosa was shrunk quickly thereby.

Dr. J. S. Fraser: In Dr. Logan Turner's clinic in the Royal Infirmary, Edinburgh, the maxillary antrum is punctured by the inferior meatal route—usually with the Lichtwitz trocar—and lukewarm sterile normal saline is at once injected. During the last ten years the speaker had occasionally seen minor accidents—perforation of the cheek and consequent swelling, perforation of the roof and of the posterior antral wall, etc., but he had never once seen any of the serious conditions Dr. Brown Kelly had mentioned—*e.g.* blindness, paresis of the limbs, coma and death. He thought that this immunity from serious complications might be due to the fact that they did not inflate air and so supported the probability of the deaths recorded and collected by Dr. Kelly being due to air embolism.

Dr. Mackenzie Booth said that the symptoms described by Dr. Brown Kelly were similar to those he had seen in Prof. Gruber's clinic in Vienna, after the use of the Eustachian catheter causing emphysema. He thought that injection of aseptic fluid into the antrum should take the place of inflation of air. In thirty-seven years' experience, out of a great number of maxillary antrum punctures he had never seen any such untoward result.

Dr. L. H. Pegler suggested that the reflex effects upon the heart that had been alluded to by Dr. Brown Kelly were probably due to the sympathetic fibres distributed in the companionship of the trigeminal branches (superior alveolar) to the walls of the antrum. The fibres are derived from the carotid plexus through the spheno-palatine ganglion, Vidian and great superficial petrosal nerves. This connection between the carotid plexus and the heart through the cardiac nerves required no

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