SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY.

President—Mr H. S. BARWELL, F.R.C.S.

May 4, 1928.

Varieties of Skin Flaps in Connection with Cases of Total and Hemilaryngectomy—R. GRAHAM BROWN, F.C.S.A. (Brisbane).

The following cases seem worth recording on account of the successful attempts to improve the surgical technique in the regions of the larynx and trachea.

I.—*Quadrilateral Skin Flap in Total Laryngectomy.*—The advantage of a quadrilateral skin and platysma flap, as recommended by Professor Tapia of Madrid and others, in the operation of extirpation of the larynx over the ordinary "T"-shaped one may be questioned. It is, however, our duty in these cases to prefer a procedure likely to give a primary wound closure than to run an extra risk of non-closure for the sake of the questionable less disfiguring scar of the latter incision. Most of us have seen troublesome pharyngostomes following laryngectomy. It is assumed that all care has been taken in the approximation of the pharyngeal mucous membrane and the muscle layers. The inclusion of the platysma fibres in the skin flap is, I think, an obvious advantage. I have adopted the rule to approximate the mucous membrane by a purse-string suture, wherever possible, which brings the submucous tissue in apposition; to bring together the muscles in layers by single catgut sutures and to use no drainage. In my last three cases, where this procedure was followed, the patients were fed with a catheter through the mouth after forty-eight hours and were able to swallow fluid foods three days later.

II.—*Preliminary Tracheotomy in Total Laryngectomy.*—During the period of after-treatment of a case in which a low preliminary tracheotomy has been performed I have been, like others, troubled with the unclean state of the wound and with the formation of granulations and subsequent scar, the results of an almost futile endeavour to bring the trachea forwards towards the skin. Especially is this the case when one follows the procedure of separating the trachea and œsophagus by means of gauze packing (I now use acriflavin strips for this purpose instead of bismuth and iodoform gauze). I considered that it would be easier and of more advantage to slide the skin deep down into the neck wound and fix it there. This can be done very readily by undermining the skin over the sternomastoid muscles, sliding the flaps inwards and by means of a mattress suture on each side, which passes in turn through the skin near its cut edge, the ribbon muscles and the sterno-

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mastoid muscle, comes out through the skin again, some $1\frac{1}{2}$ in. to 2 in. external to the cut edge where it is fixed. The skin rests in position without any dragging, and the cut edge is separated from the trachea only by the thin layer of gauze packing. No sutures are used between the trachea and skin and the wound is "clean." Following the procedure laid down by Sir St Clair Thomson and Mr Wilfrid Trotter, I excise a large disc from the anterior wall of the trachea when performing a tracheotomy in these cases. The possibility of stenosis of the tracheo-cutaneous wound must always be kept in mind; and by using a skin "slide," as suggested, this possibility will be better

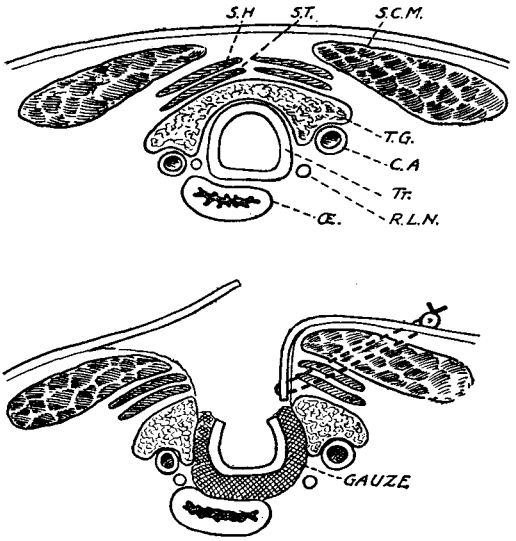


FIG. 1.—Diagrammatic representation of operative procedure showing large opening and skin flap, dissected up on left side and in position on right side.

provided against. In this case the large size of the funnel-opening to the trachea might be criticised, but this, as one anticipated, narrowed somewhat. The opening was purposely made over-large, because of the fact that the patient lived in the country, some 300 miles distant by train, and was not in a position to be inspected by me at short intervals. In any case it is, if a fault, at all events one in the right direction (Fig. 1).

III.—*Reconstruction of Larynx.*—The next case illustrates stages in an attempted reconstruction of the larynx. The history is as follows: When the patient was aged $2\frac{1}{2}$ years she had undergone an emergency tracheotomy for laryngeal diphtheria by a general practitioner in the country. Her parents stated definitely since this illness she had not been able to talk or to breathe through the mouth or nose.

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Six months before she was brought to me an attempt had been made to excise the scar tissue. There was a large laryngeal fissure; there was also total stenosis at the level of the vocal cords, and there was much intralaryngeal and external scarring. The vocal cords and arytenoid cartilages were involved in the scarring, but there was some movement of the right arytenoid and the right vocal cord. No movement could be seen on the left side. The girl had œsophageal speech, but this was weak, and was associated with "clicks" and "clacks" which masked it. She had really never learned to talk through the

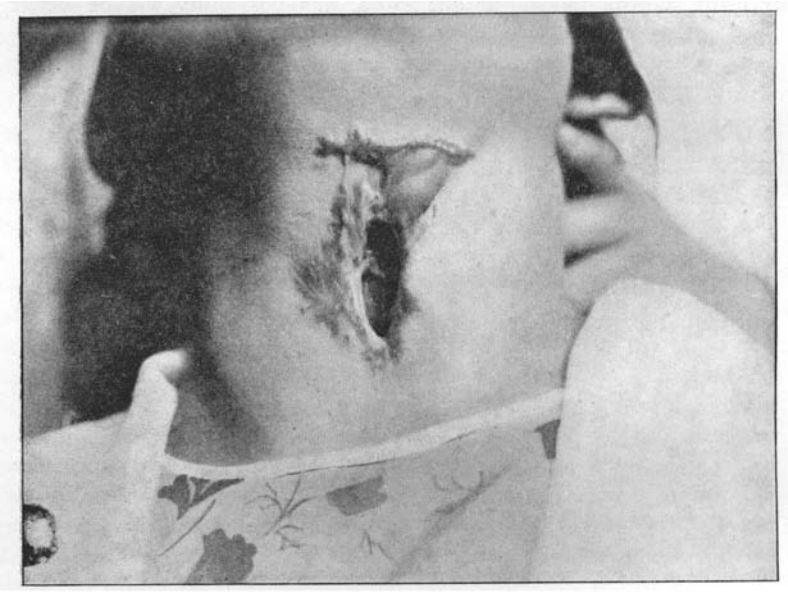


FIG. 2.—Showing large fissure, the result of an attempt at excision of a stenosis of the larynx.

larynx, and one kept this in mind in noting the amount of movement of the laryngeal parts, the appearance of any movement at all, promising a favourable development in this direction. In order to deal effectively with the scar tissue it was necessary to perform a hemilaryngectomy. There was such a degree of calcification of the cricoid and thyroid cartilages, and they were so fused together that it was necessary to remove the left half of each of these structures together with part of the left arytenoid cartilage. The calcification was so hard that bone forceps had to be used to remove it. A transverse skin flap was dissected up from the suprahyoid region, and the free end turned down into the larynx where it was fixed, without tension, by means of three fine catgut sutures (Fig. 2). This figure gives details of the calibre and

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internal appearance of the larynx seven weeks after hemilaryngectomy, during which time a semi-hard wax cast had been worn; the right cord is seen, but it is scarred. Two months later the anterior wall of the larynx was re-formed by cutting across the base of the flap and turning it down. This, in turn, was covered by "slide" skin flaps made by undermining the skin on both sides and suturing in the middle line. The pharyngeal end of the cast was purposely made long and pointed to allow of its smooth introduction, in order to avoid, as far as possible, damage to the skin graft surface. After the hemilaryngectomy operation there was some slight escape of saliva, but this soon disappeared. The patient is now able to breathe through the larynx during the whole of the night, and her speech is a medium loud whisper. Considering the fact that she has, to all intents and purposes, never learnt to phonate, and does not know the value of the accessory resonators, it will necessarily be some time before she acquires a strong voice. One can reasonably hope for a fair voice after some contraction has taken place, especially if the right vocal muscles develop with exercises, after she has learnt to co-ordinate the expiratory efforts which are essential for speech. I believe, too, that the airway will be maintained to a degree sufficient to allow of a hope that eventually the tracheotomy tube may be discarded. Four and a half months elapsed between the first and last operations.

In conclusion, it may not be out of place to state that the operative procedures in these three cases were all performed under local analgesia, or rather a form of synergetic analgesia, a method which I consider ideal for this class of operations.

Mr HERBERT TILLEY said that all teachers should impress upon their students the necessity of always performing a low tracheotomy. Most of the trouble in the case which had been narrated was due to the surgeon having practically performed laryngofissure.

Bronchiectasis in Children: The "Pseudo-Robust" Appearance in Cases associated with Nasal Accessory Sinus Suppuration—R. GRAHAM BROWN, F.C.S.A.—The paper is published *in extenso* in the *Journal of Laryngology and Otology*, vol. xliii., September 1928, p. 656.

DISCUSSION.

Sir JAMES DUNDAS-GRANT said that this communication had forcibly impressed on members the facial characteristics of children suffering from bronchiectasis. He (the speaker) had previously had some idea of them from seeing children with the pseudo-robust condition at Brompton Hospital, and, in consequence, guessing that the children in question had bronchiectasis.

Mr M. VLASTO asked how Mr Brown would explain this spurious robust appearance. These cases seemed to be exactly like other cases

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of chronic toxæmia. He had had no personal experience—apart from the inspiration of foreign bodies—of bronchiectasis originating from infection of the accessory sinuses of the nose. It was peculiar that amongst the few cases of infected antra in children there should occur here and there a case of bronchiectasis, and yet amongst the thousands of children with highly infected adenoids, bronchiectasis should be almost unknown. His daily experience was to see a child brought up with a chronic cough; the diagnosis of infected tonsils and adenoids was made, the operation was performed, and sooner or later the cough cleared up. Possibly in some of these cases the antrum on proof puncture might be found to contain pus.

Mr J. B. HORGAN said he thought the point which Mr Graham Brown wished to emphasise was that he systematically sought for trouble in the nasal sinuses in children, whereas perhaps most members did not. If they did there was a likelihood they would agree with Mr Brown. He offered his congratulations to him on the advance he had made in the surgery of nasal sinusitis in children, a subject about which there was yet a good deal to be learnt.

Dr J. S. FRASER said that with regard to the removal of the middle turbinal, he wondered whether Mr Graham Brown had tried to clear out the ethmoid and so ventilate the maxillary antrum without removing the middle turbinal. In Halle's operation which he had found successful in certain cases, the middle turbinate was fractured towards the septum, and the ethmoid was exenterated. If the middle turbinal could be left it was an advantage.

With regard to the septal operation in children, he recalled the case of a boy who had frequent attacks of bronchitis and asthma; the septum blocked one side of the nose partially, the other side totally. Though the operation cured both ailments, the boy's mother was still resentful with regard to the shape of her son's nose.

Mr E. D. DAVIS said the method of puncturing the canine fossa was admirable; he wished to know what kind of trochar Mr Graham Brown used, and whether he had had any adverse results. The author seemed to consider that nasal sinus suppuration was a cause of bronchiectasis; this would be difficult to prove.

Mr ANDREW WYLIE agreed that the antrum should be thoroughly investigated, especially in children always complaining of nasal catarrh, or those suffering from decayed teeth. When Dr Watson-Williams had brought this fact to the notice of the Section several years ago, several members, including himself (Mr Wylie), had considered the condition somewhat exaggerated. He had since changed his mind, having in several cases found pus and caseous matter in the antrum.

MR GRAHAM BROWN, in reply to Mr Vlasto, said that the children were not robust, but pseudo-robust; they were really flabby, and did not run about and play with zest in the manner of healthy children. All his patients were not Australians; one boy who had advanced bronchiectasis, came from London. In answer to Dr Fraser, he had no hesitation about performing the operation of middle turbinectomy, but he was strongly against interfering with the inferior turbinate. He performed a middle

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turbinectomy to give ventilation to all the air sinuses which opened under the middle turbinate, and he only removed just sufficient of that bone to give the required ventilation. It might be necessary to do a submucous resection in order to deal efficiently with the middle turbinate. He left a fair margin of the septal cartilage anteriorly. There were times when the operator must be guided by his conscience, and a septal operation must be insisted on when it was considered necessary. To perforate the anterior wall of the antrum no special type of needle was needed; he used one of 1·5 to 2 mm. diameter. It was a simple matter to pass the instrument through the bone when one kept immediately beneath the infraorbital foramen, but care was needed, because if one went laterally one met with thick bone. Regarding the child in whose case he had been obliged to perform a radical operation, after several washings-out he had concluded that the antra were clean. However, fourteen days after the last wash-out the patient had a marked "flare up" and became seriously sick. He was forced to open the antra. The resistance of these bronchiectatic children was lower than that of normal children. He could not say definitely that the sinus suppuration was the cause of the bronchiectasis, but it existed at the same time, and in these cases there had almost always been evidence that it had existed previous to the bronchiectasis. He believed that in these cases the bronchiectasis was secondary to the antral suppuration, and he was definitely of opinion that the antral suppuration prevented improvement with regard to bronchiectasis.

Fixation of Left Vocal Cord as the Result of Acute Rheumatism—W. M. MOLLISON, M.Ch.—Patient, aged 16, had an attack of chorea and acute rheumatism six months ago; during the illness partial loss of voice was noticed and had persisted.

The left cord appears fixed.

Mr HERBERT TILLEY said this was similar to a case which he had described at the Edinburgh Meeting of the British Medical Association last summer; it was that of a doctor, with an inactive left cord and œdema of the corresponding arytenoid, who had had an attack of acute rheumatic fever. He (Mr Tilley) had seen the patient two months later and found that the action of the cord was normal and the œdema had quite disappeared.

Mr E. D. D. DAVIS asked whether Mr Mollison had excluded recurrent laryngeal paralysis. If not, might that not be the cause of the fixation?

Mr MOLLISON (in reply) said that he did not know by what means he could exclude recurrent paralysis in this case.

Chronic Right Frontal Sinus Empyema with very Severe Headaches cured by External Operation after Failure by Intranasal Method of Drainage—HERBERT TILLEY, F.R.C.S.—Male, aged 29, has had several attacks of severe and incapacitating right-sided frontal headaches for the past ten years, associated with "nasal catarrh." The attacks last for about four days, and the pain is

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intense for about one hour each morning. Patient says he has suffered from "angioneurotic œdema of testicles, foot, palm of hand and vulva."

Examination.—A prominent septal spine is pressing against the anterior region of the right middle turbinal. Mucopus is seen in anterior cleft of middle meatus, and beyond this the mucosa is polypoid. A considerable mass of adenoids in nasopharynx. Maxillary sinuses clear on transillumination.

4th August 1927.—Under general anæsthesia right middle turbinal removed and lateral mass of ethmoid, which was in a state of polypoid degeneration. Anterior wall of right sphenoidal sinus removed and the frontonasal canal enlarged with author's rasps. Adenoids were removed.

The symptoms were only partially relieved, so the patient was readmitted on 23rd November 1927, and the external operation performed. The frontal sinus was lined with œdematous mucous membrane and contained pus. A free opening was made into the nasal cavity and drainage tube inserted, leading from the upper end of the enlarged frontonasal canal to the external naris, and the lips of the external wound sutured. The tube was removed on the fourth day.

The patient made a rapid recovery, and has had no recurrence of the headaches nor of the discharge. The scar is scarcely noticeable.

Bilateral, Chronic Suppuration of the Frontal Sinuses with Subperiosteal Abscess over the Right Sinus: Cured by External Operation — HERBERT TILLEY, F.R.C.S.—Female, aged 48, was admitted for "swelling over the forehead for one month, pain (frontal) for ten weeks, and sleeplessness due to pain."

26th March 1927.—There is a history of tuberculosis of both lungs which has been arrested. A tense, painful and fluctuating swelling about the size of half-a-crown, is situated in the lower, central frontal region. Tissues immediately round the swelling are slightly œdematous.

Transillumination of right antrum is dull. Purulent discharge could be washed from right frontal sinus, and during the irrigation the external swelling increased in size, and conversely, by means of a suction bag fixed to the cannula, the swelling could be made to diminish much in size.

Treatment.—For several weeks the sinus was irrigated with mild antiseptic lotions and 15 per cent. solution of argyrol injected, but only moderate relief of symptoms was obtained.

On 21st June 1927, external operation on the right frontal sinus revealed a fistula in the anterior wall of sinus, and the surrounding bone was inflamed and easily removed with forceps. The septum between right and left sinus was absent, and both were filled with swollen pyogenic membrane. Both sinuses were freely exposed, a portion of their anterior walls removed, the frontonasal canals enlarged

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and iodoform gauze drains inserted from the sinuses to their respective anterior walls. The outer thirds only of the skin incisions were sutured.

Daily dressings were carried out until the sinuses were filled with healthy granulations and the incisions had closed.

The patient was discharged cured on 22nd May 1927.

The type of case is rather unusual in that: (1) the perforation of the anterior wall of the right frontal sinus seems to have developed slowly; (2) the patient is a tuberculous subject, and still has physical signs indicative of old bilateral pulmonary tuberculosis which appears to have been arrested.

Dr J. S. FRASER said that if one made the incision right through the middle of the eyebrow and took a bolder curve down the side of the nose, the scar was even less noticeable than if the incision were behind and below the eyebrow.

Mr NORMAN PATTERSON said that he did not agree with Dr Fraser. If the incision was made through the eyebrow and a depressed scar resulted the deformity was greater than if it were made below the eyebrow.

Mr STIRK ADAMS said he himself had undergone an external frontal sinus operation five years ago, the incision having been made through the centre of the eyebrow, and he thought members would have difficulty in deciding on which side the scar was.

Mr TILLEY (in reply) said that formerly many external operations were done on the frontal sinus but they had been supplanted by the intranasal route. When he operated externally many years ago he used to make the incision through the eyebrow. It was true the scar was not visible, but the eyebrow tended to become narrow on the side of the scar and in certain complexions this was noticeable. For that reason he now incised immediately below, so that the eyebrow was left the same width as that on the other side.

Post-mortem Specimen of Portion of Œsophageal Wall from Patient shown November 4, 1927.* (**"Achalasia of Cardia after treatment by Hurst's Mercury Tubes"**)—HERBERT TILLEY, F.R.C.S.—The patient was re-admitted to University College Hospital, 27th February 1928, with a history of broncho-pneumonia for four weeks, and after the acute symptoms had subsided he began to expectorate large quantities of offensive sputum.

On admission the patient was very pale, wasted, apathetic, and only by a strong effort could he whisper, and even this caused increase in his breathlessness. Temperature 99° F. Pulse 88. Physical signs pointed to consolidation of left base. No difficulty in swallowing. Patient died on 2nd March.

Post-mortem.—The left lower lobe of lung contained an abscess cavity filled with foul pus and necrotic lung tissue; no foreign body;

* *Journ. of Laryngol. and Otol.*, vol. xliii., February 1928, p. 121.

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in lower lobe of right lung were several small, and one large, abscesses filled with similar material to that in the left lung abscess.

There was no sign of obstruction in the œsophagus, and its wall was intact, but the mucous membrane showed a patchy hyperplasia.

I am indebted to Mr Barnard (Curator) for the following report:—

"The œsophagus is greatly dilated, measuring up to 9.5 cm. in circumference, and the muscularis thickened (up to 0.4 cm. thick). The mucosa is profusely covered with scale-like pearly-white thickenings which, on microscopic section, prove to be patches of epithelial hyperplasia. Except in the region of the thickened patches, the mucosa is everywhere the seat of a chronic inflammation."

Dr J. S. FRASER asked whether it would not be worth while examining the cells of Auerbach's plexus in this case. Dr Cameron, of Glasgow, recently demonstrated beautiful preparations from cases of dilatation of the œsophagus showing small-celled infiltration round the cells of Auerbach's plexus and degeneration of the ganglion cells. It was recognised even by Mosher, of Boston, that the probable pathology of achalasia or dilatation of the œsophagus was this affection of Auerbach's plexus. Previously Mosher held entirely different views regarding the pathology of the condition.

Mr TILLEY (in reply) said he would try to secure such a section, and if successful would report on it.

AUSTRIAN OTOLOGICAL SOCIETY.

December 12, 1927.

Abstract from the Monatschrift für Ohrenheilkunde, March 1928, by ALEXANDER R. TWEEDIE, F.R.C.S.

Otitic Septic General Infection with Bilateral Optic Neuritis—R. LEIDLER.—Woman, aged 36, otherwise healthy, had two months ago acute otitis media (R) with spontaneous perforation, following a sore throat. Since then there has been otorrhœa. For one week she had headache, and for some days high fever and transient giddiness.

20.9.27.—A long continued rigor. 21.9.27.—Temperature 39.6° C. and severe right-sided headache beginning posteriorly and extending over the head: general and neurological examination was negative. Left ear was normal.

On the right side the mastoid process was extremely tender, but otherwise unchanged. There was slight mucopurulent discharge. T.M. was much injected and infiltrated and had a small anterior inferior perforation. Deafness was of middle-ear type. Response to cold caloric test occurred only after using 250 c.cm. at 13 degrees.

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