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SOCIETIES' PROCEEDINGS.

ROYAL SOCIETY OF MEDICINE—LARYNGOLOGICAL SECTION.

February 1, 1918.

President: Dr. A. BROWN KELLY.

(*Continued from p.* 348.)

Shrapnel Wound of the Left Side of the Face.—G. S. Hett.—Rifleman T. H——, aged thirty-two. Wounded May 27, 1917. Admitted July 11, 1917. Transferred to Queen's Hospital, August 21, 1917. Shrapnel wound left side of face. Left half of nose absent. Antrum open on face. Opening from floor of antrum through gingivo-labial fold.

Operation: The opening between the antral cavity and the mouth was closed by raising the antral mucous membrane round the opening and closing the edges by silkworm gut sutures. The upper lid was everted, and the mucous membrane of the alveolus and inner surface of upper lip was also sutured together by horsehair sutures. The left inferior turbinal was detached posteriorly, twisted forwards, and its posterior end attached to the anterior portion of the floor of the nose so as to form a support for a subsequent plastic operation on the nose. The right ala nasi was adherent to the septum by adhesions. The ala was partly detached below and the adhesions removed and a tube inserted into the right nasal cavity, thus establishing the patency of the right nasal passage.

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Sunken-in Nose, illustrating the Employment of an Autogenous Costal Cartilage Graft for Septal Support.—G. S. Hett.—Private C——. This patient received damage to the face from a kick of a horse while serving in France. As a result of this the septal support of the nose sloughed. The nasal bones remained. As a result of the injury the nose drooped and fell in from the middle of the bridge to the tip, causing a marked prize-fighter type of face. It was found on examination that the whole of the septal cartilage and part of the vomer were missing, and the soft parts of the septum had healed and were intact.

Operation: An incision was made down the mid-line of the columella from the tip of the nose down to the junction of the columella with the upper lip. This was deepened, and the soft tissues of the septum were separated backwards until the remains of the vomer were met with. The division was continued upwards and forwards under the skin of the bridge and tip. The two sides were separated down to the floor of the nose in the same manner. By proceeding carefully it was possible to complete the separation without making a perforation. Meanwhile Captain Aymard had exposed the eighth costal cartilage on the right side. A quadrilateral piece of cartilage rather larger than the normal cartilage of the septum, and about the same thickness, was removed and cut into shape to fit tightly between the septal flaps. The usual submucous resection plugs were then inserted and kept for twenty-four hours.

Post-traumatic Laryngeal Stenosis treated by Homologous Cartilage Graft.—G. S. Hett.—Private R—— was admitted to Hospital suffering from loss of voice and stridor. The patient had a high tracheotomy wound. He was wearing a tracheotomy tube, but even with this he had some stridor, especially at night. He had a history of having taken poison by mistake, and then cutting his throat in desperation. An emergency tracheotomy had been done, and it had not been possible to dispense with the tube six months after the date when first seen (October 23, 1917). The tracheotomy wound had touched the lower border of the thyroid cartilage, traversed the cricothyroid membrane, the cricoid cartilage, and first ring of the trachea.

Operation: A low tracheotomy was done. The upper tracheotomy wound was opened and very marked stenosis was found. This was due to the fact that the anterior wall of the respiratory passage in this situation consisted of nothing but scar-tissue. There was a very narrow chink between the lower border of the thyroid and the cricoid. The narrowed passage was blocked above the tracheotomy opening by polypi. The polypi were removed, scar-tissue dissected away, and an indiarubber tube inserted well up into the larynx and down into the trachea.

The patient managed without the low tracheotomy tube for a time, but it had to be reinserted at intervals. After another month it was found impossible to retain the lumen of the passage owing to contraction and want of support of the anterior wall. A plastic operation was therefore decided on.

Second operation: The thyroid cartilage was exposed. The flap had its base on the right, and was turned across the neck to the side. The scar of the cut throat, which lay above the flap, was excised. The thyroid cartilage was split, and some scar-tissue at its lower border was excised. The cords and rest of the larynx were normal. The scar-tissue over the cricoid and tracheal region was freely cut away. Dr. Butterfield had meanwhile exposed the larynx and upper part of the trachea of a

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dog in the annexe to the operating theatre. He excised and brought me the portion after washing it in normal saline solution. I had intended to use the dog's thyroid cartilage, but found that the anterior half of the trachea fitted better into the gap. The graft contained five rings of cartilage. The mucous membrane of the inner surface was retained. The graft was sutured by catgut into position, and the infrahyoid muscles were detached above and wrapped round it. Lastly, the skin-flap was slid downwards and formed a covering to the whole.

The patient did well; the low tracheotomy was allowed to close on the fourth day. Subsequently two half rings of the graft appeared on the surface in a local abscess and were removed. The wound then healed, and the patient had a good airway, lost his stridor, and developed a deep voice, whereas before he only had a hoarse whisper.

Four months later he was brought into the hospital with acute abdominal symptoms. He died in a few hours. At the *post-mortem* the cause of death was found to be a strangulated diaphragmatic hernia.

This case is interesting as showing that the homologous graft persisted and formed a support and new anterior wall to the trachea. The specimen is shown, and also a microscopic section by Dr. Butterfield, through the region of the homologous graft. The microscopic sections were taken from a small thin piece removed from the left side of the median incision. These show small islands of cartilage, some of which are in intimate relationship to the lower end of the thyroid cartilage. These contain practically all the characters of normal cartilage, except that there is some fibrillation of the matrix.

Rhinoplastic Case.—J. L. Aymard.—There is complete loss of nose, right eye, and partial loss of upper lip, following a gunshot wound. The case presents many of the difficulties attendant upon nasal reconstruction.

Dr. Aymard: A paper of mine on "Some Points in the Anatomy of the Septum" has been reprinted in the Journal of Laryngology, Rhinology, and Otology for this month, and I hoped to demonstrate the circulation in the cartilage of the septum I have here. It requires to be taken out of the spirit ten minutes, and then returned to the spirit, and removed; it will then show all the ramifications of the vascular system in the septal cartilage, which is only a prelude to the general circulation in the cartilage. I stated that operators often thought they had performed a subperichondrial resection, whereas what was done was only a submucous resection.

Turbinal Shifts and Septal Swings.—G. S. Hett.—By the former I mean advancement of the middle, or inferior turbinals, and have found this manœuvre of great use in gunshot wounds of the nose, in helping to fill up gaps, in acting as supporting structure to a new nose, or portion of a nose, which has to be made. They also help to form a new mucous lining for the new nasal cavity.

Case 1.—Private F——. This case illustrates the advancement of the right middle turbinal.

Case 2: *Septal Swing.*—Lieutenant S——. This shows a somewhat complicated mass of turbinals brought forward to help fill up the gap, in a case of Major Gillies', of total loss of the nose. (This case has already been shown by Major Gillies, *re* Rhinoplasty.) The diagram explains the shift of all four turbinals and in addition the upper septal swing.

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In this case the detached septum was swung laterally at Major Gillies' suggestion to try to compensate to some extent for the loss of the nasal process of the left superior maxilla.

Case 3.—Private M——. A combined case of Major Gillies' and my own, where an L-shaped septal swing was used to form a support for the bridge of the nose and tip of the new nose.

Case 4: *Nasal Supports.*—Private C——. This illustrates the method of septal support by making a new cartilaginous septum. This method is only applicable where the soft tissues remain, but may have a very useful application in cases of sunken bridge in civil as well as military cases.

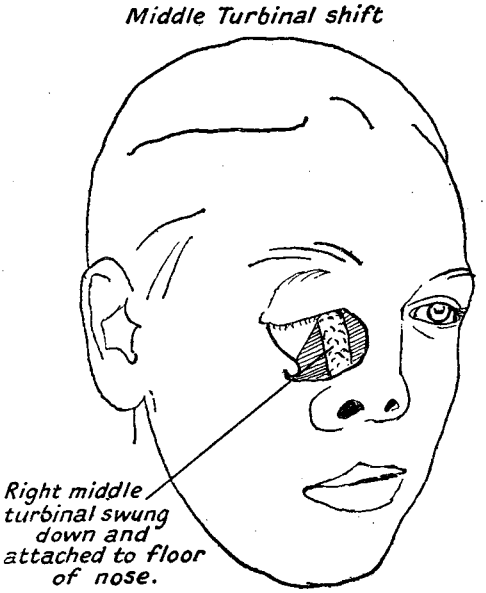


Fig. 1 (Case 1).

Case 5.—Private B——. This illustrates the same condition. The nose was held down by a scarred right ala, so that the latter had to be cut free before the tip could be advanced. In cases where septal support is needed but the soft tissues of the septum are lacking, two pieces of cartilage are introduced, one along the bridge through a tenotomy wound and the other by splitting the columella as in Lieut. Hastings' case.

Case 6.—Private H——. In this case I used a modified septal swing to form a new columella, and later implanted an L-shaped piece of cartilage to give prominence to the bridge, and support the columella.

Case 7.—Private C——. In cases of bringing down a nose from the forehead, the supports for the bridge, columella and ala are usually planted in the nose before bringing down. The most difficult problem in my mind in rhinoplasty is to get sufficient prominence for the tip, so that all additional means are useful. In the case now shown I have arranged several accessory supports which I trust may be added safeguards. At the time of the implantation of the cartilage in the forehead

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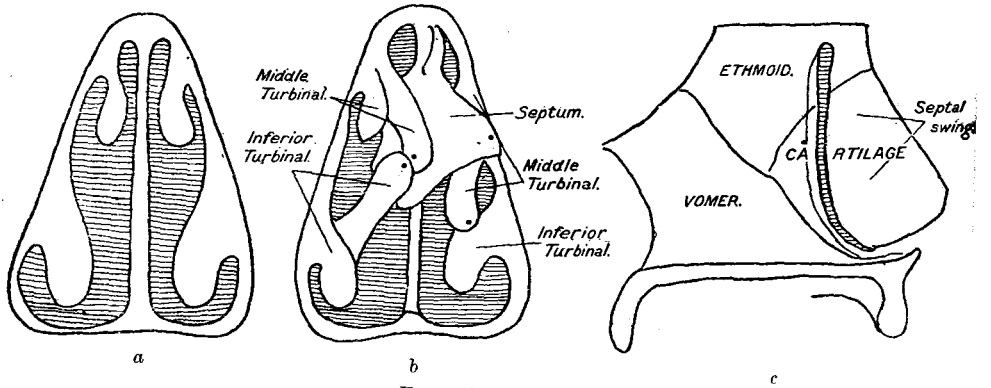


FIG. 2 (Case 2).

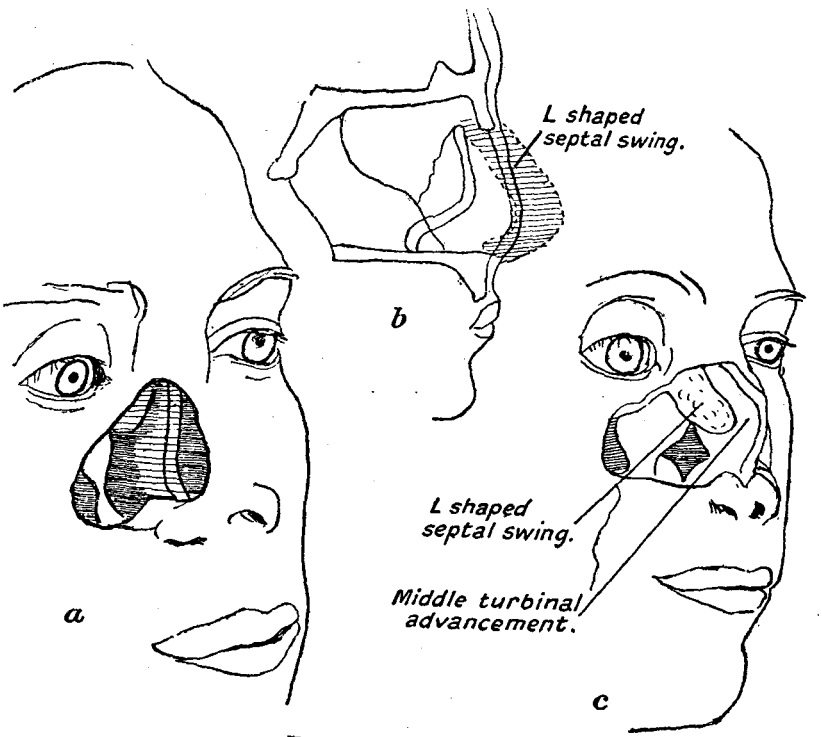


FIG. 3 (Case 3).

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I buried two rods of cartilage under the mucous membrane of the floor of the nose. They are now living and have a mucous membrane covering. When bringing down the nose I intend to swing them forwards and join their raw surfaces together and so have a median mucous membrane covered rod to act as a prop and replace the original septum. I have

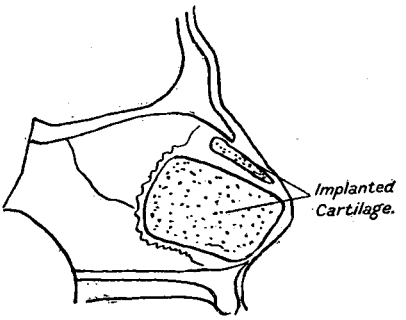


FIG. 4 (Case 4).

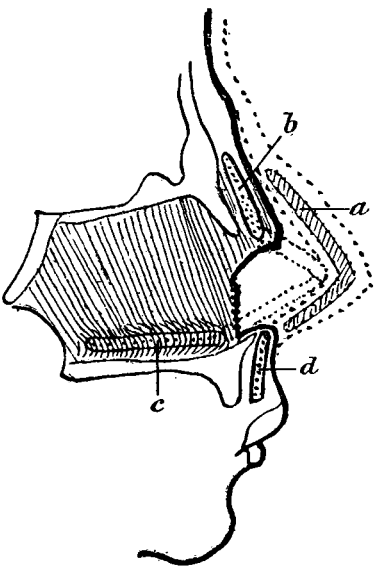


FIG. 5 (Case 7).—Cartilage grafts: *a*, in forehead flap; *b*, in bridge of nose; *c*, in floor of nose; d, to form nasal spine.

also endeavoured to make a new nasal spine. In making a new nose, besides the tendency of the tip to sink, there is the bad appearance of the upper lip, and its junction with the columella. This is due to the frequency with which the nasal spine and crest are lost. I endeavoured to replace this with a new cartilaginous spine introduced through the mucous membrane of the upper lip. The forehead columella is to be attached directly to this and the cartilages joined. Further, I have

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placed a rod of cartilage under the skin of the bridge, which can also be swung downwards in order to form a still further support for the bridge and tip.

The Making of a New Ala.

Where one ala is destroyed, a vertical flap from the junction of the nose and cheek may be turned down to form a new ala. This is a simple method, but unless the ala is supported and the raw surface of the new vestibule is covered with epithelium, it will inevitably shrink, so that the contour of the ala is destroyed and nasal obstruction ensues. In order to obviate this contraction in one case (Private H——, No. 8), where the right ala had been destroyed together with the anterior end of the right inferior turbinal, I removed the anterior half of the left inferior turbinal and used this as a free gift to support the right ala.

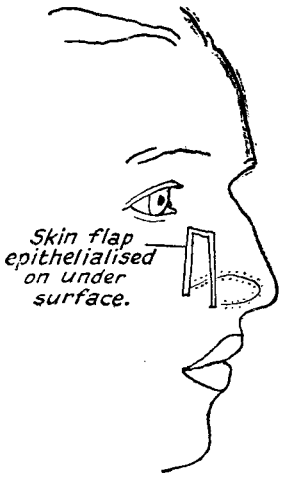


Fig. 6 (Case 9).

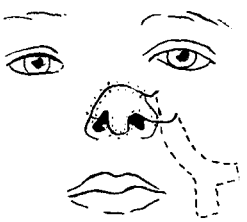


Fig. 7 (Case 10).

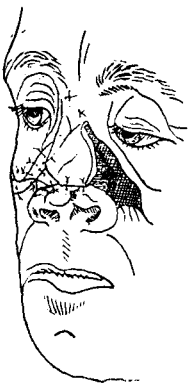


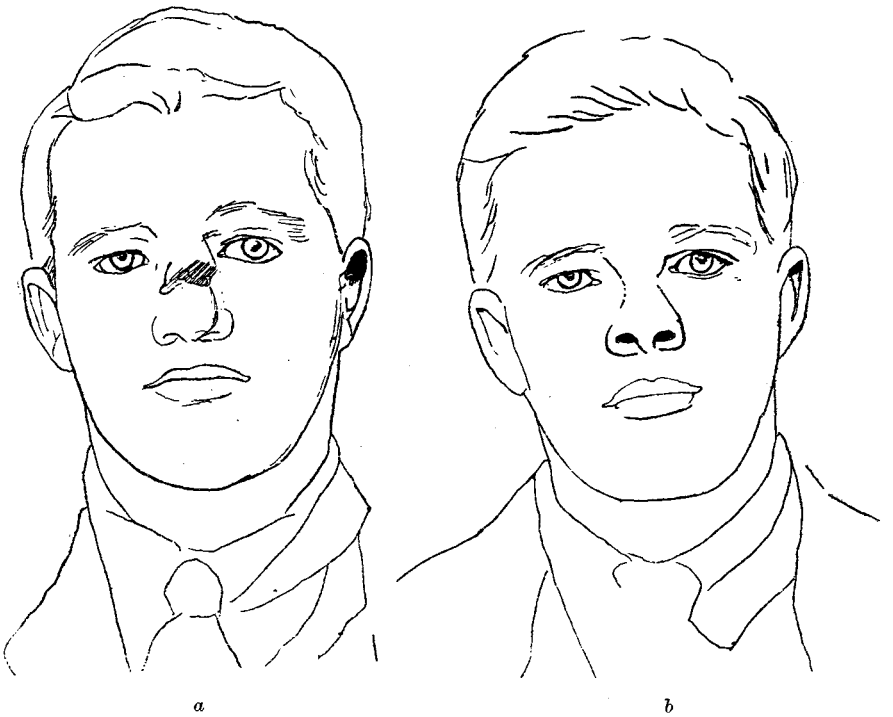
Fig. 8 (Case 11).

The turbinal was implanted in the position of the right ala. It established a living connection with the tissues. A fortnight afterwards the mucous membrane from its superficial surface was removed and the usual skin-flap was brought down to cover it. In this case, therefore, the right vestibule was lined with mucous membrane instead of skin. A serviceable but somewhat rigid ala was produced. In subsequent cases where possible, I have turned down a semilunar flap of skin previously epithelialised on its under surface by Ewer's method (Private W——, No. 9).

A useful amplification of this method is to include a piece of cartilage between the skin lining of the vestibule and the external flap. Where alæ, tip and columella have to be made (Private R——, No. 10), I have found the Y-shaped flap of service. The flap must be cut thick, especially over the tip and columella, as otherwise the tip will contract and not be sufficiently prominent.

The result of the operation for restoration of ala, tip and columella was satisfactory but the left vestibule become somewhat contracted. In order to obviate this I employed the following manœuvre: A Stent was

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a *b*

FIG. 9 (Case 14).—*a*, Front view before operation; *b*, front view after operation.

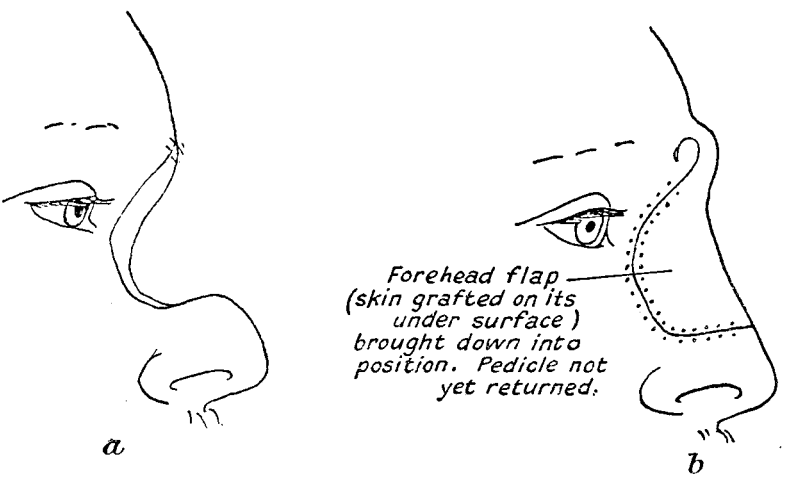


FIG. 10 (Case 15).—Side view.

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moulded round an india-rubber tube. The contracted skin and scar-tissue of the vestibule were dissected away and the Stent introduced while still soft, so that it formed an exact impression of the cavity. When cooled and hardened it was removed and covered with Thiersch skin-graft. It was then re-introduced and stitched firmly into position. The drainage-tube, which was passed through it, allowed free vent of mucus from the nose. Eight days afterwards the Stent was removed and the vestibule was found to be lined with healthy epithelium. This established a patent nostril and has prevented subsequent contraction.

The Pug-Nose Type.

In cases where the lower portion of the nasal support—*e. g.* the septum, has been destroyed, the alæ and tip tend to sink in and take up the vertical position (Private C——, No. 11). In these cases where possible the lower septal swing is adopted and the tip and alæ are brought down from the vertical to the horizontal. A new nose is then brought down from the forehead and either joined to the tip and alæ in their new position or placed over the tip and alæ, the latter surface having been previously rawed. In another case (Private R——, No. 12) the new nose was merely brought down and joined to the alæ and tip, whereas in the last case the alæ and tip were overlapped by the new nose.

The Bird Beak Type.

In these cases the upper portion of the nasal support, *i. e.* the nasal bones, have been damaged or destroyed. In the first case of this type shown (Private C——, No. 13) the external wound had closed but there was considerable nasal obstruction. Intranasal adhesions were removed and a submucous resection was performed, which was carried far forwards so as to depress the tip. The removed cartilage was cut into four strips and these were introduced superimposed through a tenotomy opening so as to elevate the bridge.

In the next similar case (Private S——, No. 14) the upper portions of the nasal cavities were open on the surface. The middle turbinals were advanced so as to fill up the gap, and one vertical and two lateral flaps, as shown in the diagram, were used as a skin covering. In this case also there was considerable nasal obstruction. At a subsequent operation a month later the intranasal adhesions were cleared and a submucous resection was performed. The removed piece of cartilage was reinserted, with its long axis vertical so as to form a support for the upper portion of the bridge of the nose. A very fair result was obtained but the nose remained somewhat tip-tilted. The patient then came under Major Waldron, the head of the Canadian section at Sidcup. In order to improve the appearance still further we introduced a rod of cartilage from the eighth rib under the skin of the bridge.

A third case of the same kind (Private H——, No. 15): Three pieces of cartilage have been introduced into the forehead—one to give prominence to the bridge, and two lateral ones to reproduce the nasal bones. After epithelialisation of the under-surface of the forehead flap the latter has been brought down into position.

(*Note by Editor*, Journ. of Laryngol., Rhinol., and Otol. — A number of the diagrams have been unavoidably omitted. Readers interested are referred to the *Proceedings of the Royal Society of Medicine*, Laryngological Section, February, 1918.)

(*To be continued.*)

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