SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY

May 4th, 1934

President—MUSGRAVE WOODMAN, M.S.

CASES

Aphonia of Forty-four Years' Duration caused by Inhalation of a Stud, requiring Tracheotomy: Voice reproduced during Digital Compression of Sides of Larynx.—SIR JAMES DUNDAS-GRANT.

The patient was a middle-aged man whose voice had been reduced to a whisper since childhood, when he accidentally inhaled a collar-stud. Tracheotomy had to be hurriedly performed, and the stud is stated to have been extracted through the mouth, although it was broken in the process. The voice now is a mere whisper. The tip of the upper part of the thyroid cartilage is bent to the right, or at any rate there is an extremely deep depression behind it. The laryngoscope reveals imperfect adduction of the right cord, and beneath it a pale projecting swelling, the inward projection of the thyroid cartilage corresponding to the deep depression behind the tip. On inspiration the right cord sinks in below the ventricular band. When the sides of the larynx are compressed with the finger and thumb on special spots, the voice is loud and fairly clear. I am endeavouring to get a spring-truss to go round the back of the neck with pads to press on these spots.

Postscript.—On further examination I found that the anterior tip of the thyroid cartilage pointed to the right with, consequently, a depression behind it on the same side and a comparative bulging behind it on the opposite one. When I pressed this tip to the left with my right thumb and, at the same time, exercised pressure with my right index or middle finger on the left-sided bulging, the voice became loud and distinct.

In the laryngoscopic picture there was what seemed to be a pale smooth bulging under the anterior part of the right cord shelving off below the left cord. I interpret this bulging as corresponding to the depression behind the tip of the thyroid cartilage which prevents the apposition of the anterior part of both cords.

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

Hyperkeratosis or Pachydermia Laryngis associated with unusual Bacterial Concretions around Ectopic Epithelial Cells in the Submucous Coat. Inspiratory Stridor.

—Sir James Dundas-Grant and W. E. Carnegie Dickson.

Male, aged 52. Complained of hoarseness and difficulty in breathing keeping him awake at night. When seen in consultation on *March 5th*, nodular pachydermoid swellings were found on both vocal processes and in the interarytenoid space. The vocal cords were extremely œdematous, and often indrawn during inspiration, causing the dyspnœic attacks. The condition was thought to be pachydermia and not carcinoma, and a few days later the growth was nipped off the left vocal process, together with a portion of the œdematous surface tissue of the vocal cord. The difficulty in breathing was at once relieved and there were no further attacks of nocturnal dyspnœa. The voice is still rather husky. In 1923, the patient had had a somewhat similar experience.

There was then (in 1923) extreme œdematous swelling of the left vocal cord. Sir James Dundas-Grant grasped it with forceps but did not extract it. A week later there remained only a circumscribed rounded projection which Sir James Dundas-Grant extracted with Whistler's forceps. The tissue was not examined but was most probably inflammatory. There is possibly some relation between this episode and the ectopic development of squamous epithelial cells described below by Mr. Carnegie Dickson. The patient is much in the midst of dust and emanations from japanning processes and has had to use his voice excessively.

Pathological report (W. E. Carnegie Dickson).—The histological findings were unusual. In the submucous coat there are what may be described as several old bacterial concretions around a central core of ectopic surface squamous epithelial cells, the micro-organisms present being chiefly Gram-positive cocci, both staphyloid and in short streptococcal chains and, in some parts, Gram-positive leptothrix filaments such as are common in tonsillar concretions. (Figs. 1 and 2.) An interesting point is that there is no recent acute or subacute inflammatory reaction around these concretions—only a comparatively minor degree of fibrosis in their neighbourhood, over which there is old hyperkeratosis of the surface epithelium with some surface œdematous swelling. The ectopic surface epithelial cells and bacteria have evidently been carried in a long time previously and, the tissues of the submucous coat having become accustomed to their presence, any inflammatory reaction has long ago passed off.

Discussion.

P. Watson-Williams said he wondered whether this might be a case in which the infection was of nasal origin. The patient had had

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

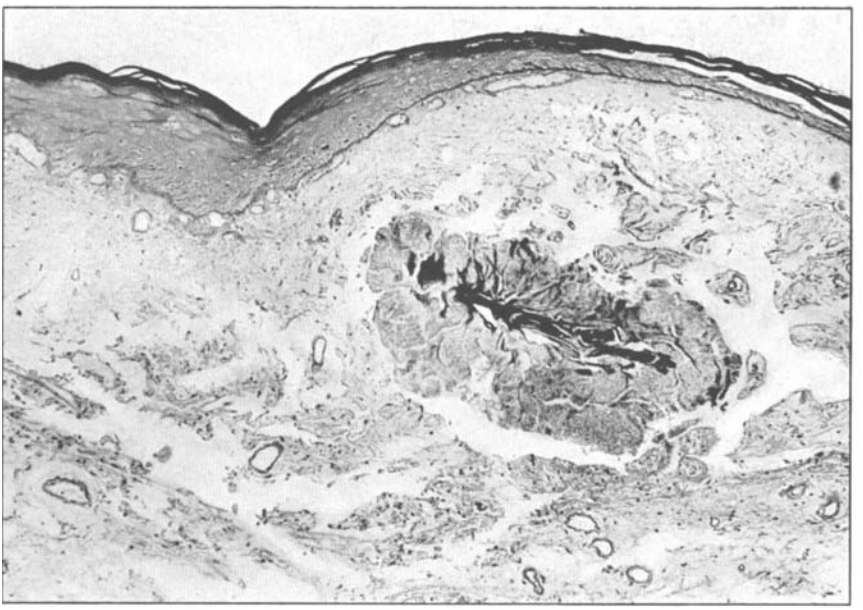


Fig. 1.

Low-power view of a section of the largest of the "bacterial concretions" around a central core of ectopic surface squamous epithelial cells, which, in the original section, are stained an intense red colour identical with that of the superficial cells of the stratum corneum—both showing as black in the micro-photograph—whilst the surrounding delicate connective tissue of the submucous coat is stained blue. Note that there is *no* cellular inflammatory reaction round this concretion, and that the surface squamous epithelium *immediately* over it is thinned rather than thickened, *though there is some chronic thickening due to irritation just peripheral to it (towards the left side). The masses of bacteria of which the concretion is mainly composed are* only faintly stained by this method and are better shown in Fig. 2. (Mallory's acid fuchsin, aniline blue, Orange-G. stain for connective tissue.) (× 100.)

[*face p.* 680

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

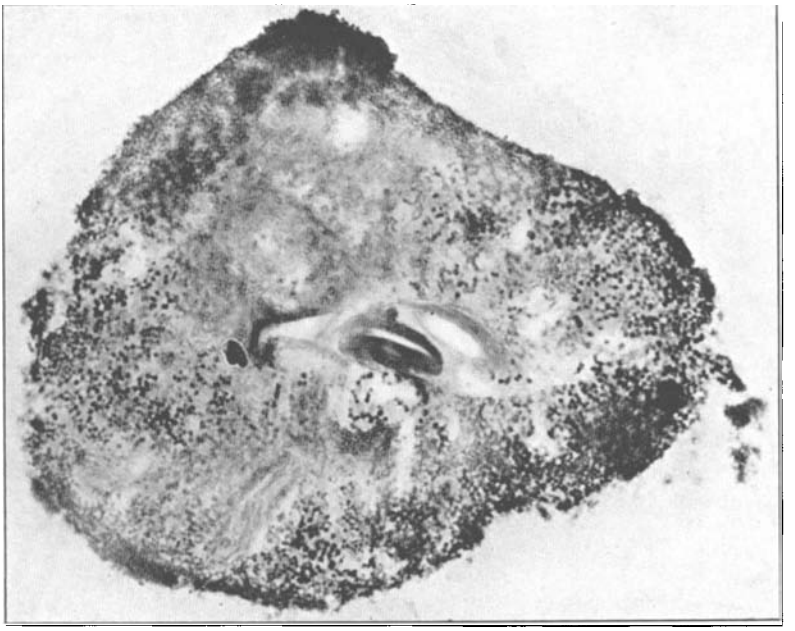
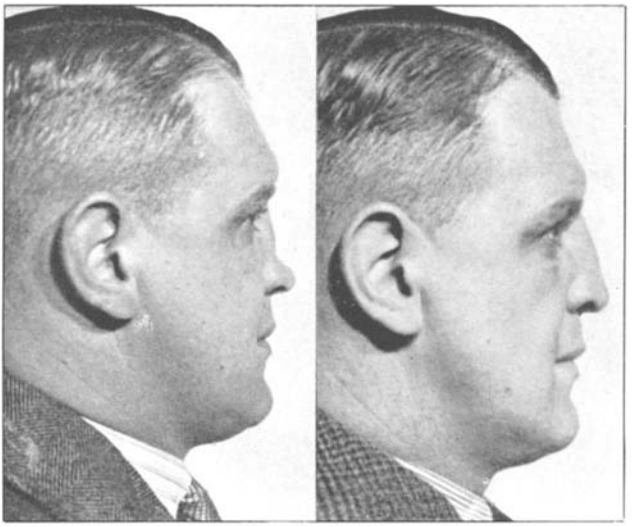


Fig. 2.

An oil-immersion micro-photograph of another portion of the same concretion, stained by Gram's method for organisms. In this particular area they are chiefly Gram-positive micrococci, both staphyloid and in short streptococcal chains, though elsewhere leptothrix-filaments (such as are common in tonsillar concretions) were also found. (Gram's method.) (× 1,200.)

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press



Case I.

[*face p.* 681

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

nasal and post-nasal catarrh for years, and there were symptoms which one would expect to find with a chronic infective condition of the nose. He (the speaker) once had a case of chorditis tuberosa in a clergyman which proved very intractable to treatment, but when he examined the nasal sinuses he found a definite source of infection there; and after this nasal sinus infection had been eradicated, the larynx cleared spontaneously. He suggested that in this case the condition of the nose should be investigated; it might explain why the patient had a recurring infection in the larynx. More often such infection was seen in the pharynx.

W. E. CARNEGIE DICKSON said that he had not previously encountered this condition in the mucous membrane of the larynx. The lesions were multiple. There was some surface epithelial thickening at the periphery but not directly over the concretions. Special staining methods were used to demonstrate that the core consisted of squamous epithelium, the remainder of the concretions consisting of an enormous mass of Gram-positive cocci. The centre of the concretion showed the ectopic cells. The epithelial thickening seen was what Sir James Dundas-Grant had diagnosed as pachydermia. There were also some leptothrix organisms, such as were sometimes found in tonsillar secretions. These organisms had evidently become practically non-virulent but, as an area of focal sepsis, constituted a potential source of septic absorption and danger to the patient.

W. S. THACKER NEVILLE asked why, if the cells indicated were ectopic epithelial cells, they should not be called malignant? And why could not giant cells be demonstrated if the lesion was due to a foreign body?

The PRESIDENT asked whether the bacteria found were of low malignancy or not.

Sir JAMES DUNDAS-GRANT (in reply) agreed with Dr. Watson-Williams that some nasal trouble was present. The patient's work was in a dusty atmosphere, largely metallic from chromium and nickel, and he used his voice a good deal. A re-development of the pachydermia might prove dangerous. He would examine the nasal sinuses again.

W. E. CARNEGIE DICKSON (in reply) said the ectopic cells and organisms could be carried in from the surface by injury, operation, or old disease. It was *not* malignant disease, as there was no active growth of cells; cells had merely been displaced or transplanted and had survived in the new position. There was now only very slight inflammatory reaction. The organisms had been there a long time and the tissues had become accustomed to their presence. He could not find any trace of neoplastic formation.

In answer to the President, the bacteria present were probably practically non-virulent now.

Restoration of Depressed Nose by Grafting of Cartilage: Six Cases.—A. H. MCINDOE.

Group 1.—*Hinged Cartilage Graft.*

I.—A. C., male, aged 40, ex-R.A.F. Aeroplane accident in 1919, with depressed fracture of nasal bones and loss of cartilaginous

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

septum. Cartilage graft inserted at that time but result indifferent. First seen *October 26th*, 1933. Pronounced saddle deformity of nose. Nasal bones flattened, septum absent. Small piece of grafted cartilage lying over the nasal bones insufficient to restore the bridge. Operation *November 15th*, 1933 : Previous graft removed and hinged cartilage graft, cut from the right seventh rib, inserted through columellar transfixion incision.

II.—R. B., male, aged 17. Football accident, when aged 12, resulting in suppurating hæmatoma of septum, and complete loss of cartilaginous support. First seen *October 6th*, 1933. Typical saddle deformity of nose. Complete absence of septum, and marked widening of alar bases. Operation *October 10th*, 1933 : Massive hinged cartilage graft cut from the seventh costal cartilage and inserted through columellar transfixion incision.

III.—F. S., female, aged 17. Fell over iron fence, when aged 7, and fractured nose. Three weeks later suppurating hæmatoma of septum drained. Subsequently nose became flattened. First seen *June 28th*, 1933. Extreme degree of flattening of bridge, and tilting of tip of nose. Operation *June 29th*, 1933 : Hinged cartilage graft cut from right seventh costal cartilage, and inserted through columellar transfixion incision.

In these three cases the hinged graft was used because support for the tip was required. Elevation of the tip of the nose materially diminishes the amount of widening of the alar bases, and adds to the attractiveness of the result.

Group 2.—Straight Cartilage Graft.

IV.—C. S., male, aged 54. Three months previously motor accident resulting in an extreme degree of facial deformity, and multiple fractures of the facial bones and lower jaw. First seen *December 20th*, 1932. Multiple operations for facial restoration, including rhinoplasty by forehead flap. The support for the new nose was obtained by inserting a massive straight cartilage graft cut from the right seventh costal cartilage. In this instance the straight graft was used because of the complete absence of septal mucous membrane in which the supporting piece might have been embedded.

Group 3.—Septal Cartilage Graft.

V.—G. B., male, aged 24. Broken nose, aged 6, followed by operation for nasal obstruction. Since then gradual increase of nasal crookedness. First seen *September 14th*, 1933. Marked degree of deflection of the nose, first to the right and then to the left. Dislocation of the cartilaginous portion from the bony septum. The crookedness of the nose was entirely due to the deflected septum, the nasal bones being straight. It was decided that the best result would be obtained by removing the deflected septum and utilizing

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

it in modified form to restore the bridge line. Operation *September 21st*, 1933: In conjunction with Mr. D. R. Wheeler, I removed the entire septum, with the exception of a small supporting piece along the anterior border, designed to support the tip of the nose. A straight cartilage graft was then prepared from the removed septum and inserted through a separate incision beneath the bridge. This method of regrafting cartilage following submucous resection has proved extremely valuable in extreme degrees of cartilaginous crookedness.

Group 4.—Osteochondral Graft.

VI.—W. C., male, aged 9. Twelve months previously struck on nose by cricket bat, resulting in depressed fracture of nasal bones and hæmatoma of septum. First seen *January 19th*, 1934. Nasal bones flattened, septal cartilage absent, typical saddle deformity. Operation *April 13th*, 1934: Osteochondral graft removed from right seventh rib. This consisted of 1 in. of rib including the costo-chondral junction removed subperiosteally, and split longitudinally. The bony portion was splayed out to form the new nasal bones, while the cartilage took the place of the missing septum. It was inserted through a split columellar incision after suitable under-mining of the soft tissues of the bridge. This type of graft is useful in children as it probably increases in size *pari passu* with the child.

Discussion.

The President said that in the previous week he had performed one of these operations, and was impressed by the good access to the roof of the nose. It was easy to put in the graft when a full exposure had been made. He wondered why bone had been used in the cases demonstrated, in addition to cartilage, and whether whole cartilage would not have done as well. He also wondered whether the bone always lived when it was so placed in position. If not, infection would be a serious matter. The incision used in these cases was a great improvement upon the old one. Had Mr. McIndoe any suggestions for the repair of small perforations in the septum, which were a source of trouble after operation?

W. E. Carnegie Dickson said he would like to know more about the survival of the cartilage grafts, as cartilage was a non-vascular tissue. Was it because of that fact that it survived? Was it because it obtained its nourishment by a process of diffusion or osmosis from outside? He would expect bone to form a mere scaffolding, and then undergo gradual absorption.

W. S. Thacker Neville said he had used this type of graft for syphilitic cases, and much improvement had followed. The removal of cartilage subperichondrially rendered the operation easier, as when performing these operations he had punctured the intercostal artery, and on one occasion the internal mammary artery. The incision now described would enable the surgeon to avoid these pitfalls.

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

W. J. HARRISON said that though not actually germane to the subject, he would like to mention one point. When carrying out submucous resection he always removed as large a piece of cartilage as he could and put it into warm saline solution. It was not always possible to avoid tearing the mucous membrane on both sides. Should this happen, he placed a piece of cartilage between the two flaps at the site of the perforations.

BEDFORD RUSSELL said that he had had some experience in the use of cartilage grafts at the hospital at Sidcup, and was aware of some of the difficulties. He had been particularly impressed by Mr. McIndoe's remark about making a nose out of a bald head ; that statement would be appreciated by anyone who had seen hair growing on a flap much more profusely than it had done when the tissue grafted was in its original site. Even if one chose sites which were practically hairless, one could sometimes see it producing practically a beard in its new situation.

With regard to the remark that the boy had lost support for the bridge of his nose, and that therefore it had dipped following septic hæmatoma, the speaker would rather put it that the bridge had been *pulled in by scar-tissue*. He did not think that much support was needed for the bridge of the nose ; and if the nasal bones and alar cartilages were present, the nose stood up well, unless scar-tissue was exerting traction.

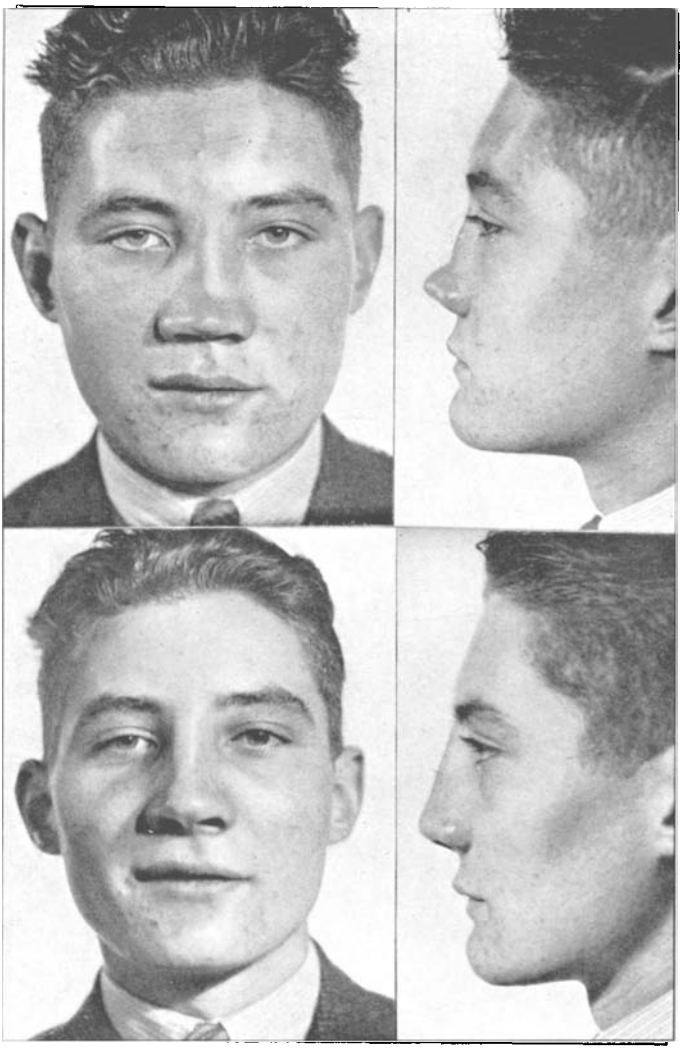
J. F. O'MALLEY said that during the War he had seen some cases with subsidence of the nose, and some that were the result of submucous resections of twenty-five years previously.

He inserted two separate pieces, one running under the bridge, the other into the columella. He had not treated any cases by the method now described, which seemed to show an excellent approach, and gave an opportunity of using a larger piece of cartilage.

E. A. PETERS said that if a cartilage graft was inserted over a mass of fibrous tissue, firm union resulted. Many years ago, in a case of gunshot wound of the jaw in which there was fibrous union, he had performed a subcutaneous operation and inserted a cartilage graft over the fibrous union. Within three months there was comparatively firm union, and the patient was able to masticate.

A. H. MCINDOE said that the incision depended on the type of graft. A hinged graft required a large exposure. The knife was introduced through the membranous septum and then turned forward, and brought straight out through the base of the columella. The columella was then separated from the septum to the tip of the nose and lifted by a small hook. For a straight cartilage graft he used a split columellar incision, and for the septal cartilage graft either a split columellar incision or a small incision inside the nose at the junction of the ala with the columella. Lifting the columella from its base was found to give adequate exposure and practically no visible scar after resuture. One removed about three inches of costal cartilage completely and divided it longitudinally into two portions. One portion was used as a graft and the other was put back as a spare beneath the skin in case of accident to the first piece. The shape of the graft was modified according to the type of the

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press



Case II.

[face p. 684

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

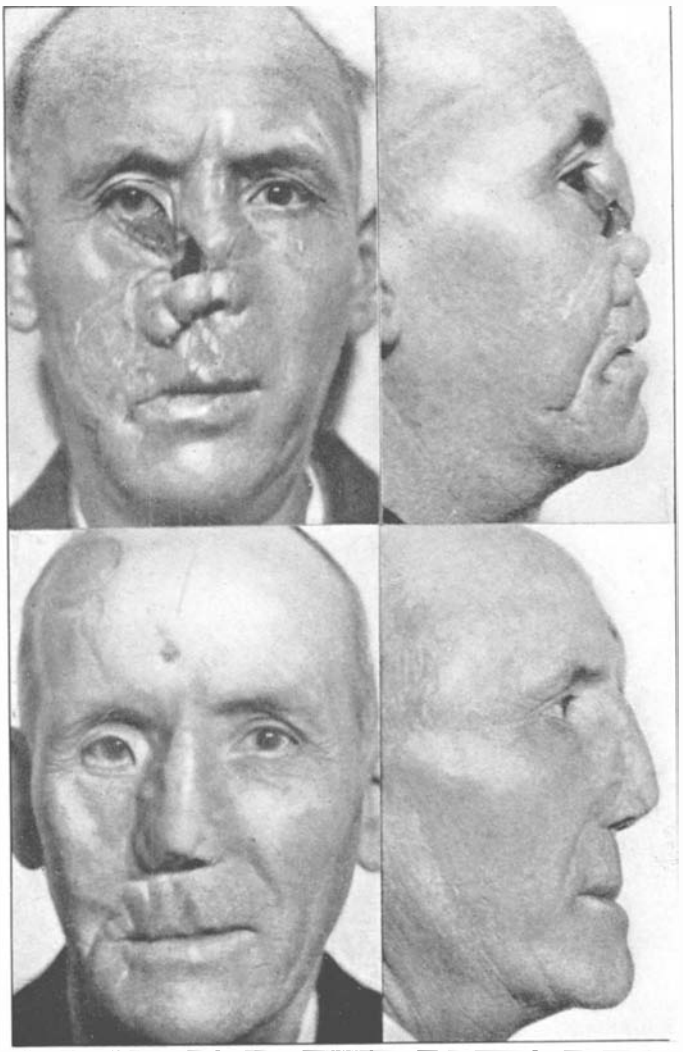
https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press



Case III.

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press



Case IV.
Straight cartilage graft to nose after rhinoplasty.

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press



Case V.
Septal cartilage graft to nose after submucous resection.

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

depression and the size of the nose ; but in general consisted of a bridge piece to support the bridge and a columellar piece intended to rest against the nasal spine and connected to the bridge piece by a perichondrial hinge. The remainder of the graft was entirely denuded of perichondrium.

In reply to Mr. Carnegie Dickson's question of bone *versus* cartilage : he (the speaker) had used bone for some cases, but as this had been removed from the crest of the ilium, it might not be considered to be entirely bone since it contained a considerable amount of dense fibrous tissue and some cartilage. He believed that a bone graft such as would be obtained from the tibia would gradually be absorbed from its lower free end. There was evidence to show that a bone graft did not remain as such, but was gradually replaced by a process of creeping substitution and hence, in a few years' time, it was not the same bone that was inserted. This occurred provided the graft obtained bony union at both ends. Hence a straight bone graft to the nose consisting only of bone would be gradually absorbed from the lower end upwards. Another difficulty with regard to bone was the troublesome shaping and manipulation.

There was no question of the survival of cartilage grafts ; they did not tend to be absorbed but remained *in situ*. If for any reason one was obliged to remove a cartilage graft, it was found to be in practically the same condition as when it was inserted. Presumably it was nourished by lymph.

With regard to perforations of the septum, he (the speaker) had had very little experience ; but he believed that if a small perforation could not be closed by a plastic-flap operation from the surrounding mucous membrane, the best treatment would be to make the perforation bigger, as it was found that the bigger the hole the less trouble it gave.

In reply to Mr. Thacker Neville, he would point out that only an osteochondral graft was removed subperiosteally, as it was so close to the pleura that there was some danger of opening the pleura during removal. At the costochondral junction the periosteum and the pleura were very adherent. In removing the ordinary costal cartilage, sufficient length was stripped of its muscles and removed with the perichondrium intact. There was no danger provided one did not go too deeply.

In reply to Mr. Bedford Russell, he thought that the dose of X-rays required to epilate a piece of skin would so damage the surrounding epithelial cells as to decrease their vitality seriously. He had found that skin grafts removed from other portions of the body and used on the face, frequently showed a profuse growth of hair within a short time. This was probably due to the fact that when apparently hairless skin was shifted to a part of the body where it was free from the friction of clothes, hair was able to grow.

Papillomata of the Nasal Mucosa.—EDWARD W. BAIN.

Male patient showing numerous papillomata in left side of nose. Similar case exhibited in 1911.

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

DISCUSSION.

HERBERT TILLEY said he doubted that this was a case of simple papilloma; it looked more like a congested granulomatous mass on a broad base. He advised that a substantial portion should be removed and carefully examined by a pathologist. If the growth proved to be malignant the whole septum should be removed.

T. B. JOBSON said that a year ago he had had a case almost identical with this. He had first dissected off the growth, under the idea that it was a bleeding polypus of the septum. It returned, and he then diathermized the remains. It again returned, and he then put some radon seeds around the site. Since then the case had progressed favourably. The Pathological Department reported that the growth was of low-grade malignancy.

W. STUART-LOW said that he had had two similar though less extensive cases. After getting the nose clean and aseptic he had begun to take off pieces fairly freely, and then, the bleeding being stopped by pressure, he rubbed the papilloma with a nitrate of silver stick, after which the condition cleared up and there had been no recurrence.

BEDFORD RUSSELL said that he had seen two such cases, one in a man, and the other in a woman. Both were treated with radium, and the condition disappeared and did not recur. He did not know why radium removed these growths, because papillomata, especially laryngeal ones, had an infective factor.

E. W. BAIN (in reply) said that when he had shown the similar case in 1911, he had believed the condition to be very rare, but most of the members then present seemed to have seen several cases of it. He did not think, however, that another case of the kind had been shown since then. The former case was also shown by the late Mr. Hunter Tod in 1914, and then the growth had invaded the antrum on the same side. It seemed to be malignant, but Professor Turnbull, who had examined sections from it, thought it was only on the way to becoming malignant, Professor Stewart, who had examined sections from the growth in the present case, reported that it was a typical squamous-celled papilloma, but at one point there were appearances suggestive of commencing carcinomatous change. If any operation were performed, it must be an extensive one, as the growth covered practically the whole septum on that side, and involved the inferior turbinate.

Right Frontal Sinus Suppuration with Orbital Abscess. Abscess of Left Frontal Lobe producing Bilateral Visual Defects. Operation. Recovery, with Partial Blindness.

—L. GRAHAM BROWN.

Male, aged 18, referred *September 14th*, 1933, by Dr. Gordon Holmes as a case of abscess of the frontal lobe following suppuration of the right frontal sinus.

Previous history.—December, 1932: Enucleation of tonsils and submucous resection of septum at another hospital. *June*, 1933: Onset of symptoms of suppuration of the right frontal sinus, complicated by an abscess of the right orbit. An ophthalmologist

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

incised and drained the orbital abscess. *July 13th*: The patient complained of headache, and two days later vomiting occurred. The right frontal sinus was thereupon opened and drained through the original incision in the upper eyelid, a large quantity of pus being evacuated. Intermittent vomiting occurred until *July 19th*, and after this operation the patient noticed dimness of vision for the first time. He saw only the lower half of the visual field in the right eye, and there was an enlarged blind spot in the left eye. *September 14th*: On admission examination showed a healed scar above the inner canthus of the right eye. The nasal fossae appeared normal, and there were no other apparent symptoms beyond the loss of vision previously stated. The patient was observed for a week and further examinations undertaken. Skiagrams showed only a slight density of the right frontal sinus. The blood-count gave an increase of white cells (12,400), and examination of the cerebrospinal fluid showed a cell count of 6 per c.mm. (lymphocytes).

Ophthalmological report.—Mr. W. H. McMullen: Right eye: Loss of the upper half of the visual field. Marked papillœdema, disc margins blurred, particularly in upper nasal part. Left eye: An enlarged blind-spot in the visual field. Papillœdema, disc margins obscured.

September 21st.—At a first operation the anterior and posterior walls of the right frontal sinus were removed. It was then noticed that, since the sinus was large and overlapped the middle line, the left frontal lobe also came into relation with it. Moreover the appearance of the dura suggested that the path of infection to the brain was towards the left frontal lobe. At a second operation, a week later, a large abscess was found in the left frontal lobe, although this was not located until after the right lobe had also been explored. Tube drainage was carried out, and the wound partially closed. The pus grew a pure culture of *Staphylococcus aureus*. Recovery from the operation was uneventful, and the wound healed completely in three weeks. However, at the last examination of the visual fields, on *February 21st*, 1934, only slight improvement of the eyes was recorded.

There are several points of interest in this case. One is the comparative mildness of the symptoms of the frontal lobe abscess, particularly after the initial recovery from the sinus and orbital symptoms. Next is the rarity of contralateral brain abscess following frontal sinus suppuration. This is due to the fact that the right frontal sinus overlapped the mid-line towards the left frontal area. As for the eye lesions, we have here peculiar bilateral effects. In the right eye there was horizontal hemianopia, in the left a central scotoma.

I was careful not to disturb the overlying meninges, though the right frontal lobe was explored before I found the abscess in the left lobe.

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

My method of drainage was simply to insert a rubber tube split at the outer end, and kept open with a safety-pin. No doubt recovery was largely due to the fact that there was a single abscess, not a multilocular one, and that I was able to avoid infection of the meninges.

W. E. CARNEGIE DICKSON suggested that the remarkable success in this case might have been due, in part at all events, to the fact that the organism was a staphylococcus. When the organism was the *Streptococcus pyogenes*, the prognosis was much more likely to be fatal from a meningeal spread.

Two Specimens: Abscess in Frontal Lobe of Brain. Sinus Suppuration.—E. D. D. DAVIS.

I.—Following chronic frontal sinus suppuration.

Male, aged 20, received a blow on the forehead, followed a month later by an abscess over the supra-orbital margin. Abscess opened, but patient gradually became drowsy. On one occasion the patient probed the sinus himself, and suddenly felt something give and experienced pain. He may have thus perforated the inner wall of the frontal sinus. When admitted to hospital there were sinuses over the orbit. Upper eyelid swollen. Patient drowsy and unable to calculate simple addition sums. Speech slow and hesitating. Severe headache. Right eye showed optic neuritis.

Superficial abscess and frontal sinus opened and found to be full of pus and necrosed bone. Considerable improvement followed. Eight days later headache and drowsiness returned. Purposeless movement of limbs. Brain abscess opened and drained. The patient died four days later.

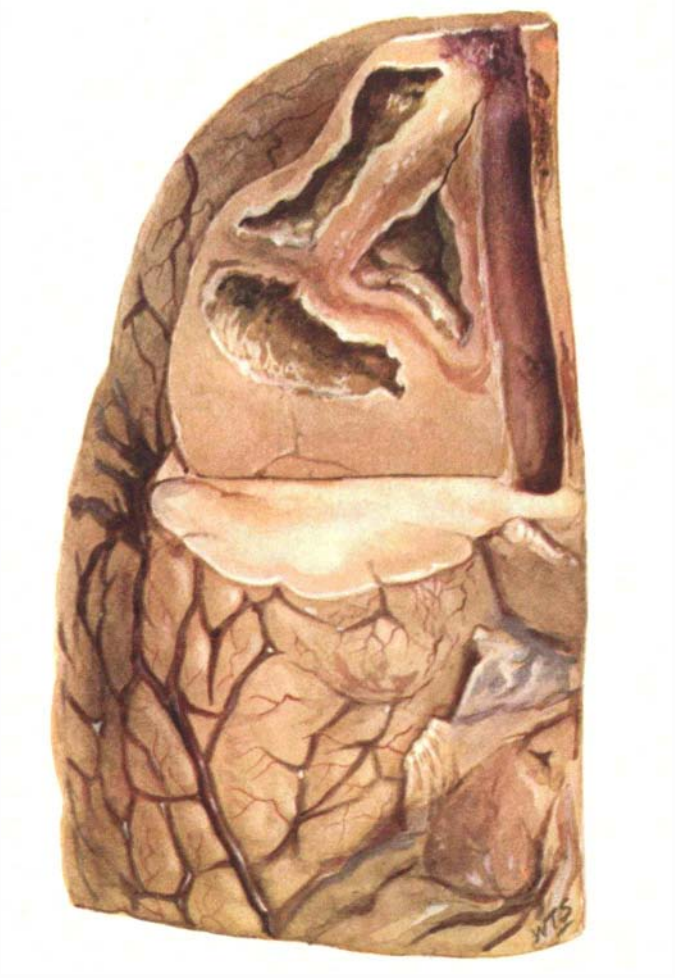
II.—Large abscess in left frontal lobe, due to foreign body in the nose.

Male, aged 17. Admitted on account of headache and coma. He had had three fits, two before a fall, one since; did not bite tongue or pass water; experienced an aura, i.e. shivering, some short time before their onset. Five years ago he fell on to a curb, striking the right temple; lost consciousness, but except for pain where struck he was soon well. Three months later he complained of headache, not very severe, lasting two or three days. During last four weeks memory failed, headaches became more frequent, of longer duration, and more severe; during the last two weeks there was continuous headache with giddiness, and patient had been kept in bed. *On admission*: retention of urine; catheterized; large amount drawn off. Eyes: Both discs and surrounding fundus congested, outer margin of left, and the upper and inner margin of

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

Plate I



John Bale Sons & Danielsson, Ltd. London

Multiple abscesses in the frontal lobe of the brain, secondary to frontal sinus suppuration (Charing Cross Hospital Museum).

[*face p.* 689

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

right disc ill-defined, no actual swelling. Veins much enlarged. ? Early optic neuritis. Pupils both react normally. Knee-jerks increased on left, normal on right side. Back of neck stiff and slightly painful. Drowsy. Became more comatose and unable to swallow. Fed by tube. Incontinence of urine. Knee-jerks diminished, then absent. Optic neuritis developed and a small right corneal ulcer. Later, ankle clonus and Babinski's sign developed on left side, absent on right. Temperature throughout normal or just subnormal, except during the last three days, when it rose to 101°. Cheyne-Stokes respiration developed a short time before death. No nasal symptoms.

At the *post mortem* examination a slate pencil was found passing through the antero-internal portion of the orbital plate in the region of the anterior ethmoidal cells. The pencil had penetrated for 2 centimetres from the nose into the anterior fossa of the skull, and was firmly fixed. The dura was not perforated and there was no extradural suppuration, but there was a large intracerebral abscess in the frontal lobe. It was not known how long the slate pencil had been in the nose.

The brain showed externally a patch of firmly adherent dura mater, and just to the left of the mesial fissure in front of the olfactory bulb there was a slightly depressed area covered by thickened opaque pia-arachnoid, which lay in contact with the slate pencil. The smooth appearance of the cortex from compression of convolutions was well shown. The cut surface showed considerable enlargement of the left frontal lobe, which contained an abscess cavity 4·5 by 5 centimetres, of irregular shape and partly enclosed by a fibrous capsule, surrounded by infiltrated œdematous brain substance. The contents consisted of thick, foul pus and necrotic brain substance, of which some adhered to the wall. Towards the left, a recent extension of the pathological process has occurred, where a considerable amount of brain substance is seen in various stages of necrosis. The lateral ventricle is greatly compressed, the anterior horn being practically obliterated.

Microscopically.—The wall consists of necrotic white material infiltrated with inflammatory round cells. Both specimens are shown with the object of illustrating the difficulties of drainage of a brain abscess.

The first specimen (Plate I) shows the damage done by a drainage tube introduced into the brain. It is presumed that the pulsation of the brain has displaced the tube and made it useless. At the operation there was no doubt that the drainage tube was introduced into the abscess cavity and stitched to the scalp. The operation was done by an experienced surgeon who had been a house surgeon to Sir William Macewen.

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

During the War it was soon discovered that if a drainage tube was inserted into the brain nearly all the patients died of meningitis or encephalitis, commencing about the fifth or sixth day. On the other hand, if the wound was thoroughly cleaned, and if all foreign bodies and débris were removed and the wound closed without drainage of any kind, 52 per cent. recovered. If a brain abscess is carefully cleansed of all sloughs by gentle irrigation with normal saline or Ringer's solution, through an aural speculum or a two-way catheter in which all fluid is allowed to escape freely, a drainage tube or similar appliance does more harm than good, and this is particularly true of an acute abscess. Drainage tubes of any kind or gauze wicks, should be avoided whenever possible. It is better to risk a second operation than to insert a drainage tube. Whatever type of drainage is adopted, no pus escapes through the tube after the first few hours. The fact that so many different types of appliance for drainage have been tried indicates that none of them is satisfactory. The pressure of the drainage tube damages the tissues, and sooner or later a secondary infection is inevitable. A gauze drain or packing is worse than a drainage tube.

The treatment of a *chronic* abscess must be more thorough, but the operation can be so designed as to make the insertion of tubes and such appliances unnecessary. I have never had the good fortune to see a chronic brain abscess which could be enucleated like a tumour. Sir William Macewen, whose success in the treatment of brain abscesses of forty years ago has not yet been equalled, avoided drainage tubes in cases of acute abscesses. In his book he strongly emphasizes the importance of thoroughly cleaning out all the sloughs by irrigation and evacuating the abscess as completely as possible. His operations were designed to avoid drainage tubes. It is true that in chronic abscesses of long duration he reluctantly inserted decalcified bone tubes which were quickly softened and absorbed. The dressing was also left undisturbed as long as possible, even for two or three weeks.

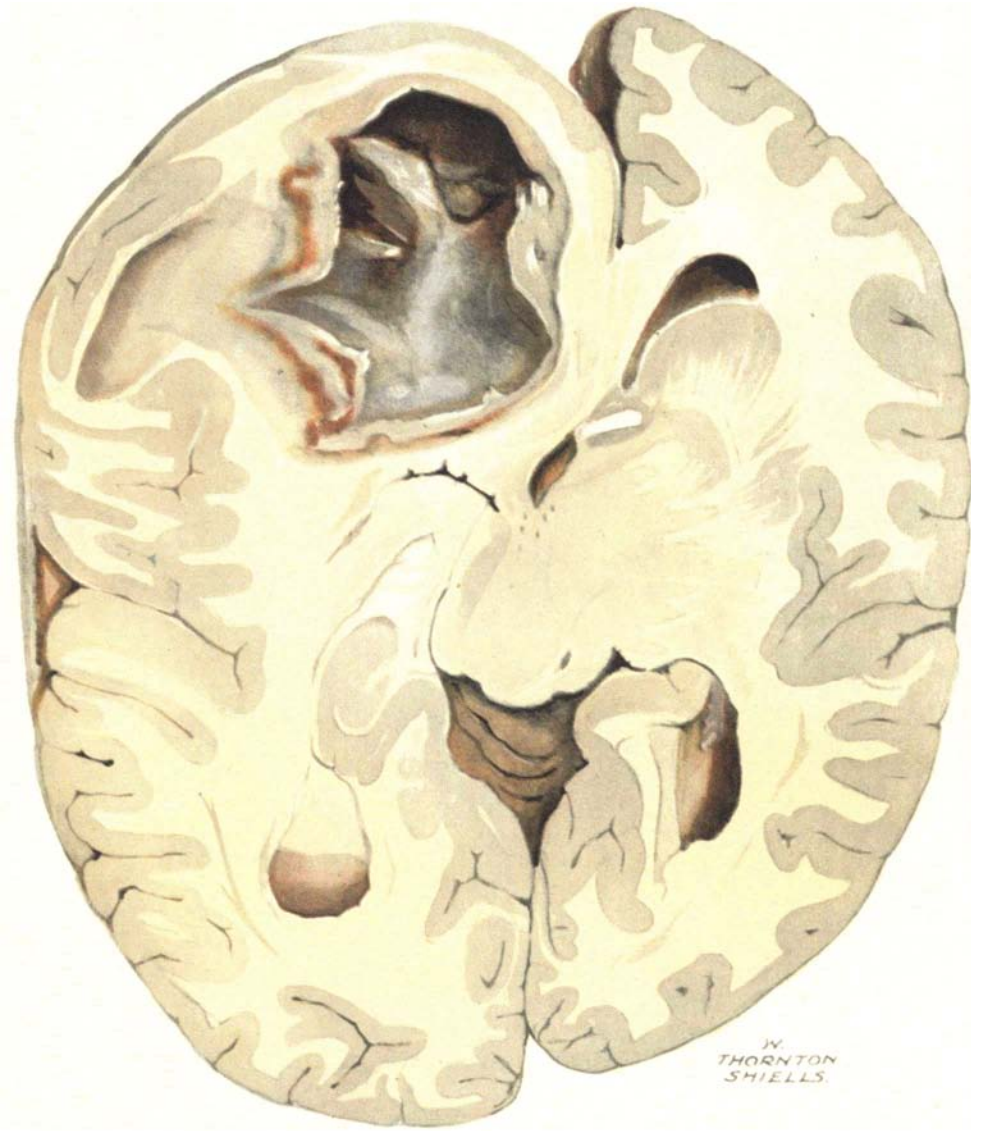
These remarks concerning the drainage of brain abscesses can be applied with greater confidence to abscess in the neck. If such abscesses are completely opened, drainage tubes are unnecessary and the scarring is considerably reduced. No one ever attempts to insert any type of drainage appliance into a retropharyngeal abscess, with the result that the healing of a retropharyngeal abscess after free incision is a matter of hours. The success of the acute mastoid operation depends on the opening of every suppurating cell and not on the introduction of drainage tubes. It is the unopened suppurating cell and not the absence of a drainage tube which leads to trouble.

I have been present at no less than four discussions on the treatment of abscesses of the brain, and each time the discussion has been mainly as to what material or type of tube should be used

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

Plate II



John Bale, Sons & Danielsson, Ltd. London

Large abscess in the left frontal lobe of the brain, arising from a foreign body in the nose (Charing Cross Hospital Museum).

[*face p.* 691

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

for drainage or, incidentally, as to whether the brain should be explored with the finger when a trocar fails to find pus.

The question is, how can a drainage tube be avoided, and not what type of appliance should be used? If such an appliance cannot be avoided, then a double tube is the most satisfactory, but I am convinced that greater success can be obtained by discarding such appliances for drainage. It is important to know if anyone has seen a case in which failure could be definitely attributed to the absence of a drainage tube, or to the too early removal of the tube. Multiple abscesses, as in this case, are frequent, or another abscess develops later. Such a condition can only be detected by an encephaloscope, such as an aural speculum, or by gentle exploration with the finger.

The illustration of the second specimen (Plate II) shows a large frontal lobe abscess resulting from a sharp slate pencil which had been accidentally forced through the roof of the nose into the anterior fossa of the skull. The patient was comatose when admitted to hospital, and in consequence the history of how the accident happened is unknown, but it is probable that the slate pencil was driven through the roof of the nose during a fall five years before death. The pencil had passed through the anterior ethmoid cells and the roof of the lateral mass of the ethmoid, and projected for 2 cm. into the anterior fossa of the skull. The pencil must have penetrated the dura and so caused the abscess, but at the necropsy the dura mater had healed and there was no extradural abscess. It is extraordinary that the patient survived this injury more than a few days. When the roof of the ethmoid has been accidentally perforated during a nasal operation the patient has died within a few days from a basal meningitis.

The extensive œdema and enlargement of the whole of the cerebral hemisphere is an indication that the compression should be relieved by removing as large an area of bone as possible. A large opening in the skull allows the meninges to bulge into the aperture and this helps to shut off the subarachnoid space; in addition sufficient room is obtained for gentle manipulation and for drainage to be established at the most desirable point.

Specimen: Lymphangeioma of the Œsophagus.

—E. WATSON-WILLIAMS.

Male, aged 61, complains of aching pain in the chest in the region of the lower portion of the sternum during two months, and vomiting (i.e. regurgitation of unaltered food) during the same period. Pain may occur at any time, even at night, and is not connected with taking food; he can take fluids fairly well, but all solids are rejected. No loss of weight; no palpable glandular or other swelling. A

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press

barium bolus shows considerable dilatation of the œsophagus, which is slightly tortuous to the right, and apparently complete arrest of the bolus immediately above the diaphragm; the outline of the obstruction is irregular.

Direct œsophagoscopy.—The entrance of the œsophagus is normal; the lumen is about twice as wide as normal. The mucosa is whitish and macerated; no ulceration. No obstruction until 46 cm. is reached from the teeth (i.e. further down than the normal depth of the cardia). Here the lumen is abruptly terminated by a collection of four or five round, smooth, bright red masses, not friable, not ulcerated, not bleeding on contact. No lumen could be discovered; bougie dilatation not attempted.

Biopsy.—Report by Dr. A. D. Fraser: "Portion of dermal tissue covered by hypertrophic (œsophageal) epithelium. There are numerous small spaces giving the appearance of lymph channels and a few muscle cells. The condition is lymphangeioma. No evidence of malignant change."

April 12th, 1934.—Ten radon seeds (2 mc. each) inserted (0·5 mm. platinum screen).

POSTSCRIPT.—*June 20th*, 1934.—Numerous nodules felt in the abdomen suggested that the growth is a lymphosarcoma with peritoneal secondary deposits. Swallowing of all foods is good but the patient is losing weight.

ABSTRACTS

EAR

On the question of the Fistula sign. L. TRÜBSBACH. (*Zeitschrift für Laryng.*, 1934, XXV., 94-103.)

The various theories which claim to explain the fistula sign are briefly reviewed in this article (Mygind, Herzog, Wittmaack, Ruttin). The most satisfactory explanation, according to the author, is that of Professor Uffenorde (Marburg), whose views are supported by certain experiments described as follows:

After completing the radical mastoid operation and obtaining a free exposure of the external semi-circular canal, a tiny pledget of cotton wool soaked in ether is applied to the bony labyrinth behind the external canal. The result is a nystagmus to the

https://doi.org/10.1017/S0022215100040731 Published online by Cambridge University Press