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ART. XIX. — *On the Taliacotian Operation*. By WILLIAM STOKES, M.Ch., Univ., Dub.; F.R.C.S.I.; President of the Pathological Society of Ireland; Professor of Surgery, Royal College of Surgeons; Surgeon to Richmond Surgical Hospital; Fellow of the Royal Medico-Chirurgical Society of London; Member of the Clinical Society of London; formerly Examiner in Surgery to the Queen's University of Ireland; Member of the Royal Irish Academy; Consulting Surgeon to the Dental Hospital of Ireland; Corresponding Member of the Hufeland Medico-Chirurgical Society of Berlin; Member of Council, Royal College of Surgeons and Surgical Society of Ireland; &c.

THE following case is of interest and deserving of record, in a threefold point of view—first, on account of its surgical importance; secondly, from the fact of its possessing to a certain extent a distinctly romantic character; and, lastly, from the patient being, as far as I am aware, the subject of the first Taliacotian rhinoplastic operation performed in Ireland:—

About four years ago J. H., aged seventeen, while playing with a companion who was armed with a gun, which at the time he was not aware was loaded, received accidentally portion of a charge of shot in the face. The result of this was a deep wound on the right side of the cheek, and also the loss of fully one-half of the nose. The wound on the cheek was followed by the formation of a well-marked and very disfiguring cicatrix. The appearance of this, as well as the nasal defect, is faithfully represented in the accompanying lithograph (Plate I.) taken from a photograph representing the deformity when he first consulted me. This was a

few weeks after he had sustained the accident. The patient was very anxious to have an operation performed, but at the time I endeavoured to dissuade him from it, as flaps from the cheeks were not available, owing to the large amount of cicatricial tissue there. The other method of which I had experience—viz., the Indian rhinoplastic operation—is one which necessarily leaves a disfiguring scar on the forehead, and the making of this would have been a regretful circumstance, having regard to the patient's youth and good looks. Under these circumstances I recommended the patient not to have any plastic operation performed, but to get an artificial nose made of vulcanite or some similar substance. This he did, going to London for the purpose at great personal inconvenience and expense. The artificial nose (in the making of which great skill and ingenuity was displayed) he wore for upwards of two years, though neither he nor his friends were very well satisfied with it.

Among the latter, as I was informed—though I give this “under reserve”—was a young lady with whom he formed an attachment, which those principally concerned hoped would eventuate in a matrimonial alliance. This circumstance naturally made the patient very urgent to have a plastic operation of some kind performed.

Accordingly he came up last October a second time to consult me. Being unwilling to perform the Indian Rhinoplastic, for the reasons already mentioned, it occurred to me that the case was one suitable for the Taliacotian operation. I had recently had the pleasure of reading Sir William MacCormac's interesting communication on this operation in Vol. X. of the “Clinical Society's Transactions,” and I had also the advantage of getting his opinion on the case during a short visit to Dublin which he paid last October. His opinion was that it was one eminently suitable for the Taliacotian operation, and kindly consented to lend me the apparatus—one he used in his case—and made very much on the principle of that described and illustrated in the classical work of Taliacozzi, published in Venice in 1597. As I purposed utilising the margins of both nostrils, I determined to free them by cutting through the tissues all round, leaving them, however, attached at each side of the ala of the nose. On drawing down the partially separated margin of the nostril, it was clear the defect to be remedied would be somewhat lozenge-shaped, and that the flap on the arm would have to be formed accordingly. The shape of

the flap, therefore, was somewhat like the accompanying rough diagram, great care being taken to make due allowance for the subsequent contraction of the flap, both previous and subsequent to its transplantation to the face.

On the 8th November I performed the first part of the operation—namely, the formation of the lozenge-shaped flap from over the left biceps, attached below by a broad pedicle; a piece of lint soaked in carbolic acid was laid under it, cotton wadding wrapped round the arm, and the whole limb from the fingers to the shoulder wrapped in a soft thick flannel bandage. Immediately after this a most unhappy sequence of events occurred. On the morning following the operation the patient's temperature was found to be very high, being 104° , and pulse 102. He had slept badly, and had much inclination to nausea. Later in the day the face became much flushed and swollen, and it was soon apparent that the patient had erysipelas of the head, there being, however, strange to say, no evidence of it in the immediate vicinity of the arm-flap. On the 11th November the fever was very high, the temperature reaching 105.4° , and the patient becoming very delirious during the night. From my hospital case-book I may extract the following notes indicating the progress of the case. They were taken, with his usual accuracy and care, by Mr. Cassidi, my resident clinical assistant:—

Nov. 12.—Temperature, 104.4° ; pulse, 102. Had three smart attacks of epistaxis last night; lost a good deal of blood; says he feels much better to-day. The wound was dressed by Mr. Stokes this morning; looking very healthy; no inflammation.

Nov. 13.—Temperature, 102.5° ; pulse, 96. Very troublesome epistaxis last night, after which he became very delirious; has remained so all day. Given chloral hyd., gr. 15, and potassii bromid., gr. 30, this evening; no effect.

Nov. 14.—Very delirious and violent; great difficulty in keeping patient in bed. Given with much difficulty pills containing extr. conii, and a mixture with potassii bromid. in infus. lupuli.

Nov. 15.—Slightly quieter last night; slept a little; passed a quiet, drowsy day.

Nov. 16.—Called up this morning at 5 a.m., his arm being bleeding; opened the dressings and found the hæmorrhage had stopped; a good deal of blood lost. Bleeding came on again about 11 a.m.; found that it proceeded from a small arterial branch. Mr. Stokes arrested it by applying a catgut ligature.

Nov. 17.—Weak to-day; not so restless. Ordered mist. diaph.; pulv. hydrargyri cum cretâ, gr. 1, quâque horâ. The erysipelas has appeared now in his left shoulder; painted it over with tinct. ferri perchlor.

Nov. 18.—The erysipelas has appeared now in his right shoulder. Tincture of perchloride of iron applied as before on left shoulder. Ordered ice and lemonade.

Nov. 19.—Weaker to-day. Ordered quiniæ sulph., gr. 3, ter in die.

Nov. 22.—Arm dressed to-day; a good deal of suppuration.

Nov. 24.—Patient much stronger, and in every way better.

From this the patient steadily continued to improve. It was not, however, until Dec. 12 (a month and two days after the first stage of the operation was completed) that I felt justified in proceeding to the second.

On the 10th Dec. I proceeded to perform the second stage of the operation. I commenced by transfixing the tissues all round the upper margin of each nostril, going through the lower portion of the septum also. It had, therefore, three points of attachment left—a central one at the septum and one at each side of the ala of the nose. I then drew down this partially detached portion of tissue to a point which I wished to correspond to the apex of the new nose. To keep it in this position, until the flap from the arm should unite to its edges, was a difficulty which, however, I overcame by the adoption of an expedient which I found to answer very well. I formed of some strong silver wire a buttress somewhat of this shape:—

One of the prong-like extremities of this buttress was fixed under the skin immediately overlying the nasal bones, and the other into the portion of tissue which was to form the apex. I considered, too, the buttress would also have the advantage of supporting the transplanted flap from the arm. This having been

done, the next stage of the operation was to transplant the lozenge-shaped arm-flap which, owing to the great length of time which had elapsed since it was made—a delay due to the supervention of the dangerous attack of erysipelas the patient had after the first operation—had become greatly contracted and shrunk. The apparatus already alluded to, for keeping the arm to the head until union should take place, was then adjusted, the construction of which can be understood by reference to the annexed lithograph (Plate II.), taken from a photograph made by Mr. Bulfin, one of the resident clinical clerks of the hospital, and also from the following description of it by Sir William MacCormac :—

To a pair of ordinary, stout, well-fitting stays were attached two perinæal straps to prevent displacement upwards. “A helmet, partly made of leather, was connected with the stays by a leather band running up the centre of the neck and back. A leather arm-piece, strengthened by a steel band, was moulded so as to extend from the wrist to the shoulder, where it was buckled to the stays. The wrist and hand were fastened to the helmet by a gauntlet, while the elbow could be fixed steadily in any required position by straps running from it to the stays and to the sides of the head-piece, so that there was nowhere any undue strain, the pressure being so evenly distributed that each strap was almost slack.”^a For some days previous to the performance of the second part of the operation the patient underwent a “drill”—namely, having to wear for some hours daily this apparatus, with a view of making him to a certain extent accustomed to it.

The edges of the arm-flap having been vivified and some of the redundant granulation tissue having been removed from its posterior surface, it was attached to its new position by numerous points of interrupted silver-wire sutures.

The following notes were then taken by Mr. Cassidi :—

11 p.m.—The patient has been comfortable and easy all day. His temperature is normal. The raw surface from which the flap was raised is dressed occasionally with lint dipped in carbolic lotion.

Second day.—Had a very good night; slept most of the time. Temperature quite normal; arm quite comfortable.

Fourth day.—Had a good night; pain in the arm last night. Hypodermic injection of morphia, m ij .

From this the patient continued very well and free from discomfort. He appeared to get quite used to the apparatus.

^a Clinical Society's Trans. Vol. X., p. 183.

On Dec. 24th, the fourteenth day after the transplantation of the flap, Mr. Stokes performed the third stage of the operation, separating the pedicle, and thus freeing the arm. The anticipated hæmorrhage did not occur to any very great extent; two carbolised catgut sutures only had to be applied. Mr. Stokes spent a considerable time in trimming and paring the flap and fastening the edges of the lower portion especially by numerous points of carbolised silk ligature. The patient's arm, after the fourteen days' rigid fixation to the head, was so stiff and painful that some time elapsed before it could be brought to the side. In a few hours, however, the pain subsided. For some hours the flap looked very pale, and its temperature was very low, so much so that fears were entertained as to its retaining its vitality. In this respect, however, there was marked improvement towards evening.

Dec. 26th.—Arm and nose dressed to-day; both looking very well. Patient feels much better. He has lost most of his hair, some of which fell out immediately after the erysipelas and some while wearing the Taliacotian apparatus.

Jan. 9, 1882.—The operation has been successful to a very considerable extent, though to improve the appearance of the nose Mr. Stokes contemplates a further operative measure.

Feb. 17.—Mr. Stokes operated on the nose to-day, elevating and partially excising portion of the cicatrix which had fallen in too much, producing a hollow or furrow on the right side, which was very disfiguring. This operation has been very successful.

March 1.—Mr. Stokes operated again to-day, dealing chiefly with the left side. A good deal of cicatricial elevation, trimming, and paring was done, which was followed by marked improvement in the appearance of the patient.

Shortly after this a photograph, from which the accompanying lithograph (Plate III.) is made, was taken of him, and gives a faithful representation of his present condition.

I was pleased to hear after the patient left the hospital that the result of the operation was such as to remove any obstacles that may have previously existed in reference to a realisation of his matrimonial projects.

From the above account it will be seen that the procedure adopted differed in some respects from the original operation of Taliacozzi. He made the arm-flap in the first instance attached by two pedicles, one above and the other below. When suppuration was established, the flap thickened, and the edges incrustated, "it was cut free at the upper end, presenting a line with the convexity directed upwards. It was then most carefully dressed and

attended to until the under-surface had become cicatrised as far as possible. Remaining attached by one extremity to the arm, it underwent a process of thickening, contraction, and wrinkling, accompanied with the growth of hair, which Taliacozzi fancifully compared to different stages of growth. About the fourteenth day after the second operation it was considered to be in a state of maturity.”^a In Sir William MacCormac’s case, in which, an admirable result was obtained, no interval was allowed between the formation of the arm-flap and its transplantation to the face. This method has doubtless some advantages, such as the flap not becoming so thickened, contracted, and wrinkled. However, I am glad I followed the Taliacotian method in the case above related, for the supervention of the attack of erysipelas which occurred, and was so nearly proving fatal, would have certainly led to failure as far as the operation itself was concerned.

The plan I carried out in this case of maintaining elevation of the flap by means of a silver-wire buttress, temporarily inserted under the flap, is one worthy of adoption by surgeons who feel themselves competent to undertake operations so complicated and difficult as that under consideration. This was not the first time I carried out the principle of elevation of the flaps by metallic buttresses in the rhinoplastic operation. In the pages of this *Journal* (Nov., 1877) will be found the record of a case I operated on, in which, during the healing of the flaps, elevation was maintained by an instrument illustrated in my paper, and which was made for me with much skill by my friend, Mr. W. B. Pearsall. The result of the case was most satisfactory. This instrument, however, is not applicable to the Taliacotian rhinoplastic operation, as in the latter the apparatus for fixing the arm to the head would not admit of its being used. Although the operation of Taliacozzi is one not likely ever to become of very general adoption, still cases will occasionally occur, like that recorded by Sir William MacCormac and the one under immediate consideration, in which it is certainly to be preferred either to the Indian Rhinoplastic or the old operation of Celsus as revived by Larrey, Dieffenbach, and Syme, in which the flaps are taken from the cheeks. The record of a case in which I performed this latter form of rhinoplasty will be found in the pages of this *Journal*.^b The case presents features of special interest to the operating surgeon.

^a Rhinoplasty. Holmes Coote. *System of Surgery*. T. Holmes. Vol. III., p. 117.

^b *Dublin Journal of Medical Science*. Vol. LIV. December, 1872. Page 442.