CASES
IN WHICH THE OPERATION FOR
THE REMOVAL
OF
CICATRICES FROM THE NECK,
CONSEQUENT ON BURNS,
WAS
SUCCESSFULLY PERFORMED;
WITH REMARKS.
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THE profession and the public are much indebted to Mr. Earle for the practice he has recommended and introduced in deformities consequent on burns*. In one species, however, arising from this cause, it certainly would appear that great difficulty has arisen in the application of his principle, and we have very high authority for believing that relief is not commonly obtained†. I allude to those cases where the cicatrix exists be-

* See two papers contained in the 6th and 7th volumes of the Medico-Chirurgical Transactions.

† Sir Astley Cooper's Lectures, edited by Mr. Tyrrel, vol. I. p. 178.

tween the lower jaw and sternum, an occurrence unfortunately not unfrequent. Three of these have come under my care, and in the two last every benefit was obtained from the operation that could be expected or desired. These cases I will relate, as they will serve to explain the plan I adopted.

CASE I.

Elizabeth Bully, a girl between eight and nine years of age, was admitted a patient of the Devon and Exeter Hospital, on account of a cicatrix of this kind, the consequence of a burn from which she had suffered about seven months before. It was large, broad, and dense, tying down the chin closely to the sternum, so that there was not an interval of more than an inch between them by measure : it was situate a little towards the left side, and the corner of the mouth was a good deal drawn down by it : it also projected much from the ordinary surface of the neck, so as to efface the projection of the chin.

March 9, 1824.—I performed the operation in the following way : I made two incisions, one at either edge of the cicatrix, extending to its termination at the upper part of the sternum where they met ; I then dissected up the flap, of which I removed no part, but having completely freed it, I found I was able to dispose of it out of sight under the chin. The distance between the sternum and

the chin was now increased to at least three inches by measure *.

I supported the cicatrix in its situation, first by broad straps of adhesive plaster, and secondly by a compress of lint secured by a broad fillet fastened at the top of the head, so as to make a good chin. I then tried to approximate the edges of the wound beneath by straps of plaster, but this could only be accomplished in a partial manner. I then put on the screw collar, the construction of which is described at the end of this paper. I soon found that this was of no service, for when the wound inflamed and became irritable, she contrived, from its being rather too large, to slip the chin within it. I therefore contented myself with applying a collar of pasteboard with a poultice underneath, and laid her head nearly on the same horizontal line as her body, till a smaller screw collar could be made. In the mean time suppuration was freely established, and the irritation of the wound having subsided I was enabled after a few days to apply this.

In the course of the cure this girl was attacked by measles, which somewhat delayed it; notwithstanding which, the sore healed in about four months. A similar period has since elapsed,

* It is generally necessary to set free the edges of the wound by little transverse cuts, which was done in this and the succeeding case.

during which, instead of any ground having been lost, I think the parts have given way still more, and the distance between the chin and sternum is now three inches and a half. The old cicatrix is perfectly concealed under the chin, and as she grows up I think very little trace will remain of this deformity.

CASE II.

Elizabeth Beal, aged thirteen. This girl was burnt four years since. The cicatrix was more extensive than in the last case, reaching as far as the lower edge of the second rib; it was exceedingly broad and dense on the thorax; and it was also very broad on the front of the throat, but less dense there than above or below. I did not measure the distance between the chin and the sternum prior to the operation, but I think it was hardly greater than in the last case. The head was tied to the thorax in the same unhappy manner, and the integuments of the face were slightly drawn down even when in the ordinary stooping position. The chin was also effaced in this instance.

May 4, 1824.—It would have been a dreadfully severe, and probably a much less serviceable operation, to have dissected off the whole of this immense cicatrix, and therefore I adopted the following plan: I made two incisions, one on either edge of the cicatrix, of about three or four inches;

I then pinched up the cicatrix in the middle between the finger and thumb of my left hand and drew it forcibly out; I next pushed a long, straight-backed, narrow knife through from one incision to the other, and turning its blade outwards, I at once divided the intervening band, making a cut of at least two inches with very trifling pain; I now freely detached both the flaps, until the girl could carry her chin horizontally without dragging the integuments of the thorax.

When the patient is refractory, as in the first case, it is by no means an easy matter or free from hazard, to dissect up the dense cellular substance from the subjacent parts, obscured as the operation is by very copious bleeding: and in truth, in that case, I was several times under considerable apprehension, notwithstanding the care of the gentlemen who assisted me, that she would have thrust her throat against my knife, which might have been an awkward business if the point had penetrated near the alæ of the os hyoides, where the cicatrix particularly adhered. In this case, therefore, I used a knife much rounded, the point being completely ground away. My present patient was, however, very tractable.

I proceeded as before to tuck the upper flap under the chin, and confined it in its situation by long straps, compress and broad fillet. Then, having dressed the neck below lightly, retaining the

lower flap in the situation to which it had been separated from the other (a distance of more than two inches), I applied a poultice, and over that a pasteboard collar; and I continued this plan for some days, until the chin was formed and suppuration established. I then substituted broad straps in front of the throat, for the pasteboard collar, and applied the screw collar with a short screw. By degrees we were enabled to raise the chin to the full extent of this screw, and have since substituted a longer one.

The result of this operation has been equally successful as the last; the chin is well formed, and the new cicatrix is soft and pliant. The girl can raise her chin without difficulty above the horizontal line, and the measured distance, without stretching the integuments, is three inches and a half. The neck has now been well sixteen weeks. In this case I continued a poultice in a bag over the other dressings nearly to the termination of the cure, and with advantage.

If we may judge from present appearances, there is every probability that the cure will remain permanent in both these cases, and I see no reason for thinking they will contract again. In the first place, the *old* cicatrices had contracted to the utmost, before the operation was performed. The

question is, will the new cicatrices contract? I cannot see why these should do so, otherwise than if they had been formed subsequently to the removal of tumours, or to any other breach of surface in the same situation. Such cicatrices *do* contract, but in most instances where the cause has not been a burn, the neighbouring integuments elongate so as to remedy this, of which I lately saw a very remarkable instance in a man whose eyeball with a part of the lids had been extirpated for a disease of that organ. When I saw him, there was a line of cicatrix at the bottom of the orbit, and the whole of that cavity was covered by an extension of the remaining portion of the eye-lids, which fact was satisfactorily proved by the following circumstance; that when he closed the lids of the sound side, simultaneous action of muscular fibres could be very clearly perceived in the integument lining the empty orbit. I cannot suppose that these were a new formation in this situation, but that in proportion as the interstitial matter of the cicatrix was absorbed, more and more integument was borrowed from the surrounding parts, which not improbably is produced more largely from the demand made for it.

How it is that cicatrices produced by different causes differ so much in their constitution, has not hitherto been satisfactorily explained; but at present it may suffice to say, what is sufficiently known indeed, that those which follow a severe burn are

peculiar ; and it is one of their peculiarities to produce this species of contraction for which Mr. Earle has proposed as a remedy, to substitute a new cicatrix for it *. To return to the cases above related. - From the soft, healthy state of the cicatrices, and from their having allowed the parts to recede still more since the wounds have healed, there is every reason to hope that the ground already gained will be preserved ; but as a useful precaution, I intend these girls to wear their collars for a year or two, in which period another guarantee will be obtained against a relapse, namely, that the bodies of the vertebræ, which probably were narrowed in their anterior capacities during the action of these bands, will have recovered their natural dimensions, and thereby oppose any recurrence of the deformity. It would probably have been deemed more satisfactory to have deferred this communication till a longer trial had been made, but for the reason above stated this would have occasioned a greater delay, than with my firm belief of the permanence of the cure would have been necessary or right.

* Mr. Earle is of opinion that the advantage is derived from approximating the edges of the wound, and so obtaining a cicatrix in the transverse, instead of longitudinal direction, and this indeed appears to be the case ; but where it happens (as it often will) that the edges can be approximated but in a very slight degree, I believe the same object will be obtained by the natural process now mentioned, if care be taken to maintain a proper distance in a longitudinal direction.

From these cases it will appear that the objects I have had in view are, 1st. To make a good chin. 2d. To conceal the old cicatrix in that situation without removing it. 3d. After the parts have been relaxed by suppuration, to separate the chin from the sternum by the gradual but sure operation of the screw.

The collar, of which a sketch is annexed, executed by a very intelligent pupil of this hospital, Mr. Nelson, consists of the following parts :

AA An arch slightly curved, to adapt it to the form of the parts resting on the sternum and clavicle, and carried back far in the neck.

BB Two uprights with hinges at *CC* situated nearly under the angles of the jaw.

DD Another arch which is applied beneath the base of the jaw.

EE A steel frame which supports the upper arch, with a screw *F* passing through it, by means of which the upper arch may be elevated at pleasure.

I believe very complete success may be obtained from the operation, performed in the manner above described, if sufficient attention be paid to the after treatment, but without this its object may be defeated. It is more particularly necessary to prevent the collar from galling, and if it should bear on any part of the sore, it should be raised from the surface at that point, by thickening the padding elsewhere. Also, it is desirable to have the upper arch made with a curve not too large, for that might allow of the chin being withdrawn within it; nor should the frame *E E* be too high at first. A second collar may be used in the progress of the cure, or a new frame or screw may be added to the old one.

The material of which the arches are composed is sheer steel, sufficiently padded and covered with leather.

It is right that I should mention that my friend and colleague, Mr. Harris, has, since these operations have been performed, adopted an apparatus in a case which came under his care, which varies from mine in the following particulars. It retains the arch which supports the chin, and this arch rests upon an upright which also possesses the power of elevating that arch at pleasure, but this upright rests on a plate which is fixed as a belt to the lower part of the thorax, and is secured from slipping down by two shoulder-straps. It is not improbable that it may answer the purpose better

than the instrument I have described above, but as the case is still under trial, I can say nothing more than that it promises well ; at the same time I should say that my own reason for adopting the instrument I have described, arose from the belief that the accommodating powers of the vertebral column would be likely to defeat our endeavours, and *therefore* I wished the fixed points to be the sternum, clavicle, and lower jaw *.

Under the impression that the foregoing cases possess sufficient value to justify me in making them known to the profession, I have been induced to offer them to the notice of this Society.

Exeter, Dec. 16, 1824.

* The first case I had was that of a girl of the name of Lee, about seven years old, on whom I operated Oct. 17, 1818. I then used the pasteboard collar, aided and assisted by every contrivance I could devise, but had the mortification of finding that my efforts to establish the distance between the chin and sternum, which I had gained by the operation, were defeated by the soreness of the parts if the width of that collar was increased, and by the great flexibility of the vertebral column if I used any species of bandage ; and it was on that occasion I was first led to try the screw collar. This was not, however, till more than two months after the operation, and the cure in this case was far less perfect than in the two subsequent ones which I have now related.