THE TREATMENT OF SCARS OF THE FACE INVOLVING THE EYELIDS, DIRECTLY OR INDIRECTLY.

BY CHARLES STEDMAN BULL, M.D.,
NEW YORK.

SCARS upon the face, in the vicinity of or directly involving the eye-lids, have long been a subject of interest to ophthalmic surgeons, and various have been the attempts to remedy the defects produced by the contraction subsequently occurring in them. The main interest has apparently centred in those scars, more or less extensive, due to burns or to extensive laceration and destruction of soft parts from wounds, chiefly gunshot, like those received in battle. The same or an equal degree of interest does not seem to have been attached to those depressed scars due to long-continued glandular abscesses, or to chronic bone disease with subsequent exfoliation of bone. The object to be gained by operative interference in these cases is two-fold, viz., to remedy an unpleasant deformity, and to protect the eye from injury by restoration of one or both eyelids, in whole or in part. Whether the case be one of partial or complete ectropium of one or both lids, caused by the cicatrization following a burn, or of partial or complete destruction of one or both lids, the operation deemed necessary is some form of blepharoplasty, either by sliding flaps or the transplantation of a flap with pedicle from some neighboring region, or by the process of grafting without pedicle by the transplantation of skin in numerous small pieces or in one large graft, from some distant region. All of these various operations occasionally fail in their ultimate results, and this from no fault in their technical performance. No surgeon, however experienced, in his desire to correct a deformity, can ever trust implicitly in the persistence of a large scar; and we should be very cautious in attempting to remove the effects of contracting bands of tissue by operation, for every new incision that is made is eventually filled up by the formation of this same granulation tissue, in which the same contracting process goes on as in the original scar. The new-formed granulation tissue is gradually changed into

fibrous connective tissue, and then becomes true cicatricial tissue, made up of bundles of connective-tissue fibres, as are seen in tendons and fibrous membranes. This conversion of the exudation cells of granulation tissue into filaments of cicatricial tissue ending in contraction seems to be very much of a mechanical process. We all recognize the fact that the changes taking place in a cicatrix do not cease with its formation, for the gradual contraction continues for a considerable, though very variable, period of time, and does not attain its maximum until long after the completion of the cicatrization. In view of these facts, it has seemed to the writer that operations for blepharoplasty are sometimes undertaken too early, before cicatricial contraction has ceased, and that, in some of the cases at least, the lack of ultimate success may be thus explained. Another point to be remembered is that the contraction in scars from burns is greater than from any other cause, and the contracting process lasts longer. Still another point to be remembered is that the degree of contraction, though largely dependent on the nature of the agent that caused it and upon the extent of its destructive action, also depends somewhat upon the seat of the scar. If it is in a region where the skin is naturally tense, as over bony prominences, the contraction will be slighter than where the skin is naturally loose. A scar over the superior orbital margin, or on the side of the nose, or over the zygoma, will contract less than one over the lower orbital margin or on the cheek. But, on the other hand, in injuries or burns of those regions where the skin is naturally tense, the resulting cicatrix is in most cases immovable, in this regard being almost characteristic. In superficial caries with an external opening, when the bone disease is arrested and the necrosed portions have been detached and cast off, repair goes on in the usual way by the formation of granulation tissue, which is subsequently converted into fibrous tissue, becomes continuous with bone or periosteum, contracts and possibly ossifies, and thus the depressed cicatrix is caused. This is well described by D. Hayes Agnew in his last work on Surgery.

We should not be too hasty in operating for deformities about the lids produced by the scars resulting from bone disease, for very often these scars break down from pressure or tension, or from some constitutional cause, such as struma, or scurvy, or alcoholism. Such spurious cicatrization is not infrequently seen over fistulous openings from bone-caries; the surface of the scar retains a pale blue hue, sometimes for a long period, and conceals a granulating tissue below. Such scars never attain the vitality of older structures, and

the larger they are the less vitality, as a rule, do they possess. Any operative procedure to relieve the deformity accompanying such a scar would be almost certain to fail, whether by blepharoplasty with sliding flaps or with a pedicle, or by grafting without a pedicle. Excision of the entire scar, and, if bone disease be present, removal of the affected portion by forceps and scraper or chisel, must precede any successful attempt at blepharoplasty, if a solid cicatrization is to be obtained.

Certain observations of the writer upon the natural course of development and transformation in scars of the face, involving the lids directly or indirectly, have led him to think that the natural process of change may be assisted and perhaps hastened by a combination of massage and traction, and thus the parts made more movable and put into a better condition for the performance of any blepharoplastic operation, the chances of the success of which are thereby enhanced. We know that in time the tissue of a scar assimilates more and more to the structure of a part, and its deep attachments become more movable. The scar which at first is thin, bluish, and shining, and composed of undeveloped fibrous tissue, becomes white and depressed, and its structure comes very slowly to resemble that of the part where it is situated, though of course it never becomes true skin. The loosening of such scars from their deep attachments is due to a slow absorption of certain tissue-elements and the formation of a loose net-work of connective tissue, more or less elastic and pliable, at the base of the scar. Great changes occur in this regard in course of time; but, as Hayes Agnew says, external agents, such as rubbing and kneading the parts, or massage, and even soaking and steaming the parts, are useful in hastening the process of interstitial absorption. We can readily see that the act of massage, by pressure on plastic deposits, causes an absorption of a certain amount of intercellular material, and thus the texture at the base becomes more open. Persistent rubbing and kneading of scars of the face, both those due to burns and those resulting from bone-caries, as preparatory to blepharoplasty, have, in a number of instances in the writer's experience, yielded most excellent results. Adhesions of scars, slight or extensive, to the subjacent parts, have been slowly, cautiously and painlessly detached, and a gradual absorption of the firm material in the dense part of the scar has been brought about. So considerable has been the result obtained in some cases that the writer has come to regard this gradual extension and loosening as an important part of the treatment in these

cases. It is astonishing how soft and pliable the seams in these scars become under this treatment, and this pliability and elongation of the cicatrix is probably permanent. The depressed scars due to bone disease, in which, after the casting off of the sequestrum, the fistulous sinus has closed and the scar has become depressed and firmly adherent to the bone or periosteum, generally prove intractable to this method of treatment by massage. In these cases it will be necessary to divide the adhesions subcutaneously, and then keep up motion in the parts by rubbing, until all danger of re-adhesion of the old attachments has passed. This operation has been advocated by Mr. Wm. Adams, of England, who has practised it in a number of cases with success. (See *British Medical Journal*, April 29, 1876). He describes it as an operation for the obliteration of depressed scars after glandular abscesses or exfoliation of bone. The operation consists, first, in subcutaneously dividing all the deep adhesions of the cicatrix by a tenotomy-knife, introduced in healthy tissue, a little beyond the margin of the cicatrix, and carried down to its base. Then the depressed cicatrix is carefully and thoroughly elevated, lifting it up as it were so that the cicatricial tissue remains prominently raised, and the cicatrix maintained in its elevated position for several days by passing two hare-lip pins or needles through the base at right angles to each other. The needles or pins are generally removed on the fourth day, and the cicatricial tissue, somewhat swollen and infiltrated, is allowed gradually to subside to the proper level of the surrounding skin. Adams thought that after subcutaneously dividing all the deep adhesions of the cicatrix, elevating the cicatricial tissue, and retaining it so raised for a few days, the depression would become filled up by inflammatory infiltration, so that the scar could not again sink below the level of the surrounding skin; the depression would thus become obliterated, and all the adhesions of the cicatrix would be effectually removed. The doubtful point is whether, in the course of time, absorption and re-contraction of the inflammatory lymph would take place, so that the depression would return.

After the operation the cicatricial tissue always loses its shiny, membranous character, and becomes looser and of an opaque white color.

So far this method of treatment of depressed, adherent scars from bone-caries has been employed by the writer in but three cases, but in all with satisfactory success. One was for complete eversion of the lower lid by a broad, depressed cicatrix, firmly adherent to the

superior maxilla below the orbital margin. The original trouble was probably extensive caries of the bone from scrofulous disease. After the loosening of the scar had been done, and subsequent massage treatment had been carried on for four weeks, the lid was inverted, and the space opened by the incision was filled in the ordinary way by transplantation of a flap of skin with pedicle from the temple.

The second case was also complete eversion of the lower lid from the same cause, the original injury having been a pistol-shot wound. The adhesions here were not so broad as in the first case. The subsequent method of treatment was the same.

The third case was one of almost complete eversion of the upper lid, produced by a long and somewhat broad scar on the forehead, just above the eyebrow, the cicatrix being markedly depressed and firmly adherent, throughout its whole length, to the bone. There had been quite extensive destruction of bone from a severe blow received many years before. In this case also the same steps were carried out, and the resulting gap filled by transplantation of a flap from high up on the forehead. As before stated, the ultimate result was excellent in all the cases.

A SOURCE OF DANGER IN THE FRAME OF THE EYE-GLASS AS COMMONLY MANUFACTURED.

By F. B. LORING, M.D.,
WASHINGTON, D. C.

The two following cases are not remarkable in themselves, nor can they claim any special interest beyond the peculiar manner in which the injury was inflicted, and the fact that, as long as eye-glasses are manufactured on the present system, the ametropic community will be liable to similar accidents of a greater or lesser degree. Some months since, M. L——, a student, consulted me in regard to an injury of the right eye, received during a frolic with some companions, from the blow of a hard pillow on the corresponding side of the head. The glass had been driven against the eye, and the small, acorn-pointed spike that is always placed by the maker on the *inner* side of the handle of the frame, as a means of locking the glasses together when closed, had penetrated the conjunctiva and subconjunctival tissue, and, driven by the lateral force of the blow