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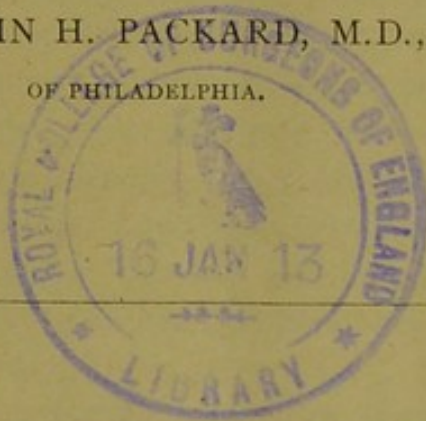
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TO BE SECURED BY

OBLIQUE SECTION OF THE SKIN IN SURGICAL
OPERATIONS.

By JOHN H. PACKARD, M.D.,
OF PHILADELPHIA.



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(Read before the New York Academy of Medicine, May 6, 1880.)

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MR. PRESIDENT AND GENTLEMEN: In the great majority of the cutting operations of surgery, it is an object to obtain as early and as effectual closure of the wounds made as possible. The exceptions are those which are undertaken for the purpose of establishing artificial openings, as for example tracheotomy, colotomy, gastrotomy, etc. And in ligation of arteries in their continuity, the presence of the ligature must of course prevent the closure of the track in which it lies. Yet in almost all even of these cases, the wound in the skin must be of such extent that a large portion of it may be healed without interfering with the result aimed at; while not only the comfort but the well-being of the patient is promoted by the early exclusion of the atmosphere from the deeper tissues.

Another advantage is gained by the avoidance of unnecessary scarring. There are many cases of excision of tumors about the face, neck, or hands, in which the persistence of unsightly marks would give rise to a degree of mortification to the bearers of them, which it is not beneath the dignity of surgical science to endeavor to prevent. And I think it may be asserted that whatever adds to the precision of our procedures, or to the elegance and neatness of our results, is worthy of a place among the resources of our art.

Unless exception is taken to the correctness of these premises, an apology will hardly be needed for the suggestions to which your attention is now asked.

About six years ago, I was accidentally led to notice the fact that after oblique division of the skin, healing took place readily, and the resulting scar was small as compared with that usually left by vertical section. I was summoned to a woman who, while carrying a glass dish, had fallen and sustained a very severe wound of the hand from a sharp fragment of the glass. This wound was on the back of the hand, and extended from the wrist to the knuckle of the ring-finger. By the peculiar position of the edge of the fragment, the skin had been cleanly divided in an extremely oblique direction. Healing took place promptly, and to my surprise and the patient's gratification, the cicatrix was very much smaller than might have been expected after an injury so formidable in appearance as this had been.

It occurred to me to imitate this accident in surgical procedures, with the view simply of lessening the ensuing disfigurement; nor was I disappointed. On one occasion, having removed an old bursal tumor from over the patella, I was unable to find the line of junction between the edges of the section of the skin.

Now the mere lessening of scars has more than a cosmetic value. Every one knows how apt they are to be for a long time the seat of tenderness, sometimes exquisite, and how sensitive they often are to cold, as well as to barometric changes. By reducing the exposed portion of cicatrix, we do much to obviate these inconveniences, which are especially annoying to the working classes, among whom the accidents requiring operation are by far the most frequently met with.

Another danger to which scars are very liable is that of the development of keloid tumors; and the closer the union, the less of what a few years ago was called by microscopists *inodular tissue*, the less will be the probability of this very troublesome and intractable disease.

Quite recently it has occurred to me to develop another and I think much greater advantage of the oblique section of the skin, namely, the avoidance of suppuration, and the obtaining of very prompt and firm union between the cut surfaces. The rationale of this advantage can be easily seen. We have a close apposition

of very wide surfaces, with exclusion of the air from the cavity of the wound, by means of a strictly valvular arrangement; the apposition of the edges being moreover favored by atmospheric pressure.

An application of the same principle in the arts affords an excellent illustration of the idea I am trying to urge.

It is often necessary to make belting, for the use of machinists, of a length much greater than could possibly be got from a single strip of hide. Hence several pieces have to be put together, and this joining or splicing must be done so as to be as strong as possible. For this purpose the ends of the pieces are beveled off, or, as the technical phrase is, are *scarfed*. Sometimes they are said to be chamfered, a term borrowed from architecture, and usually corrupted into *champered*.

These scarfed edges being then applied to one another, and fastened either by gluing or by rivets, afford at the same time a very strong connection, and one which involves no thickening of the belt, which would interfere with its running. It is indeed often difficult to detect the exact line of junction.

The scarfing is done by means of a machine, with very great accuracy. I exhibit samples of it, and they will show the principle better than any description could.

Sometimes the scarf or bevel is made very long, and then of course it approaches much more nearly to parallelism with the surfaces of the leather. I measured the junction between two pieces of a belt in use, a few days since, and found it twenty-two inches.

Let me now briefly state a few typical cases in which I think I may claim that this procedure has been the direct means of effecting the best possible results.

A woman, æt. 52, came under my care with a mammary tumor requiring excision. The skin was very slightly involved. By means of two beveled incisions I removed a mass equal in bulk to that of my two fists; going well into the healthy areolar and adipose tissue around the gland and tumor. A number of vessels which required ligation were secured with carbolized catgut, the ends of which were cut off short. The oozing of blood was thoroughly controlled by constant sponging with hot water, and the surface of the cavity, at the conclusion of the operation, was

perfectly dry and clean. The wound was closed with three points of the hare-lip suture, and adhesive strips. Carbolized cerate was applied as a dressing, and gentle, equable pressure made with a wad of raw cotton.

On the third day the pins were removed. On the fifth, the wound was found to be solidly united from one end to the other, there not having been a fluidrachm of pus formed.

Another case was that of amputation of the fore-finger at the metacarpo-phalangeal joint, for injury by the thrust of a needle, causing cellulitis and wasting, with painful atrophy of the soft parts. The incisions were so made as to bring the cicatrix on the upper part of the stump, the outer flap being beveled from within outward, the inner from without inward. Here there was some subsequent pain, and a dressing of hot laudanum was applied for about twenty-four hours. A perfectly dry healing ensued, with an absolutely linear cicatrix. No dressing whatever was used after the third day, a strip of dry lint only being put on as a protection.

Another case was one of strangulated inguinal hernia of the right side, operated on April 19th. The incision was made by carrying the knife in very obliquely, and dividing the skin in that manner for the requisite distance. The hernia was reduced without opening the sac. One vessel required ligation, which was done with carbolized catgut. Four or five hare-lip pins were employed for the closure of the wound, and one silver-wire suture, fastened with lead plates at either end, through the deeper tissues. A superficial silver-wire suture was also used at the lower end of the wound. All these sutures were removed on the third day. No dressing was used but carbolized cerate, with a thin sheet of raw cotton over the whole of the region involved. The healing, although not absolutely dry, was very nearly so; there was never more than f3j of pus on the lint taken off. The cicatrix is a mere hair-line in appearance, and there is no tenderness, even on firm pressure.

No argument is necessary to show the advantage, in such a case as this, of a firm and deep union of the edges of the wound, with as small an amount as possible of cicatricial tissue to be pressed upon by the truss, which prudence will oblige this patient to wear for a time.

These cases have been selected as typical of the various classes of operations, and will answer as well as a much longer series in illustration of what I think is the value of this method.

Beveling the edges of wounds made in rhinoplastic operations has been practised by many surgeons, notably by the elder Pancoast, of Philadelphia, whose "tongue and groove" suture was a marked element of the brilliant success of some of his procedures of this kind. It has not, however, been generalized in the practice of ordinary operative surgery, as in my humble opinion it may be to great advantage.

There are cases in which it is desirable to employ drainage, either by means of a tube of silver, rubber, or decalcified bone, by carbolized silk, or by horse-hair. I am well aware that the need and advisability of this is doubted by many surgeons, and am ready to admit that drainage has been employed by some in a wholesale and routine manner, in every case, with perhaps injury to the patients, or at least to some of them. But when it is thought proper to establish an outlet, this may be done perfectly well with oblique section of the skin. Indeed, if desired, a sufficient portion of the incision may be made in the ordinary vertical method, at a suitable point, and the remainder may be made obliquely, so as to promote its healing.

I have not yet employed this oblique method of incision in any large amputation, as I have been experimenting with it in order to make sure of my ground; but should confidently look for like advantages in such operations, as in those above mentioned.

It is a matter of much importance that the scalpel or bistoury used should be very sharp, in order to make the cuts with the utmost accuracy. The plane of incision should be as much inclined as possible. Of course the apposition of the cut surfaces should be most carefully and exactly effected, and where a cavity is left, as by the removal of a tumor, gentle and equable pressure should be so made as to close the tissues in and fill it up. Carbolized cerate forms an excellent immediate dressing, with or without laudanum, alcohol, dilute tincture of iodine, or other customary applications. My own preference is for the laudanum, with a wrapping of raw cotton, generally covered with waxed or oiled paper.

May I with much diffidence venture to hope that the modifica-

tion which I have had the honor to urge upon your attention may be found really to be a contribution to that antiseptic surgery at which we must all aim?

Discussion.—Dr. Jas. R. Wood said that the late Dr. Valentine Mott had advocated, especially in operations on the scalp and face, oblique incisions. To stop the hemorrhage, he did not use torsion, but he left his wounds open until hemorrhage had ceased. He then closed the wound, if on the scalp, by twisting the hair and tying it, so as not to make punctured wounds with the needle. In this way he would get union by the first intention. Dr. Mott used to teach that this beveling of the integument was very important, especially in operations on the face in females. We can now, however, make this method more uniformly applicable, because we have hot water and carbolized catgut with which to stanch hemorrhage. Dr. Wood advocated the method suggested by Dr. Packard, although he, as a rule, believed in the open treatment of wounds. Dr. Wood had used catgut, but he had not always been able to prevent suppuration. He was satisfied that there was a good deal in the catgut ligature, but it was not perfectly reliable. Dr. Wood said that he once witnessed a beautiful operation in Philadelphia, many years ago, in which Dr. Pancoast, Sr., made a new nose. He beveled off the integument of the forehead; then grooved the edges of the nasal opening where the new nose was to be. The two parts were then fitted into each other, and the union was rapid and perfect.

Dr. Frank H. Hamilton said that he could see one objection to Dr. Packard's plan, viz.: that by making oblique incisions where the skin was very thin there might sometimes be sloughing. On the other hand, better apposition might be secured, and a larger part of the incision would be in the more vascular part of the tissues. These were two very apparent advantages.

Dr. Alfred C. Post said that he had not practised this method, but he had long been satisfied that broad surfaces should be applied to each other in closing wounds. He had been in the habit of bringing such surfaces together, using deep sutures and keeping the parts in place by splints. In this way he had secured union in fistulæ, etc., where the edges alone would have healed together, with difficulty.

In operations about the vagina the method of bringing broad surfaces together, as suggested by Dr. Post, was absolutely necessary.

Dr. Lente said that he thought the suggestion of Dr. Packard would be a very useful one. In reference to closing up wounds at once, he thought it preferable not to do this in country practice, where the patients could only be seen once in two or three days. It was safer, he thought, to carry out the open treatment, and thus lessen the possibility of accidents.

Dr. A. C. Post said that, in cases where a large cavity is left after the operation, there is no question about the necessity of keeping the wound open; but there was often an error in keeping the drainage-tube in too long. If not removed in two or three days after the operation, it was likely to become only a source of irritation.

Dr. Webster said that some six or eight weeks ago he witnessed the removal of a deeply-seated orbital tumor. The incision was made vertically, the tumor enucleated, and the wound closed with silk sutures. The wound closed immediately, there was a very slight scar, and the result seemed to be quite as good as that in the case reported by Dr. Packard.

Dr. Robert F. Weir had twice used Dr. Packard's method, and thought favorably of it. As regards the possibility of sloughing, he said the incisions in corneæ for cataract had for years been made obliquely, yet there had been no sloughing in such cases so far as he was aware, although the tissue was a non-vascular one.

Dr. F. H. Hamilton said that Mr. Pierson, in his directions for opening cold abscesses, stated that the incisions should be made obliquely. He had followed this direction a few times, with satisfactory results.

Dr. Harwood related a case of removal of tumor of the face. The wound was closed with sutures and dressed with carbolized oil. The next day the union had taken place, and a week later the scar was very slight. In this case the incision was vertical, and the dressing applied in the ordinary way.

Dr. Packard, in concluding the discussion, said that, 1st, as regards Dr. Wood's open method, he was entirely in accord with him. He regarded the open, fresh air as a very much maligned

element. But it did not seem to him that the idea of the open method militated against his theory of oblique incision at all. The remarks of Dr. Wood reminded him of what Sir J. Paget says of the distinction between immediate union and union by first intention. He thought the distinction an important one. In immediate union, there is union with no effusion of lymph. Now, by the oblique method, this union is more likely to be obtained. And the point is, in this incision, to so cut the skin as to have the edges closely in apposition, and the sides of the wound so brought together as to prevent the formation of any cavity; the atmospheric pressure helps to secure this result.

2d. In reference to the danger of sloughing, he referred to cases of skin-grafting. The facts regarding this were a sufficient answer to the suggested danger.

3d. In regard to how much beveling of the skin there should be, demonstrations would show it more perfectly than description. The incision must be made very obliquely, the knife being held at an angle of 150° or more. There is all the difference in the world between such extreme obliquity and a slight amount. Some surgeons had totally misapprehended him on this point.

4th. Dr. Packard was aware that the idea of oblique incisions was not new. He recollected Dr. Pancoast's operation for rhinoplasty, referred to by Dr. Wood. This was, however, for a special operation only. The points he (Dr. Packard) urged, were the uniform advantages of the oblique incision in securing accurate apposition of the skin, and in preventing the formation of a cavity.

[*Note by the Author of the paper.*—It cannot be denied that cases do occur, such as those cited above by Drs. Harwood and Webster, in which union takes place rapidly and without troublesome scarring, no matter how the skin is divided. But it is not the less important to insure the ready healing of operation-wounds, by any available means; and such seems to be the result of the method of incision above described.

Where, as in country practice, cases have to be left unvisited for two or three days, there is no risk of mischief from rapid closure. Especially if drainage is used, and if pressure is properly made so as to diminish the size of the cavity left, as, for instance, after the removal of a tumor, the adhesion of the lips of the wound can be productive of no possible harm.]