

PART FIFTH.

DRESSING WOUNDS, AND SURGICAL INCISIONS.

DRESSING WOUNDS.—In the third volume of this series, "*Surgical Emergencies and Accidents*," this question has already been considered, at some length, but the general principles should be given at this time, particularly as some may not have access to the volume referred to.

The first consideration will always be the *arrest of hæmorrhage*. When trifling, chiefly capillary or venous, exposure to the air, temporary pressure, bathing the parts in hot water, or simply closing the wound, will be all that is necessary. If this is not successful and no vessels are wounded of sufficient size to require the ligature, mild styptics may be used, as a weak solution of Cupric sulphide, Monsel's salts, Alum, or any astringent agent. Should the bleeding proceed from wounded arteries of size, the vessels must be taken up and tied, or otherwise secured, either at the cut extremity, or in the continuity. This may be accomplished by ligature, torsion, or acupressure. When the number of vessels springing is large, owing to unusual vascularity of the part, the main vessel must be tied, by exposing it above the wound. As the majority of these operations more properly belong to major surgery, the reader is referred to "*Surgical Emergencies*" for details. At this time we will simply describe the process of ligation in the wound,

The lips of the wound being held apart so that a full view

of the whole extent can be obtained, the bleeding orifice is to be found, and either hooked up by the tenaculum, or seized with the artery forceps. The vessel is then to be drawn out, say to the extent of a couple of lines, and secured by tying it firmly with silk thread, of suitable size, with a square

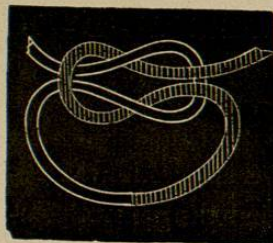


FIG. 20.

or reef-knot (fig. 20). It was formerly the fashion to make a double turn, or cross, at the first part of the knot; it is not only a clumsy procedure, but really detracts from its security. A little practice will enable one to make the proper knot with facility, which should receive attention, as any other form or modification of the above would produce a very insecure hold on the vessel. The first part of the knot having been made, draw it tight, and secure it by pressing the tips of the two forefingers on it, in the wound, and draw the second part tight with the thumbs and other fingers, keeping the forefinger in position until the knot is drawn tight and completed. Then cut off one end of the ligature, close to the knot, and bring the other out at one of the angles of the wound, viz., that which is reached by the shortest route, *not* the most dependent. Should the vessel be only nicked, or partially divided, pass a ligature around it in the following way: Arm an aneurism needle with the ligature, drawing it through the eye only for an inch or two. Pass the needle under the vessel, and seize the short end of the ligature with the dressing forceps. Withdraw the aneurism needle, and the ligature is passed around the vessel, which is to be tied as above. In the absence of an aneurism needle, a silver probe, with an eye, may be used, being bent into the proper form.

In cases in which the hæmorrhage is evidently due to tem-

porary hyperæmia, forced flexion of the joint above and nearest to the wound, will often arrest it. The part must be flexed beyond the normal degree, and held so by bandaging. It will only be a safe procedure in exceptional cases, as the pain will be too severe to admit of long retention, and the vitality of the part would also be jeopardized. Firm compress and bandage may likewise be used in similar cases, but when the vessel is deeply situated, or the individual is unusually corpulent or muscular, it may prove inefficacious.

The hæmorrhage having been arrested, the next step is to thoroughly *cleanse the wound*, at once to put the parts in the best position for prompt healing, and to lessen the liability to suppuration or inflammation. All foreign material that can be seen, clots of blood, grit, etc., are to be picked off with the forceps, being very careful to use no rough or harsh handling. All manifestly dead tissue, from burns or bruises, particularly if partially detached, must also be removed with the forceps, and scissors if necessary—as lessening the danger of suppuration, and also materially increasing the rapidity of repair. When everything of this nature has been removed, allow warm water to drip over the cut parts from a sponge, taking care not to rub the raw surfaces. When all foreign material that can be detected has been removed, and bleeding has ceased entirely, if the parts are covered with hair, whether thickly or otherwise, the skin should be shaved for some distance around the wound. This will not only much facilitate the dressing and redressing of the wound, but lessen the danger of septic poisoning, or erysipelas, by the retention and decomposition of the secretions in the hair. The shaving must be *close*, however, otherwise the short hairs may irritate the wound and delay union.

The wound is now to be closed, and finally dressed. When

of any depth, or length, so that the edges gape considerably, it is necessary to employ sutures, or stitches, of various kinds, with some additional support from adhesive strips. When smaller, strips of plaster alone, or Collodion, will be all that is needed.

Sutures are of two general kinds, the dry and the wet. The former is made by attaching a strip of adhesive plaster to the integument on each side of the wound, passing the stitches through the edges of them instead of through the tissues. It is a method little used, and one that can never, I think, come into common use, as nothing is gained above what can be secured by ordinary adhesive strips. The *wet suture* is made by passing the stitches through the tissues, and the various methods, either to be preferred under peculiar circumstance, known as the continuous, interrupted, or quilled. Either silk, wire, or cat-gut, can be used, as the surgeon may prefer, or the exigency of the case demands.

The *continued suture*, is used in closing wounds of the in-

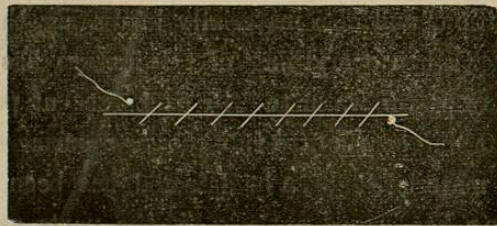


FIG. 21.

testines, chiefly, and is made as follows: The edges of the wound being held together, the needle is entered about half an inch from the margin, carried directly through, emerging on the opposite side; the needle is entered again, on the opposite side, carried across in the same manner, thus making an overhanded stitch (see fig. 21). The free ends of the suture are fastened to the nearest stitch.

The *interrupted suture* is that more commonly employed, and is made as follows: The wound being closed, the needle is entered, as in the last mentioned, carried directly across the wound, emerging opposite the point of entrance, and about the same distance from the margin. The thread is then tied, or the wire twisted, and cut off. A number of stitches are taken, from an inch to two inches apart, depending upon the size of the wound.

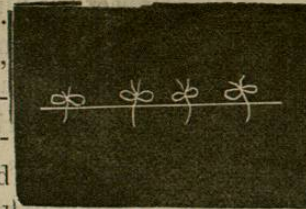


FIG. 22.

The *quilled suture* is used to close *deep* wounds, where it is essential to bring the sides of the wound in close opposition throughout their depth. Cut two pieces of an elastic bougie,

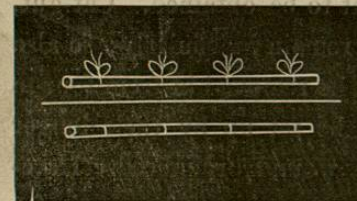


FIG. 23.

or some suitable article, the length of the wound, or a little over. Thread the needle with a double suture, and make a stitch, as in the interrupted suture. Without tying it, cut the suture long, leaving it in position. When all the stitches have been passed, pass one of the pieces of bougie through the loops on one side, formed by the double suture—or if they have been cut, knot them over the bougie; draw the sutures tight, on the other side, and knot them over the second piece, as seen in fig. 23. The stitches must be taken deeply, and can be drawn very tight, the pieces of bougie so distributing the pressure that there is little danger of devitalization.

Hare-lip pins are sometimes used, instead of quilled sutures. The pin is entered about half an inch from the margin of the wound, and emerges about the same distance from the margin on the opposite side. Silk may be passed around both ends of

the pin, in a figure of eight (Fig. 24-a), or a rubber ring (b), which may be crossed if not sufficiently tight. The ends

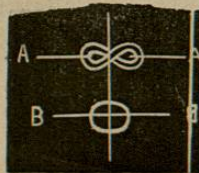


FIG. 24.

of the pin are then to be cut off with pliers, and a small piece of cotton, lint, or isinglass plaster placed under the cut ends to avoid irritation of the skin.

Serres-fine, small, broad-pointed, spring forceps—are somewhat commonly used, in Europe, in place of sutures. They are rarely employed in this country, and really possesses no advantages over sutures of the ordinary form.

The length of time which sutures may be allowed to remain, depends somewhat upon their character, the nature of the wound, and the object sought to be obtained. Cat-gut, or sutures of animal fibre, may remain indefinitely; so also with wire. Silk, or hemp, must be removed in from four to eight days, as suppuration may be set up by their longer retention, and the union of the wound prejudiced. Hare-lip pins, like metallic sutures, may be allowed to remain for an indefinite period, but when union is fairly advanced there can be no good result from their longer retention.

Having cleansed the wound, and applied the necessary sutures, the next step is to support the stitches with *adhesive strips*, or they may be used alone, without sutures, when the wound is shallow and of small extent. The plaster is cut into narrow strips, from a quarter of an inch to an inch in width, and varying in length from two to three inches, to six or more, depending upon the size of the wound. They are designed to support the sutures, when used in combination with them, as the traction of the integument has a tendency to loosen the stitches, by a sort of ulcerative process. One end of the plaster is applied to the integument, or the most

dependent portion, or the edges of the wound farthest from the surgeon, the edges of the wound closely pressed together, and the other extremity of the strip drawn tight and smoothed on. If the plaster will not lie perfectly smooth, owing to some irregularity in the surface, it should be nicked with the scissors sufficiently, as at B, Fig. 25. When three or more strips are to be applied, the centre one should be put in position first. The strips may be allowed to remain as long as they fulfil their function, and should be removed as soon as they become loosened or much soiled with the discharges.

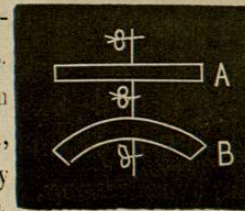


FIG. 25.

In removing adhesive strips great care must be had to avoid disturbing the edges of the wound, or breaking up the adhesions. For this purpose one end should be detached at a time, and stripped up to the edge of the wound; when both have been so loosened, join them together, and lift the strip off directly upwards. When the wound is large it is better to remove one at a time, and apply a fresh one before touching another.



FIG. 26.

Bandaging for the purpose of supporting the dressings, or even to close some wounds without other aid—is an essential feature in the treatments of wounds, and will be fully described in future chapters.

Antiseptic dressings, are those designed to prevent septic poisoning, and are made in various ways. It is impossible to account for their action, on physiological grounds, there being as many theories as there are agents. It is generally

believed, however, that the most prominent effect is to lessen cell-proliferation, or in some way reduce the functional activity of the part. This view would seem to receive confirmation from the fact that the free use of such agents appears to retard the healing process; my experience, I think, will positively prove this in the case of Carbolic acid, at least. The dressings may be medicated with common Charcoal, Cosmo-line, Vaseline, Labarague's solution of Chloride of Lime, or Carbolic acid. The last is the most commonly used. They may be made into poultices, used in the waters in dressing or redressing, or by treating all the articles of dressing with the desired preparation. In the case of Carbolic acid, at least, this is the common method, and according to the instructions of LISTER, is accomplished as follows: The instruments, sponges, water, and everything used in an operation or dressing a wound, are sponged with a strong solution of Carbolic acid; the wound is likewise sponged, the air being more or less filled. The sutures are soaked in the solution, and the lint, bandages, and even the adhesive strips are similarly treated. This is all done with the hope that organic molecules floating in the air are killed, and devitalized particles of tissue in the wound are rendered harmless probably by arresting decomposition. If my conception of the effect of such agents on the living tissues is correct, *viz.*, that growth is arrested—it can only be very rarely that such treatment would be advisable. I have never practiced it, and with a somewhat extended surgical practice I have never seen the necessity for any such precaution; septic conditions are readily met with appropriate remedies, much more so than can be truthfully claimed, I apprehend, for any other method of so-called antisepsis.

The dressing having been completed, the part must be

placed in as comfortable a *position* as possible, both to prevent pain, or lessen it, and thoroughly relax any muscular tension that might have a tendency to draw the parts asunder. No definite instruction can be given on this point, the position depending altogether on circumstances, and to be determined by the feelings of the patient. It must be remembered that the less pain the more rapid the repair, and something should even be sacrificed, in exceptional cases, to insure perfect ease and quietude, both local and general.

Remedies will not only greatly add to the immunity from pain, but will very materially hasten repair; they should be used in solution, or the water used for dressing the wounds, and given also internally. They are as follows:

Arnica, in all contused wounds, for the purpose of hastening the absorption of effused blood.

Hamamelis, in similar cases when the blood collects in the cellular tissue, and remains fluid.

Calendula, in wounds left to heal by granulation, for the purpose of hastening the process, and diminishing the amount of pus.

Ledum pal., when the wound is punctured, little bleeding or effusion, and the parts are very cold.

Hypericum, to allay pain and irritation from the division of nerves. I have fallen into the habit of administering this remedy in *all* cases, after operations, and find its action in subduing pain something almost marvelous.

Other remedies may be needed, in some instances, for which consult other volumes in this series, particularly "accidents."

The question now arises, how often shall we dress wounds, and how long should the first dressings be allowed to remain? The first dressings should not be disturbed until they become

soiled, loosened, or the patient feels uncomfortable in them; if the wound should have discharged freely, either pus or blood, the dressings should be partially removed in about twenty-four hours. It must be done gently, the bandages thoroughly soaked with warm water, and every precaution taken to avoid giving pain, or handling the parts with roughness that might break up adhesions. When the bandages and lint have been removed, the adhesive strips must be inspected, and not removed unless loosened or much soiled. The parts must then be thoroughly cleaned, and the bandages replaced—*Bandages soiled with pus or blood must be burnt; they should never be used a second time.*

INCISIONS.—It is of the first importance that the young surgeon should acquire ease and dexterity in the use of his knife. For this purpose he should embrace every opportunity to practice on the *cadaver*, until the various positions of the hand, necessary in different cases, are easily assumed, and confidence is felt in the ability to control the movements of this fundamental instrument. In the majority of instances one of the following positions will be the most easy and natural, but circumstances may arise that will compel the operator to modify them to meet the emergency in peculiar cases. The positions are those given by SMITH (*Operative Surgery*, I, p. 42), and are designated by the French as first, second, third, etc.

First position.—This is made (see figure), by holding the knife as a carving knife, the fore-finger resting on the back of the blade. It is used when deep or free incisions are made, but must not be used too frequently, by beginners, unless they are very familiar with mechanical processes. It might be called the “free-hand” method.

Second position.—In this, the portion to be incised is

pinched up, with the forceps or fingers of the other hand, transfixed by the bistoury, and the section made by cutting outwards. It is the common method of making the cutaneous incision in operations for tumors, hernia, or the like.

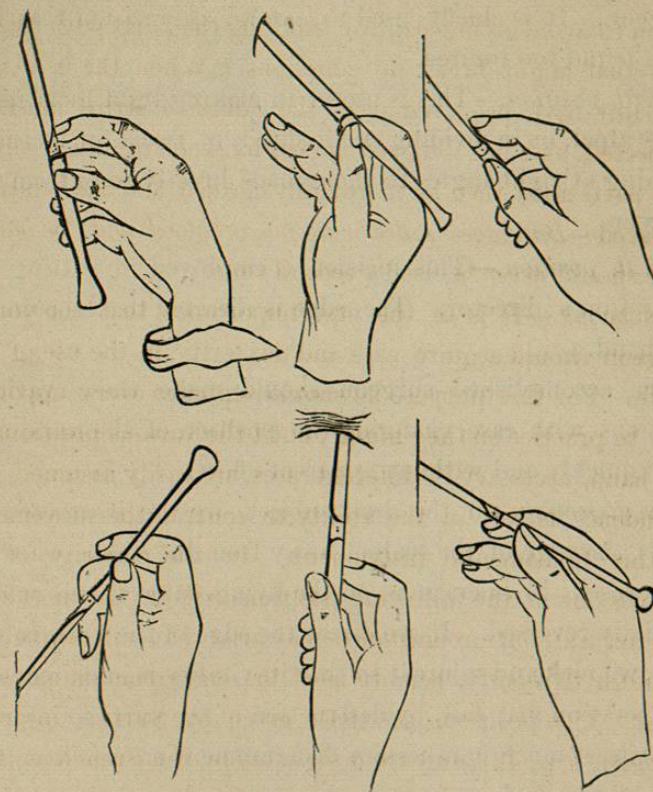


FIG. 27.

It is rarely made with the scalpel, the curved or straight bistoury being preferable, chiefly as it is more pointed, and requires less effort to force it through the integument, which also inflicts less injury in the parts, all bruising being avoided.

Third method.—This is the common position in dissecting, as it gives more control over the knife. The third and fourth fingers rest on the part being operated on, and the incisions

made by flexing the fingers holding the knife. The ordinary manner of holding a pen is the proper position.

Fourth position.—The position of the fingers, in this position, is similar to the above, but the direction of the edge of the knife is reversed; the edge is turned away from the surgeon. It is chiefly used to extend an incision that has been found too limited.

Fifth position.—This is useful in making light motions of the scalpel, or in dividing small shreds of fascia, or incisions running at right angles to those made directly to or from the surgeon.

Sixth position.—This incision is employed in slitting up sinuses on a director. The edge is directed to the palm of the hand.

The accomplished surgeon should make these various incisions with ease, changing the position of the knife and hand quickly and without apparent effort.

In *dissecting*, on the dead subject, we are instructed to direct the edge of the scalpel away from the tissue we wish to expose. In operations on the living subject, this rule is partially reversed. If we direct the edge of the knife to the skin, we nick and injure it so that its vitality is impaired, and an operation may fail, by destruction of the parts so injured, or at least much unnecessary disfigurement ensue—keep the edge of the knife *away* from the skin, and at the same time do not injure the deeper parts. To accomplish these ends, when the attachments are not dense, either use a dull knife, or break up the adhesion with the handle of the scalpel. When this cannot be done, use the knife carefully; constant practice with this end in view, will confer dexterity, and the good operator can separate tissues most intimately joined together without injuring either.

Incisions are made in a variety of forms, but all of them require certain general consideration. They are linear (1), crucial (2), crescentic (3), elliptic (4), H, V, T, or L, (5, 6, 7, 8). Care must be had to have the incision extend to the same depth through the tissues, and thus the knife is to be inserted perpendicu-

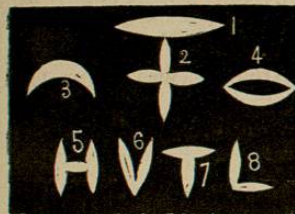


FIG. 28.

larly to the desired depth, and sinking the edge to the surface, drawing it *at one motion* for the desired extent, and then elevating the handle again withdrawing it perpendicularly. All scratching motions must be avoided; the incision made with a firm hand, completing it, if possible, with one motion. In lancing a felon, or abscess, determine the depth it is desired to carry the incision, and grasping the blade of the knife, between the thumb and finger, the edge directed from you, leave enough of the point exposed to extend to the desired depth; with a single motion force the knife in, and complete the section by depressing the handle, allowing the point "to cut its way out." The knife for this purpose must have a thin blade, and if sharp on both sides the pain will be much less severe. Some surgeons prefer a proper abscess knife, of their own pattern; others a curved bistoury; others, again, an ordinary scalpel. In my own practice, when the depth of the abscess is not extensive, I much prefer the ordinary thumb lancet.