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COMPOUND FRACTURES OF THE HUMERUS.

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PART II.—DRESSINGS AND DRAINAGE.

In cases of compound fractures the wounds are usually kept open by means of drainage tubes. In war fractures the break is not an ordinary one, but in most cases the bone is badly shattered, and for months, possibly a year, pieces of bone that will not unite die and consequently come away or have to be removed, so there will, for a long time, be a septic wound, as where there is dead bone there is always sepsis. Experience has shown that if a wound be allowed to close too quickly it invariably has to be re-opened to admit of the removal of dead bone.

The Carrell-Dakin method of drainage and irrigation (not the solution) was used at Highgate long before it penetrated to the hospitals in France. At first normal saline was run through the wounds by means of a piece of bandage drawn through the arm and out at the counter opening, the solution draining into a pail below. Later on small bore tubes, tied at their lower ends, were inserted into the wounds, and an antiseptic solution, which was syphoned from an overhanging flask, was run into the wounds at intervals of about two hours, the flow being regulated by a screw tap on the connecting tube.

(It is important in inserting the tubes to see that all the small perforations are enclosed in the wound, or else, when the tap is turned on, the fluid will escape before it reaches the depth of the sinus.)

The Carrell-Dakin fluid was not used for several reasons. It requires very expert preparation, does not keep good for many days, and has an injurious effect on the skin around the wound, necessitating a protective form of dressing on the surrounding parts before the solution can be used. After trying various antiseptic solutions, Mr. H. J. Paterson, the Honorary Surgeon in Charge at Highgate, decided on using a preparation of sodium mono borate. This can be easily pre-

pared from the crystals, and will keep almost any length of time, so that a large quantity can be made at once. Ninety grammes of the crystals are dissolved in 3,000 c.c. of warm sterile water, the water being only sufficiently warm to melt the crystals. A little of any colouring matter added distinguishes the solution from saline or any other fluids in stock. Sodium mono borate is not nearly so expensive as the Carrell-Dakin solution, also it does not injure the skin unless used continuously for months, when, in some cases, the patient has developed a kind of wound eczema. A change of dressing and an application of Calamine lotion soon relieve matters. Sodium mono borate encourages a goodly flow of lymph to the wound and so "washes it out," carrying with it the pus. So quick and effectual is its action that sometimes within twenty-four hours of its application thick lymph will be seen mingling with the pus which is draining from the wound.

A solution of aluminium acetate was also tried, and is still used for the dressing of superficial wounds. It cleans up a large septic area in a marvellously short time, but it is not so good for irrigation purposes, as it seems to form a kind of crust in the wound which blocks up the smaller perforations of the tubes. The sodium monoborate and the aluminium acetate are both used mixed with the thick medicinal paraffin, and make an excellent dressing for wounds that do not need drainage, or are past the irrigation stage. This preparation has one very valuable asset—it prevents the gauze and wool from sticking to the wound, and so greatly lessens the pain and discomfort of a dressing.

In these days, interest is centred on anti-sepsis, so that asepsis, the most important factor of all in surgical cases, is a little apt to be pushed into the background. It should be borne in mind that the solutions used have quite enough work to do to kill the germs which are already in the wound, and it is the nurse's business to see that none are unnecessarily added. One is a little apt to think of war wounds as "dirty cases" and not to take the care one should with them. A nurse should always remember that she is dealing with open tissue, and her surgical cleanliness should be as punctilious as if she were dressing a clean abdominal case.

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