OPERATIVE SURGERY

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BUTTERWORTHS

OPERATIVE SURGERY

Fundamental International Techniques

Accident Surgery

Edited by

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OPERATIVE SURGERY

Fundamental International Techniques

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Introduction

It may be asked, what is accident surgery and what need is there to add a volume with this title to those that already cover all the systems and organs of the body?

Accident surgery is most informatively defined as the surgical and associated care of injured persons and whether or not the reader is prepared to accord accident surgery the status of a specialty it is liable to confront the young surgeon in training or the surgeon working in sufficient isolation to require him to deal with all-comers, as a clearly recognizable range of operative requirements at short notice. In general, the operations described are those that are likely to be required within 24 hr or so of an accident but I have not felt bound by this limit.

The purpose of this book is to provide practical advice on such parts of general and specialized surgery as are relevant to the needs of the recently injured person and to this end some chapters contributed to other volumes in the series have been reproduced in this one. However, accident surgery has its own requirements that are recognizably different from those of other surgical specialties and these are reflected in chapters written specially for this volume. Gunshot wounds of the head, for example, are no more the province of the neurosurgeon than of a surgeon of general competence working without such specialized skill at hand. Ruptures of the liver, on the other hand, can be such formidable injuries that they deserve special presentation for the surgeon who feels obliged to operate to save life but may have no special claim to abdominal expertise. Apart from these considerations, accident surgery at its best requires the skill and judgement that may owe much to specialized training but owes most to the experience gained in continually providing surgical care for injured persons.

The policy has been to try to make chapters reflect the detail or complexity of a subject, even though this may seem to unbalance the volume when taken chapter by chapter. The hope is, however, that the surgeon that turns to this volume for guidance will find that it provides the information that he seeks. To this end, standard and well tried methods are given preference, with no attempt to do more than indicate some of the other methods that are available.

Hard may be the lot of the editor of a volume with many contributors but even the hardest task-master must admire and respect the forebearance of contributors who submit to efforts to maintain a uniformity of approach and style as well as to stay the alarming debasement of the language for which medical men have much to answer. Particular thanks are due to the artists, whose interpretation of rough sketches and not always very clear photographs showed commendable perspicuity as well as skill; to my tolerant family and my secretary Miss L. E. Langley whose cheerful smile lasted a long and taxing course well and to the editorial staff of Butterworths who so effectively combined advice, sympathy and firmness.

P. S. LONDON

OPERATIVE SURGERY

Contents of this Volume

CONTENTS OF THIS VOLUME

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General Care of Wounds and Technique of Suturing

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PRINCIPLES FOR WOUND MANAGEMENT

The basic ideals in the care of wounds are (*1*) prevention of infection and (*2*) promotion of primary intention healing.

Successful wound repair, without complication, following injuries which breach the skin is essential for the restoration of function of the damaged part.

The most important complication is *infection*. If it becomes established it results in: (*1*) further destruction of tissue; (*2*) delayed healing; (*3*) an increase in fibrosis and scar tissue; (*4*) loss of function and (*5*) increased disfigurement.

The management of wounds is, therefore, directed towards the prevention or elimination of infection, followed by repair of injured tissues and closure of the skin.

TIMING

Ideally, the definitive treatment should take place as soon as possible after the injury is sustained; delay adds to the risk of infection. The risk varies also with the site of the wound and the means by which it was sustained.

A superficial incision caused by a clean sharp implement, sutured within 6 hr of being inflicted, stands every chance of healing without complications.

At the other end of the scale, a crushing type of injury associated with fractures, resulting in necrosis or avulsion of skin and other tissues, heavily contaminated with dirt, provides conditions in which most careful attention to the principles of wound care is essential. The difficulties are increased when there is a prolonged delay before adequate treatment can be carried out, as bacterial contamination will probably progress to established infection.

Delay may be justified, however, when a wound is associated with a potentially more serious injury, for example of the head or abdomen, which requires observation for some time before a decision regarding treatment of the various injuries can be made.

In general, most wounds less than 6 – 8 hr old can be *closed primarily* unless there is gross contamination.

This principle, therefore, applies to the majority of civilian injuries in peace time.

Under battle conditions and when delay is inevitable for other reasons, primary repair may be contra-indicated even though the wound itself may appear suitable for immediate closure.

An exception to this occurs in lacerations of the face, head and neck. Because of the particularly rich blood supply to these areas they may without ill-effect be left for 24 – 48 hr before being sutured.

Initial examination and protection of the wound

Apart from the removal of loose pieces of clothing or other foreign material which can be *easily* lifted away minimal exploration or cleansing of the wound itself should be carried out on the first examination of the patient.

This inspection, related to the history of the injury is merely to ascertain whether the wound is localized and trivial or part of much more extensive and possibly life-threatening damage.

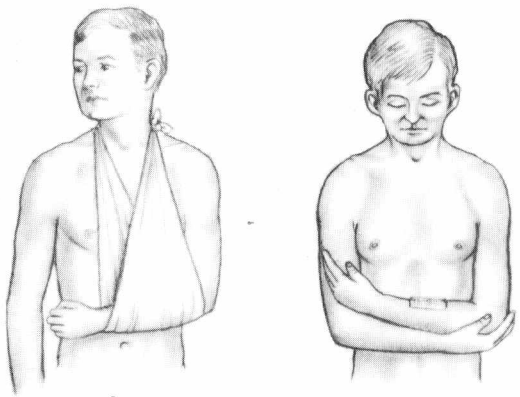
In the former instance simple clinical examination may be all that is necessary to exclude, for example, division of a nerve or tendon in the case of a cut finger.

In the latter instance it may be far more important to pay attention to the general condition of the patient, to control external haemorrhage and maintain an efficient airway, to suspect and observe for internal haemorrhage or failing consciousness.

After the preliminary examination the wound should be covered with a sterile dry dressing and gentle but firm pressure applied by means of a layer of wool or Gamgee held in place with a crêpe bandage.

1a & b

An injured upper limb is comfortable in a triangular bandage sling, or cradled by the other arm.

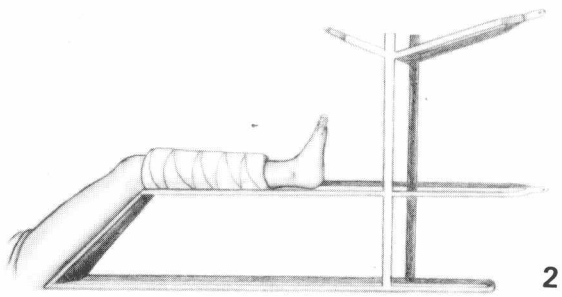


1a 1b

2

A lower limb should be kept gently elevated on a pillow, Braun's frame or Thomas' splint. This combination of pressure and elevation stops the bleeding from most wounds.

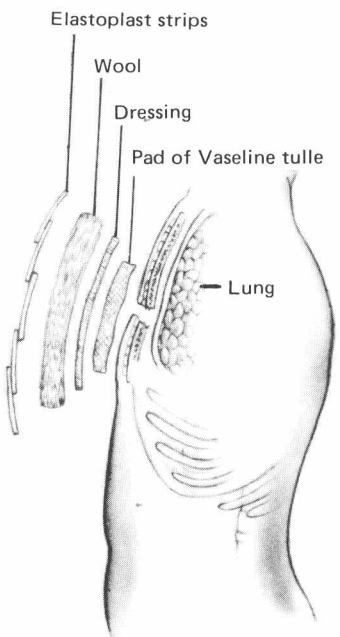
A scalp wound bleeds less if the patient is kept propped up, unless exsanguination is such that shock has supervened. In this case temporary sutures inserted to close the wound under some tension may slow the haemorrhage whilst the blood volume is being restored. It may be possible to identify a larger severed artery and apply forceps and ligate it before the definitive exploration and repair.



2

3

In the case of a penetrating injury of the chest-wall, the opening can be sealed effectively with a large pad consisting of several thicknesses of tulle gras under the dressings and covered with adhesive strapping whilst attention is paid to stabilizing any paradoxical movements of the rib cage. The immediate care of a person with this type of wound should also include intubation and assisted ventilation of the lungs, and the insertion of intercostal drains to the pleural cavities (*see* Chapter on 'Drainage of Pleural Space by Tube', pages 189–191).



3