Foreword

It is to the great and lasting credit of Lorenz Böhler and his school that they have in the last decade developed and demonstrated so thoroughly the techniques for the conservative management of fractures.

Nevertheless there have always been many, including some from Böhler’s school, who have found considerable place for surgical management, and with the significant progress in general surgery seen in postwar years, a new stimulus has been given to this part of traumatic surgery, especially since bone injuries have become more complex and frequent.

The concept of internal fixation is not new. The serious criticisms that have been levelled at it retain today their basic significance. Progress in the fields of asepsis, corrosion-free metal implants, operative experience and postoperative care has diminished the dangers but has not relieved the surgeon of responsibility.

The Association for the Study of the Problems of Internal Fixation (AO) has devoted itself over a number of years to the basic principles and best methods of open treatment of fractures by means of extended clinical and scientific studies in order to determine in each individual case the most promising line of treatment. At the same time a well designed and tested instrument set has been developed with precise instructions for the appropriate techniques. As a result, the new observations about primary bone healing which have emerged from the practice of rigid internal fixation are as interesting as the uses to which they can be put in allowing early mobilization.

This book is intended to serve as a guide to the choice of procedure and to the proper execution of operative fracture treatment. Only if one is familiar from the outset with the details of indications, techniques and aftercare can failures be prevented. Under these circumstances internal fixation is a responsible and rewarding medico-surgical endeavour.

Freiburg i. Br., December 1964

H. Krauss
Preface

Early in 1958, fifteen Swiss general and orthopaedic surgeons joined together to re-examine the common procedures then in use for the operative treatment of fractures. This group formed the Association for the Study of the Problems of Internal Fixation (AO)*. Basic research workers, metallurgists and the Laboratory for Experimental Surgery at Davos, Switzerland, have cooperated in evaluating the results.

This book contains the guiding principles about open fracture treatment which have been crystallized during an experience covering 5 years in which 4000 fractures have been treated surgically and documented. Its purpose is to describe established procedures from our own clinical experience and also to emphasize the dangers and failures that have occurred.

This book is not basically intended to distinguish between the indications for surgical and conservative treatment. Indeed, in the case of fractures of the shaft of the humerus, we tend to be overwhelmingly conservative. Nevertheless, the surgical treatment of the fractured humerus will be discussed in detail as well.

It should also be mentioned that the operative procedures described here relate to mature bone. Occasionally a non-rigid fixation, for example with parallel KIRSCHNER wires, may be indicated in the case of periarticular fractures in children, to prevent later growth trouble or in the case of articular fractures to restore good joint alignment. In general, however, the indications for opening a closed fracture on a growing skeleton are rare indeed.

Our clinical experiences repeatedly emphasize the significance of the stability and blood supply of the fractures we operated on. When these two objectives were attained, firm and rapid union of the fractures resulted in all cases. The quantity of metal used does not appear to be of primary significance.

The healing of the bone, however, represents only part of the problem. The practice of emphasizing the bone lesion to the exclusion of the soft tissue damage should be firmly abandoned. Modern fracture treatment has as its goal the restoration of full function to the injured extremity. In our view, internal fixation can only be satisfactory when the fracture is mechanically neutralized so that the patient can actively and without pain move muscles and joints of the broken extremity at the earliest possible moment after surgery.

* This in German is „Arbeitgemeinschaft für Osteosynthesefragen“ and will be referred to as AO.
Open treatment of fractures is a valuable but difficult method which involves much responsibility. We cannot advise too strongly against internal fixation if it is carried out by an inadequately trained surgeon, and in the absence of full equipment and sterile operating room conditions. Using our methods, enthusiasts who lack self-criticism are much more dangerous than skeptics or outright opponents. We hope therefore that readers will understand our efforts in this direction and that they will pass on any constructive criticisms to us.

December 1964

M. E. Müller  M. Allgöwer  H. Willenegger

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