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Endoscopy of the Upper GI Tract - A Training Manual
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Attempts to look into human body orifices and body cavities date back to antiquity. Most of these efforts met with little success because of poor illumination. A breakthrough came in 1806 when Philip Bozzini introduced his *Lichtleiter* ("light conductor"), which supplied at least a theoretical solution to the problem. Bozzini was the first to envision the future application of endoscopes in urology, gynecology, and gastroenterology and the eventual development of laparoscopy.

Adolf Kussmaul introduced the rigid gastroscope in the 1905. The gastroscopes used during the first half of the 20th century were semirigid devices in which lens systems transmitted the image to an eyepiece. A major advance came in the mid-20th century, when Basil Hirschowitz developed a flexible fiberoptic endoscope. But even this technology appears to have been superseded by the development of video endoscopy and, more recently, by wireless capsule endoscopy.

As endoscopy has evolved, the instruments have become more flexible and their outer diameters smaller, making the examination much easier for both the endoscopist and the patient. Today, upper gastrointestinal endoscopy is the most rewarding procedure for investigating complaints of the upper gastrointestinal tract. Visual inspection, specimen collection, and any necessary interventions can be carried out in the same sitting. Upper gastrointestinal endoscopy is safe and easy to perform for experienced endoscopists.

The quality of the examination depends upon the interplay between the endoscopic technique and the interpretation of the images. Anyone who is learning endoscopy is bound to encounter technical difficulties at first. For this reason, we have provided ample didactic information to supplement the atlas portions of this book.

Endoscopic interventional procedures have been practiced for more than 30 years. The range of endoscopic treatment options is constantly expanding, and examiners are often expected to perform these interventions in the early phase of their endoscopic training. Established therapeutic procedures are described in some detail, therefore.

We hope to provide our readers with an easy-to-use, comprehensive introduction to the method and its capabilities, and we wish them much success and satisfaction in the practice of gastrointestinal endoscopy.

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Ultrasonic Energy for cutting, coagulating and dissecting

Surgical technique fundamentally consists of cutting and hemostasis. Ancient civilizations used sharp instruments made of stone, and later of metal, to make surgical incisions. The principle of employing specifically designed tools to cut tissue has not changed significantly since; the scalpel and scissors that are indispensable tools in the modern operating room today are little more than the result of refinements in production and application techniques.

In ancient times, as far as we can tell from existing records, hemostasis was accomplished with compresses made of plant material. Surgical wounds, in particular those incurred in amputations following battle injuries, were controlled with tourniquets. Later, wounds were cauterized with red-hot iron to stop bleeding.

The two main principles of hemostasis—ligation and cauterization by heat—are still valid today, whereby technical improvements in controlling bleeding have been represented by surgical ligation, and, more recently, by the use of clips or rows of staples.

Hemostasis through the application of heat experienced a renaissance with the introduction of electrocoagulation. Here, high-frequency (HF) electrical power is passed through the patient and focused at the tip of an active electrode. The electrical density at the tip leads to the release of thermal energy in the immediate vicinity, which then can be used to cauterize blood vessels.

HF surgery is not free of risks; tissues can be damaged by heat and electrical current. The significance of the risks and related complications in HF surgery are particularly evident in laparoscopic surgery.

By using ultrasound as a source of energy, an alternative method for cutting and hemostasis during surgery was introduced—without the risk of electrical injury, and with significantly lower thermal stress to tissues.

The initial motivation for the development of this new technology was the desire to develop a safe and less complicated method for surgical hemostasis. As it turns out, the result is a significant paradigm shift. Today, ultrasound is used not only for hemostasis; rather, multifunctional instruments offer the possibility of performing procedures while sparing tissues, conserving blood, and reducing complications. Incision, dissection, and hemostasis can now be dealt with in a single procedure.

This book deals with the fundamentals of the technique; it traces the technical evolution, examines the technical requirements for successful use, and above all discusses the continuous development of the system and its practical uses in various areas of surgery.

Renowned surgeons from throughout Europe and the USA pass on their experience with ultrasound dissection and hemostasis in a practice-oriented survey.

This book is intended to further the successful spread of the method and initiate ideas and projects for the development of further technical and practical improvements.

Libri ricevuti per recensione

D. Santovito, P. Rispoli, A.M. Raso, *Responsabilità professionale nella chirurgia carotidea. Lesioni neurologiche minori*. Edizioni Minerva Medica - Torino, 2004, 56 pag € 11,50, ISBN 88-7711-478-9.

Jean-Pierre Bequemin, Yves S. Alimi, Jacques Watelet, *Controversies and updates in vascular surgery*, Edizioni Minerva Medica - Torino, 2005, 322 pag., 49,00, ISBN 88-7711-488-6.