K. Sugano (Editor in Chief)

H. Yamamoto, H. Kita (Eds.)

Double-Balloon Endoscopy

Theory and Practice

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With 109 Figures, Mostly in Color

Kentaro Sugano, M.D., Ph.D.
Professor, Department of Internal Medicine
Division of Gastroenterology, Jichi Medical University
3311-1 Yakushiji, Shimotsuke, Tochigi 329-0498, Japan

Hironori Yamamoto, M.D., Ph.D.
Associate Professor, Department of Internal Medicine
Division of Gastroenterology, Jichi Medical University
3311-1 Yakushiji, Shimotsuke, Tochigi 329-0498, Japan

Hiroto Kita, M.D., Ph.D.
Assistant Professor, Department of Internal Medicine
Division of Gastroenterology, Jichi Medical University
3311-1 Yakushiji, Shimotsuke, Tochigi 329-0498, Japan

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Preface

The double-balloon endoscope came about as the combined result of a brilliant idea and tenacious effort by Hironori Yamamoto, an associate professor in our department. The first clinical application of the double-balloon method was made for diagnosis of hemangioma in the small intestine of a patient with Maffucci's syndrome, as described in this book. Dr. Yamamoto attached a handmade balloon to an upper gastrointestinal endoscope and manually inflated and deflated the balloon, with a sphygmomanometer monitoring the pressure. The maneuverability and the time required for examination appeared to be similar to those in the procedure using a conventional enteroscope, although I was impressed by the fact that double-balloon endoscopy actually revealed hemangioma previously suspected by contrast radiogram, validating the concept of the double-balloon method. However, there were various problems with the handmade device, including balloon damage, dropout, and air leakage, as well as the patience required on the part of the assistant doctors, all of which made its practical application difficult. Despite these circumstances, Dr. Yamamoto clearly identified and solved the problems one by one. As he describes in chapter 1 of this book, the cooperation of manufacturers such as Nisco and Fujinon was a great help, and many medical staff in our department who continuously assisted him in time-consuming examinations also contributed significantly to the practical application of this novel modality of endoscopy. Through the development of this procedure, we directly observed many previously unrecognized lesions and performed endoscopic treatments that had been possible only by surgical operation, and we found that the procedure was tremendously useful for a variety of disorders. Now the double-balloon endoscopy system distributed by Fujinon is in clinical use worldwide and contributes to the diagnosis and treatment of disorders in the small intestine and other regions of the gastrointestinal tract that were not easily accessible by conventional approaches. However, there was no guidebook for systematic training in this procedure, and we believed it was important to provide an opportunity for many clinicians to learn the procedure and perform it properly; thus we decided to publish this book. Consequently, the book provides a range of techniques and tips developed through trial and error by Dr. Yamamoto and our colleagues, who are co-authors of the book. A DVD is included to provide a visual presentation of specific manipulations.

As described in the book, the double-balloon method was initially intended for use in enteroscopy; however, the double-balloon endoscope allows observation of the entire gastrointestinal tract, including the stomach and the large intestine. In addition, the endoscope allows shortening and straightening of the intestinal tract and is suitable for examination of a reconstituted intestine after Roux-en-Y anastomosis and colonoscopy in which insertion is difficult. Thus, we have changed the initially planned title *Double-Balloon Enteroscopy* to *Double-Balloon Endoscopy*.

Some people were skeptical of the clinical significance of the procedure, because intestinal diseases were previously considered to be uncommon and the development of the double-balloon endoscope paralleled that of the capsule endoscope. As evidenced by our short-term experience described in this book, however, we realized that a variety of lesions, hitherto unrecognized because of their limited accessibility, were present in the small intestine as well as in the blind loop. Compared with the capsule endoscope, the double-balloon endoscope produces images with much higher resolution, provides maneuverability that allows retrograde examination, and permits concomitant use of a variety of diagnostic tech-

niques such as biopsy, dye spraying, and contrast-enhanced examination. It should also be noted that the double-balloon endoscope is compatible with almost all procedures for endoscopic treatment. In combination with those procedures, double-balloon endoscopy now appears to be far superior to capsule endoscopy with respect to diagnostic and therapeutic performance.

This book is intended to be useful as a technical manual and does not include details of individual diseases and the basis for their diagnosis. It may be somewhat difficult for complete novices to understand the initial settings and other technical details that we are accustomed to. In the future, we will make revisions in response to questions and criticisms from readers. We hope, however, that the book will contribute to the elucidation of the pathophysiological mechanisms of intestinal diseases and their treatments, which we believe will evolve dramatically in the twenty-first century with the general availability of double-balloon endoscopy.

Kentaro Sugano
Department of Internal Medicine
Division of Gastroenterology
Jichi Medical University, Japan
January 2006

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List of Editors and Authors

● Editor in Chief

Kentaro Sugano	Professor Department of Gastroenterology, Jichi Medical University
----------------	---

● Editors

Hironori Yamamoto	Associate Professor Department of Gastroenterology, Jichi Medical University
-------------------	---

Hiroto Kita	Assistant Professor Department of Gastroenterology, Jichi Medical University
-------------	---

● Authors

Hironori Yamamoto	Associate Professor Department of Gastroenterology, Jichi Medical University
-------------------	---

Masayuki Takano	Fujinon Corporation
-----------------	---------------------

Syuuichi Yamataka	Fujinon Corporation
-------------------	---------------------

Tomohiko Miyata	Department of Gastroenterology, Jichi Medical University
-----------------	--

Yutaka Sekine	Internal Medicine, Nasu Minami Hospital
---------------	---

Tomonori Yano	Department of Gastroenterology, Jichi Medical University
---------------	--

Keijiro Sunada	Department of Gastroenterology, Jichi Medical University
----------------	--

Yoshikazu Hayashi	Department of Gastroenterology, Jichi Medical University
-------------------	--

Hiroyuki Sato	Department of Gastroenterology, Jichi Medical University
---------------	--

Toshihiko Higashizawa	Department of Gastroenterology, Jichi Medical University
-----------------------	--

Michiko Iwamoto	Department of Gastroenterology, Jichi Medical University
-----------------	--

Hiroto Kita	Department of Gastroenterology, Jichi Medical University
-------------	--

Contents of Attachment DVD

The DVD that comes with this book, *Procedure Manual for Inserting the Double-Ballon Endoscope*, was provided by Fujinon Corporation. Contents are as follows.

1. Introduction	Introduction of the products, preparation, explanation of operation
2. Clinical Examples	How to operate the products
3. Interviews	Interviews with Dr. Hironori Yamamoto

DVD Planning and creative work : Fujinon Corporation

Stereo sound track recorded on Sony Linear PCM		Image size 4 : 3
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