

Intraoperative Graft Patency Verification in Cardiac and Vascular Surgery

Edited by Guiseppe D'Ancona, Hratch L. Karamanoukian, Marco Ricci, Tomás A. Salerno, and Jacob Bergsland. Armonk, New York: Editorial Futura Publishing Company, Inc., 2001; 264 pages; 145 figures; 15 tables. ISBN 0-87993-488-3.

In recent years, the intraoperative assessment of aortocoronary graft function has received renewed interest. This is due to the introduction of more demanding surgical techniques that are subject to technical errors, such as complex arterial revascularization procedures and aortocoronary bypass without extracorporeal circulation. In addition, the assessment of graft patency is used to improve surgical quality control and as an investigational tool, so it has become an important part of conventional revascularization procedures. This development has been facilitated by the appearance of ultrasonic doppler *transit time* flow meters, which are easy-to-use and reliable. However, the interpretation of intraoperative graft flow requires exact knowledge of the complex physiology of coronary flow and experience in assessing the parameters that can be obtained with this tool.

This book offers readers a detailed review of different aspects of the topic, written by surgeons on teams experienced with the use of intraoperative coronary blood flow measurements. The book has eleven chapters and an appendix offering practical clinical case information. The book is well organized and easy to read, with the only exception of the reiterated appearance of certain concepts, which is inherent to a book with many authors from different groups. In addition, the chapter arrangement could have benefited from organization by content.

The first chapters are dedicated to analyzing flow physiology in blood vessels and vascular grafts, both coronary and peripheral. It also describes the basics of the techniques traditionally used in the intraoperative assessment of graft patency and flow, with special emphasis on ultrasound flow measurements and the

transit time principle. Although most of the book refers to coronary surgery, one chapter specifically discusses the use of flow measurements in other areas of peripheral vascular surgery. The central chapters analyze, much as a specialized review journal would, the methods and results of graft flow measurements and *transit time* used by some of the most experienced groups in the world. Intraoperative findings are correlated with mid-term graft patency. In my opinion, one of the most interesting chapters in the book analyzes the effect of competitive flow in the graft and native coronary arteries. This is one of the most conflictive aspects of intraoperative graft flow measurements, in addition to the *steal effect* that can occur in complex arterial revascularization, in which one or more arterial grafts are perfused by a single mammary artery graft. Another section of practical interest is the appendix, which contains anatomic and clinical data, as well as recordings from several real, more or less typical cases. This is useful in clarifying some of the daily questions that users of this sophisticated technology confront.

In summary, this interesting book analyzes a problem currently of interest to surgeons and serves as a basis for interpreting the data obtained with this popular technique. However, the physiology of aortocoronary graft flow, especially in the perioperative period, is complex and subject to many factors. This book was very helpful in interpreting the results of the technique, although it does not offer responses to all the doubts that appear in daily clinical practice.

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