

PREFACE

CARDIOPULMONARY BYPASS: ATTRACTIVE, BUT HARMFUL?

With the introduction of cardiac surgery more than five decades ago, and the use of the heart–lung machine for open heart surgical procedures granting the surgeon unlimited time in which to operate inside the heart, a complex task has been given to the perfusionist.

Initially, cardiopulmonary bypass was so deleterious to the patient, and knowledge of bypass was so limited, that the unknown was balanced mostly by trial and error. Once extracorporeal support became feasible in man, a great need for skilled perfusionists sparked authors Charles C. Reed and Diane Clark to write *Cardiopulmonary Perfusion*. This basic textbook is surely on every perfusionist's shelf, and is useful as an adjunct to training personnel.

The next phase of cardiopulmonary bypass enhanced the skills of the perfusionist and enabled cardiac surgery to grow by leaps and bounds. Because of the complexity of artificial circulation and the importance of the science of perfusion technology, we have gained respect in the surgical arena, but at the same time our task is regarded as insidious, owing to its effect on inflammatory response.

The aberrations of normal physiology associated with cardiopulmonary bypass often bring criticism to its use; however, the fact that some patients have no ill effects from the procedure complicates this perception. After years of clinical investigation and publication, cardiopulmonary bypass has been deemed necessary in a controlled environment involving perfusionists, surgeons, and anesthesiologists.

Our library was limited to a varied selection of medical surgical textbooks until Joseph Utley et al. published a comprehensive textbook for perfusionists and clinicians addressing both practical and reference needs. We continue to develop new strategies to enhance our patient care. Along the way, innovations lead us to challenge present technology.

Today, it seems that the surgeon and patient would dream to have all procedures done OFF of cardiopulmonary bypass, thereby amelior-

rating its perceived deleterious effects. However, the nearly 650,000 procedures that require cardiopulmonary bypass and a perfusionist created a need for the development of a textbook that investigates advanced perfusion techniques that are currently being practiced; hence, *On Bypass: Advanced Perfusion Techniques*.

We hope that this collection of techniques and protocols will add to your repertoire and that your patients' care will be enhanced. We paired a perfusionist and a surgeon for each chapter in an effort to share a team approach to difficult and immediate decision making in the operating room. In fact, our practice depends on it.

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On Bypass

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