

Preface

It is clear that the capacity of the human body for self-repair reduces with age and, thus, it has been the dream of mankind for centuries to rejuvenate or replace worn out or diseased body parts. The dream started to come true in 1890 when the first total hip replacement was carried out and an ivory prosthesis was implanted and glued into place. Following this development, considerable progress was made using a variety of different materials ranging from Pyrex to Bakelite. The forerunners of the modern hip replacement however did not emerge until the 1960s when McKee & Watson-Farrar* (1966) produced the first metal prosthesis and Charnley† (1967) developed a metal-polyethylene construct. Organ transplantation, of course, has also revolutionized medicine. Following Alexis Carrel's Nobel prize-winning work on developing the basic surgical skills that are still used in renal transplantation today, the first human-to-human kidney transplant was performed by Voronoy in 1933.

The proportion of the world's population formed by the elderly has risen steeply over the past few decades. In addition, the introduction of new immunosuppressant regimes (VS Gorantla *et al.*, 2000), plus improvements in post-surgical care, have established transplantation as a life-saving procedure for many patients with end-stage organ failure. However, the lack of donor organs remains

*McKee GK, Watson-Farrar J. Replacement of arthritic hips by the McKee-Farrar prosthesis. *J Bone Joint Surgery* 1966; **48B**:245–259.

†Charnley J. Total prosthetic replacement of the hip. *Physiotherapy* 1967; **53**:407–409.
Gorantla VS, Barker JH, Jones JW Jr, Prabhune K, Maldonado C, Granger DK. Immunosuppressive agents in transplantation: Mechanisms of action and current anti-rejection strategies. *Microsurgery* 2000; **20**(8):420–429.

a major obstacle; it has been estimated that a new name is added every eighteen minutes to the list of patients needing a transplant (United Network for Organ Sharing). These developments have led to an even greater demand for replacement body parts.

Several books have been published on particular aspects of organ replacement and/or transplantation but none covers the major aspects of this relatively new branch of medicine as comprehensively as this volume. The Editors have done a good job both in recruiting leading figures in the field to contribute to the book and in covering the key aspects of the problems that exist currently in organ replacement, including xenotransplantation, regulatory issues and single organ engineering.

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