



Richard S. Laskin · Robin A. Denham
A. Graham Apley

Replacement of the Knee

With 323 Figures

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Richard S. Laskin, MD, FACS
Chairman, Department of Orthopaedic Surgery,
Long Island Jewish-Hillside Medical Center,
New Hyde Park, New York, U.S.A.
Associate Professor of Orthopaedic Surgery,
School of Medicine, Health Services Center,
State University of New York at Stony Brook,
New York, U.S.A.

Robin A. Denham, FRCS, FRCS(E)
Consultant Orthopaedic Surgeon,
Portsmouth Hospital Group,
Portsmouth, England

A. Graham Apley, FRCS
Honorary Consulting Orthopaedic Surgeon,
St. Thomas' Hospital, London, England
Emeritus Consultant,
Rowley Bristow Orthopaedic Hospital,
Pyrford, Surrey, England

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Preface

“Knee replacement is bound to fail—providing the patient lives long enough”. There is some truth in this hoary cliché, so why write books on the subject? I think the answer is that knee replacement has at last become established and even respectable. The more absurd surgical extravaganzas have been recognised and discarded; today a patient can expect to rely on his new knee to serve him with comfort for a fair number of years.

Of course even the early knee replacements often made the patient comfortable; the trouble was they just did not last. All too often the innovator’s enthusiasm was overtaken by the patient’s disillusionment. Indeed, the operation might well have been abandoned had it not been for the hope that one day the dazzling results at the hip might be matched at the knee.

These pioneer prostheses were designed as though the knee were biomechanically as straightforward as the hip. Alas, numerous complexities soon became apparent; in response the models multiplied—and multiplied—until the ordinary orthopaedic practitioner became hopelessly bewildered. He found himself subjected to high pressure propaganda; from the surgeon offering a miracle cure, from the engineer seeking fame and from the manufacturer expecting fortune. Visiting his unit as a team, this trio was well-nigh irresistible.

The strategy varied but usually the engineer attacked first, using obscure diagrams and incomprehensible equations as his heavy artillery. This softening-up process was followed by the surgeon, who advanced with his barrage of breath-taking slides and his battery of glittering weaponry. The final mopping-up was left to the manufacturer with his glossy, persuasive pamphlets and his fair but formidable price-list. Unfortunately the entire performance (to abandon the military metaphor) was repeated a month or two later by another trio visiting the hospital to present yet another equally attractive implant, based upon yet another biomechanical theory and employing yet another set of jigs and tools.

To decide between rival claimants we clamoured for statistics but, though figures were plentiful enough, no two sets were ever comparable. The clinical and radiological parameters varied, and the criteria of success depended more on surgical optimism than on patient satisfaction. As for durability, the key factor, assessment was never possible, for the design of each model changed annually, for all the world like automobiles. Long-term follow-up remained a mirage, eagerly sought, distantly discernible, but never reached.

You will have noticed that I have been using the past tense. Happily the clouds are clearing. Old prostheses are being discarded, leaving only a few well-defined groups; new models, when they appear, usually fit into these groups (and indeed often bear an uncanny, not to say suspicious, resemblance to some already familiar). Above all, statistics are becoming standardised and, at last, the period of follow-up is achieving useful levels. So it seemed reasonable to produce a book.

In the early chapters the neglected question of indications is considered, alternative methods of treatment are discussed and the spectrum of available knee prostheses is outlined; in the final section, partial replacement of the knee is discussed. The main portion of the book, however, is devoted to two methods of knee replacement; perhaps two-and-a-half methods would be more accurate, since one of the authors, after using a standard prosthesis for some years, then introduced a number of modifications. These chapters are written by two surgeons working in different continents and in different social environments. What they share is a scientific approach and a great experience in the field of joint replacement.

Each of these two surgeons has sought to provide the uncommitted surgeon (or the dissatisfied one) with a working manual on how to replace the knee (hence the profusion of illustrations), a biomechanical justification for that particular model, and an account of the results which he can, with reasonable care and skill, expect to achieve. The important differences between the two surgeons are an intentional feature of the book.

The reader is offered a choice, but, in contrast to the earlier chaotic multiplicity, this choice is strictly limited. The surgeon already committed to a particular model is invited to compare his results with those presented here. This invitation is coupled with a challenge. If his results are worse than ours we ask him to measure the post-operative leg alignment films of his patients, for we believe that failure to achieve the normal slightly valgus position is a potent source of failure.

If his results are better, we want to be told; and if his figures are sufficiently persuasive, maybe we will change. The book concludes with a glance into the future, but this the reader should regard merely as orthopaedic astrology.

London, September 1983

A. Graham Apley

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Richard S. Laskin

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Chapter 2

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Chapter 6

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Professor R.E.D. Bishop, FRS, CBE, Vice Chancellor, Brunel University
Dr. J. Bowman, BSc, PhD, Department of Non-Metallic Materials, Brunel University
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Mrs. L. Blackwell, Queen Alexandra Hospital, Cosham

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