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Henrik Malchau

The Well-Cemented Total Hip Arthroplasty

Theory and Practice

Steffen J. Breusch (Editor)
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With 521 Figures and 61 Tables

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*This book is dedicated to the
work and life of Sir John Charnley
and to all patients undergoing total hip arthroplasty*

*»Those who cannot remember the past are condemned to repeat it«
Santayana*

*In memoriam Thomas Günther from Springer,
who unexpectedly died during this book project.*

He will be greatly missed.

Forewords

In the forty-six years since Sir John Charnley first advanced his a revolutionary concept of a totally artificial hip joint consisting of a metal-to-plastic articulation, literally millions of people have had their lives dramatically and remarkably improved by this seminal innovation.

His brilliance in concept reached successful conclusions only through his relentless dedication, coupled with his outstanding application of his far-ranging commitment to the science and engineering of the issue.

These very unique features of his work were equally matched by his extraordinary persistence. It is interesting to assess, forty-six years later, how close to the mark he was and is. If success is to be measured as standing the test of time, he is exemplary.

Thousands of others have poured these ideas, efforts and experience into this vessel. Understandings have improved and new insights now abound, to augment Charnley's original ideas. It is time, therefore, for a major comprehensive assessment of this entire field of cemented total hip arthroplasty by a broadly based, highly selected group of rigorous scientists and clinicians who have specific skills and knowledge in the multiple aspects of progress in the field.

Such is this book. It is unprecedented in scope, timeliness and quality. It is, indeed, a serious, in depth compilation of the 2005 »state of the art«.

W.H. Harris

Boston, USA

»The surgeon who is less experienced and trained in total joint arthroplasty should predominantly use cement for implant fixation. It is more forgiving and it may be better compensating for insufficient preparation technique«. Surprisingly, it is not long ago, that this opinion was found in many orthopaedic centres. It is based on a fundamental misunderstanding that cement should be used to fill up defects and it ignores all the basics of cemented implant fixation technique, which has been extensively studied and published by Sir John Charnley and other dedicated orthopaedic surgeons. However, many users of cemented total hip replacement are not aware of this fund of well-established knowledge and the status of ongoing research in this field. The same is true for the results of the Swedish and other Scandinavian hip registers. They have clearly demonstrated the benefits of modern cementing technique. However, in many countries as well as many orthopaedic centres the use of modern cementing technique is far from being comprehensive. Limited financial resources are often given as reason. This seems to be an extremely short-sighted way of calculation. Quality in total joint replacement is primarily defined by implant survival. Based on that, a well-cemented total hip arthroplasty remains the golden standard. It is thanks to the editors and contributors of this book that we may learn and understand all about »well-cemented total hip arthroplasty«.

The orthopaedic surgeon, who wants to know, may read the book. The one, who already knows, may also read the book – he will recognise that he did not know everything. The one, who does not want to know, should not read the book – he should also not perform cemented total hip arthroplasty.

V. Ewerbeck

Heidelberg, Germany

Preface

Sir John Charnley stated in his book »Acrylic Cement in Orthopaedic Surgery« (Longman Group Limited, 1970):

»There is no doubt that in orthopaedic surgery acrylic cement is going to be widely used in many different parts of the world; there is equally no doubt that its use by uninformed operators will produce complications which might seriously threaten its reputation and might hold back the progress of science. If criticism of acrylic cement are to come from this type of source, it is important to have available the main references to research in this field, both in favour of and against the main thesis«.

»The Well-Cemented Total Hip Arthroplasty – Theory and Practice« is a contemporary and complete source for the orthopaedic surgeon, fellow or resident performing total hip arthroplasty or other professional groups involved in the treatment of patients operated upon with a total hip.

The content covers topics from clinical aspects such as type of incision, the operative steps in the cementing technique, optimal implant designs, perioperative management and prevention of complications. The basic science aspects include properties of bone cement, mixing and bone preparation. The clinical outcome with different types of implant design is also covered and based on both individual surgeons experience as well as the Scandinavian registries.

We are pleased that today's leading experts, both preclinical and clinical, have contributed with their expertise. The intention from the editors has been to cover as many aspects as possible around the cemented total hip arthroplasty and as broadly as possible. The authors list covers 9 different countries and hopefully a balanced view in the different topics.

It is our hope that the textbook will be informative and serve the clinicians and therefore also improve the clinical results in the coming years.

Summer 2005

Henrik Malchau

Steffen Breusch

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