GUIDELINES FOR LONG TERM FOLLOW-UP OF JOINT REPLACEMENT PATIENTS

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Introduction

Hip and knee joint replacement represent two of the most successful operations performed by surgeons across all specialties[1], and consistently improve quality of life to thousands of patients throughout Australia every year[2].

Historical perspective

No major operation is without complications, and all Total Joint Replacements (TJRs) are at risk of developing problems which include loosening, lysis and very occasionally metal corrosion[3]. All can occur during the course of the implant's lifespan, and left untreated, can lead to peri-prosthetic bone erosion with risk of fracture, or soft tissue destruction with risk of joint instability. Frequently these problems produce symptoms which prompt the patient to seek specialist review[4-7]. However, occasionally they can develop insidiously, and hence traditionally surgeons have advocated regular (annual or biennial or other) clinical and radiological review of all TJRs in an attempt to identify these "silent problems" and allow timely intervention[8].

Current dilemma

Over the past three decades, with continual improvement in implant materials, component design and surgical technique, there has been a steady reduction in the incidence of many of these problems[4,9]. Joint registries have demonstrated a reduction in revision rates hence there is now some doubt as to what the correct follow-up advice should be.

Over 100,000 hip and knee replacements are performed each year in Australia. Routine, regular long term follow up of all these patients is costly and burdensome to patients, surgeons, and healthcare providers alike, and reduces resources available to treat other patients[2,10].

Evidence

Most revisions are now performed for urgent symptomatic conditions such as peri-prosthetic fractures, painful loosening, dislocation and infection[3]. These patients present to their GPs with pain, or with more urgent matters to the ED and are rarely picked up at routine review[5].

There is no good data demonstrating the benefits of long term follow up of asymptomatic patients[8]. Studies from centres where regular follow up has been provided, have not identified asymptomatic patients being offered revision and asymptomatic lysis picked up at routine follow up is now extremely rare[5,7]. Previous studies have also shown an extremely low rate of revision for asymptomatic patients[6].

Risk Stratification

Some patients may be considered at higher risk of requiring revision, these would include

Young patients (less than 60yo)[11]
Active patients (patients engaging in sport, manual work etc)[12]
Heavy patients (more than 100kg)[13]
Metal on metal articulations[14]
Modular neck devices[15]
New implant designs yet to establish a proven track record
Revision implants and those with lysis or previous infection[2,3]
Implants known to be associated with higher incidence of problems

However, there is no evidence that these patients can be identified by regular review before they develop symptoms.

Recommendations

1. It is important that symptomatic patients have easy access to review by an orthopaedic surgeon or similar with radiological assessment. Establishing referral pathways from GPs and ED to improve this process reflects good practice. All surgeons should be willing to review symptomatic replacements performed by colleagues who have ceased practice.

2. As more recent work has emerged[5,7], confirming previous work in this area[6] we now feel that regular routine follow up of asymptomatic patients with clinically proven prostheses on the Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR), is unlikely to be beneficial.

3. Surgeons may elect to follow up their patients long term for various reasons but it is important they review the results from this practice and consider whether it is worthwhile.

4. Patients with potentially higher risk of revision should be followed at the discretion of the treating surgeon. Although it is recognised that patient compliance with this directive can be low[16,17], especially when asymptomatic, appropriate timing of this would be at 1-2 years, 7-10 years and every 3–5 years afterwards. This would include patients with older style non-crossed linked poly in hip replacements.

5. Newer prostheses with limited long-term clinical results, particularly in younger patients, require regular review. This particularly applies to metal-on-metal articulation in a conventional stemmed total hip replacement with a head size of 36mm or greater. These should be reviewed annually with symptom review, plain radiology and soft tissue imaging.

(This is in line with current recommendations from regulatory bodies, MHRA (Britain), FDA (USA) and our own TGA)[18-20]. Blood tests for metal ion tests should also be considered.

When follow up is required, this need not be face-to-face with the surgeon but can be done remotely with questionnaires and X-rays and may be co-ordinated by nurses, physiotherapists or administrative assistants trained specifically for this purpose[8,21,22]. Each follow up must include a radiological assessment which is interpreted by an Orthopaedic Surgeon or an experienced Musculo-Skeletal Radiologist familiar with the failure patterns of the various prostheses[8].

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