ORTHOPAEDICS WA

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REVISION KNEE REPLACEMENT

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BACKGROUND

Revision surgery of the knee (redo surgery) is becoming a more frequent problem as the number of patients with joint replacements continues to rise. Surgery is often more complex, takes longer, has more complications and requires larger wounds, and specialist equipment and facilities. The assessment and surgery for these conditions can be extremely demanding and should be performed by surgeons specifically trained to do this work. In experienced hands, results after revision surgery have continued to improve due to better understanding of the problems, better implants, and better equipment. However, outcomes are unlikely to be as good as normal knee replacements. There is no absolute limit to the number of times a knee can be revised, and what usually stops us is tissue loss, persistent infection, or poor health of the patient. Patient recovery takes longer, and often requires expert rehabilitation. Residual stiffness, pain and swelling is common after revision knee surgery.

CAUSES OF REVISION

Implants fail for many reasons, some of which are predictable. Ideally joint replacements should be followed up with X-rays and examinations every 5 years in order to pick up potential problems before they become more complex. Failing implants usually become painful, although some may present with instability of the joint, stiffness and infection. There is a spectrum of complexity and these are listed below.

1. Loosening and wear

The majority of knee replacements that fail do so due to wear of the moving parts, which may be associated with bone loss and loosening of the components. These will usually become painful, but may result in fractures of the bone or instability of the joint.

2. Infection

This occurs in about 2% of all primary knee replacements. It can present with pain, swelling, stiffness, drainage of the wound, or may present many years down the line with painful loosening of the implants. Occasionally infection can come from a distant site such as dental surgery, chest infection, or urinary infection. Patients can become very unwell, requiring emergency surgery, but usually the onset of symptoms is slow. Successful treatment usually requires eradication of the infection before a new knee can be considered. This means an initial operation to remove the infected implants, followed by a period of powerful antibiotic

treatment, usually with a temporary knee in place. If the infection is successfully cleared, then a second operation can be carried out to implant a new knee replacement. The treatment of infected joints is complex and requires expert management from both the surgeon and the infectious diseases physicians. Reconstruction is often difficult due to the destruction caused by the infection. In our hands, the chance of successful eradication of infection in knees is more than 85%.

3. Instability

Patients can feel as if their knee replacement is going to give way, so that walking is difficult, or getting up from chairs or coming down stairs is problematic. Swelling may be a big problem. Causes include poor component positioning, muscle weakness, implant wear and loosening.

Careful assessment of the cause of the instability needs to take place before revision surgery is contemplated, otherwise recurrence of the problem is all too common.

4. Fracture

Fractures around joint replacements are the fastest growing cause of revision in Australia. It most commonly occurs in elderly patients with osteoporosis (thin bones), after a minor fall. Again, surgery can be difficult, and complications have traditionally been very high. Surgeons familiar with both trauma and joint replacement are the best to deal with these, as they require both skill sets. Some patients will need full revision of the implants, and others can be fixed.

5. Component malposition

If the implants are not quite in the correct place, this can lead to stiffness, instability, excessive wear or pain. Revision is often needed for this condition and must address the cause fully. This is a commonly under-recognised condition that we have particular interest and experience in.

REVISION IMPLANTS

Specialist implants are often required to deal with bone loss, instability and tissue loss. Orthopaedics WA have helped develop some of these systems.

COMPLICATIONS OF REVISION SURGERY

These are essentially the same as for primary knee replacement, but more common.

- **INFECTION 5%**
- **BLEEDING**
  Transfusion is much more likely depending on the complexity of the surgery. About 5% of patients will require a blood transfusion.
- **BLOOD CLOTS IN THE LEG OR LUNG 1% (CLINICALLY SIGNIFICANT)**
- **ANAESTHETIC COMPLICATIONS <5%**
  Depends on the extent of the surgery and the health of the patient.
- **DEATH 1-2%**
  Risk to life is much higher with this kind of surgery than with primary joint replacement.
- **LOOSENING AND WEAR**
  These implants wear at least as fast as primary implants, and loosening is more common. Hence each revision is likely to last a shorter time than the implant that preceded it.
- **FRACTURES**
  Fractures are much more common, usually during removal of the old implants. Experienced revision surgeons should be able to anticipate and deal with these.
- **BLOOD VESSEL INJURIES <1 IN 100**
- **NERVE INJURIES <1 IN 100**

SURGERY AND RECOVERY

Most operations are carried out under a spinal anaesthetic, which is very safe, and minimizes complications such as nausea, vomiting, blood loss and thrombosis. We would normally mobilise our patients within a few hours of surgery. You may be required to use walking aids for several weeks. Hospital stay depends on the complexity of the surgery, but is still likely to be 5 days or less. Wound healing can be slower. Driving is not advised for 4-6 weeks (discuss with your surgeon). Precautions with activity and movements will be taught by the physiotherapists before your leave hospital.