

## **Total Knee Replacement**

### **Introduction**

Total Knee Replacement is a surgery involving replacing your existing diseased cartilage and bone in the knee joint by a prosthesis composed of metal and plastic. There are usually three components: femoral prosthesis, tibial prosthesis and patellar prosthesis.

The knee joint can be divided into two parts: femoral-tibial articulation and femoral-patellar articulation. Depending on the severity of disease in your knee, the femoral-tibial articulation, with or without the femoral-patellar articulation, will be replaced by the prosthesis.

### **Indication**

- End stage arthritis of the knee joint
  - Usually due to osteoarthritis, rheumatoid arthritis
  - Sometimes gouty arthritis, osteonecrosis, ankylosing spondylitis, haemophilia, Charcot joint, etc.
- Occasionally for tumor, fracture, etc.
- The most common symptoms in end-stage arthritis are pain, deformity and stiffness. Occasionally, patients may complain of instability of the joint.
- After surgery, pain is usually much reduced. Original deformity and stiffness are usually improved. However, the range of motion is usually not as good as a normal knee. If the knee range was already very good before the surgery, it is difficult to further improve the range of motion.

### **The Procedure**

- You have to undergo general anaesthesia or regional anaesthesia (e.g. epidural anaesthesia, spinal anaesthesia, etc). Your anaesthetist will discuss with you about the anaesthetic procedure in details.
- You need antibiotic prophylaxis for the operation. Please inform your doctor or nurse if you have drug allergy history.
- A tourniquet may be put around the thigh region of the limb. It will be inflated during the procedure to decrease the blood flow to the leg.
- Incision is made in the anterior aspect of the knee joint.
- Diseased cartilage and bone are then removed. The femoral prosthesis and tibia prosthesis are usually fixed to the bone by cement or other mechanical means. If your patella needs to be replaced, your surgeon will implant the patella prosthesis.
- At the end of the procedure, drain(s) may be inserted for drainage of haematoma.
- Before going back to a general ward, you may be kept in the recovery room of the operation theatre for observation.

## **Risk and Complication**

### ***General Complications***

Like other surgical procedures, there are associated risks and complications with total knee replacement surgery, for example, those associated with anaesthesia, wound complications, pneumonia, stroke, heart attack, etc.

### ***Specific Complications***

Total Knee Replacement is a safe and well accepted surgical procedure internationally. However, similar to other surgical procedures, there are still chances to encounter potential undesirable effects and complications.

- In the occurrence of serious complications: Revision Surgery (Longevity - Mechanical wear is expected. Loosening of prosthesis. May need revision surgery later)
- Infection (Deep seated infection and may need revision surgery)
- Dislocation
- Nerve Palsy (Major nerve - sciatic nerve / femoral nerve)
- Bleeding
- Vascular Injury (May result loss of a limb)
- Fracture (can occur in intra-operative and post-operative period)
- Problem in wound healing (Persistent discharge from wound, wound edge necrosis, wound dehiscence, which may require further surgery)
- Deep Vein Thrombosis
- Pulmonary Embolism
- Extension mechanism complication (patella instability, patella fracture, patellar tendon rupture and patella clunk)
- Stiffness
- Bone cement complications

### **Before the Procedure**

- Treat and optimize existing disease conditions, e.g. ischemic heart disease, hypertension, diabetes mellitus, anemia, lung disease
- Fasting few hours before the procedure

### **After the Procedure**

- You will be allowed to eat and drink when your condition is stable.
- You need to start mobilization exercise of the ankle. This will help the circulation of blood inside your calf and decrease the chance of deep vein thrombosis.
- Physiotherapy will be started later to maintain the range of motion gained during the operation. These include achievement of full extension, maximal flexion and regaining the strength of quadriceps. After a few days, therapists will start to train you to walk.
- The stitches / staples will be removed after the wound heals.

### **Possible Additional Procedures**

- **Transfusion**  
Bleeding is inevitable in total knee replacement. Blood transfusion may be required.
- **Additional Procedure for Fixation of Fracture**  
The chance of intra-operative fracture is low. However, if fracture is encountered, your surgeon may need to stabilize the fracture by extending the wound and fixing the fracture with additional metal implants.
- **Additional Vascular Procedure**  
Despite the chance of major vessel injury in total knee replacement is remote, the consequence of such injury can be devastating and may lead to potential loss of the limb. If such injury occurs, vascular surgery will be needed.

### **Alternative Treatment**

Your surgeons will consider total joint replacement for you only if the symptoms cannot be controlled after exhausting other means of conservative treatments, including analgesics, physiotherapy and activities modification. On the other hand, total knee replacement is not a life saving surgery. One can always select to adopt conservative treatments, despite the presence of significant symptoms in terms of pain, stiffness and deformity.

### **Follow Up**

- You should keep your wound clean and dry
- You must follow instructions strictly on taking medication, see the doctor as scheduled
- If you have any excessive bleeding, collapse, severe pain, fever or signs of wound infection such as redness, swelling or large amounts of stinking discharge, see your doctor immediately or attend the nearby Accident and Emergency Department

### **Remarks**

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. The actual risks may be different for different patients. During the operation, unpredictable condition may arise, and additional procedures may be performed if necessary. For further information, please contact your doctor.