



Orthopaedic News and Updates

Minimal Invasive Knee Replacement

The natural knee consists of three inter-connected compartments – the medial, lateral and patello-femoral (knee cap) compartments. Arthritis may affect one, two or all three compartments of the knee. The total knee replacement is today a highly reliable and effective operation for arthritis of the knee which involves two or three compartments of the knee joint. In this operation two or three compartments are resurfaced. The modern total knee replacement (TKA) is capable of lasting more than 20 years. However, many patients suffer arthritis that is restricted to one compartment – either the medial or lateral compartments. These patients do not require the full scale replacement operation. They can obtain very effective pain relief and return of good knee function by an operation that resurfaces only the diseased compartment. The partial replacement of the knee joint is known as a Unicompartmental Knee Replacement (UCR). This form of surgery has been available for almost as long as total knee surgery had been performed. The early varieties of UCR were associated with variable outcome. Many patients obtained excellent results, but up to one in four patients who received a UCR in the seventies and eighties required a revision operation within 10 years. Today, we have a better idea about patient selection for the operation, and there are better designs and better materials for the UCR. The modern UCR is capable of 85% survivorship after 10 years of implantation.

“The MIUCR offers effective pain relief and excellent function without the need for major surgery, long hospital stay and prolonged rehabilitation”.

The standard method of performing a UCR requires a full exposure of the knee joint, as such the operation is only slightly less major than a TKR. A newer method of performing a UCR is now possible.

The Minimal Invasive Technique for UCR represents a major technical advancement in the art of joint replacement surgery. For the first time, surgeons are able to offer their patients a method of replacing the knee joint without the need for prolonged hospital stay, blood transfusion or a prolonged rehabilitation. The operation is performed through a relatively small incision and blood loss is usually under 60 mls. Because of the operation is of a much smaller scale than a TKR, surgeons and patients are more comfortable with simultaneous surgery to both knees if the need arises. The average patient remains in hospital for 1 – 2 days and is able to walk the same day. It takes 3 – 4 weeks for most patients to achieve full recovery. The surgery however demands more technical expertise to perform and the choice of prosthesis is an important factor for the

success of the operation. A dedicated rehabilitation programme is necessary to achieve the best outcome.

PREPARATION FOR THE OPERATION

Your surgeon will discuss the condition of your knee and the options available to treat the condition. He will make recommendations about the treatment that is best suited to you. You will however make the final decision as to whether you wish to proceed with the treatment. It is important that you inform your surgeon of any mental or physical illnesses, previous difficulties with anaesthesia, and allergies you suffer. You may be asked to consult with a Specialist Physician to obtain a medical check-up to optimize your readiness for the operation. There are a number of blood tests and x-rays to be carried out before the operation. An appointment will be made for you to meet with the Case Manager and the Physiotherapist at our special Joint Replacement Clinic. At this clinic you will be given further information about your hospitalization, the operation, the rehabilitation programme and the discharge and follow-up arrangements. You are encouraged to ask any question you wish at this clinic. You will have an opportunity to see videos of the operation (if you wish) and of the physical therapy programme. Your Case Manager will assist your surgeon to provide you with the necessary care.

THE OPERATION

The operation is performed through a 3 – 4 inch incision over the front of the knee. The knee joint is opened through a small window. The surfaces of the diseased ends of the thigh (femur) and shin (tibial) bones are prepared to accept the prostheses. The femoral component is made of metal. The tibial component is usually made of a combination of metal and plastic. In some designs the plastic is fixed to the metal tibia plate (Fixed Bearing) and in others the plastic sits on a metal tibial tray and is not fixed (Mobile Bearing). If you have questions about the choice of the prosthesis you should speak to your surgeon. The operation takes about one hour but you are likely to be in the operating theatre for two hours. You are brought to the recovery area till you have fully recovered from the anaesthetic, after which you return to your hospital bed. You will have a drip for medication and fluid supplements to be given.

AFTER CARE

Day 1 The foot of your bed is kept elevated and a cold compress is applied to your knee to reduce swelling and blood loss. You are encouraged to commence leg lifting exercises and you are allowed to get up from your bed if you feel sufficiently comfortable and steady. You will of course require the assistance of a nurse to stand up.

Day 2. Knee bending exercises begin on this day and you are encouraged to take short walks as often as you wish. You should do your calf exercises as often as possible (at least 6 times a day). If you have help to look after you at home you may go home today. You will be given a prescription of pain tablets to go home with. The exercises you were taught in the hospital must be continued at home. You are required to make appointments for:-

- Visits to the Physiotherapist.
- A review with your surgeon within 10 – 14 days after discharge.
- For a visit to your home (or contact by telephone) by the Case Manager.
- Duplex Doppler

You may discard crutches and use walking sticks at any time you feel sufficiently confident and comfortable on your feet.

WEEKS 3 AND 4

You are encouraged to visit the local pool of a Hydrotherapy facility to help mobilise your knee. When you have obtained more than 90 degrees of knee flexion and can bend and straighten your knee without significant discomfort, you may drive short distances. You will be asked to see your surgeon sometime between the 4 – 6 weeks depending on the rate of progress. X-rays are usually requested for this visit.

FURTHER REVIEWS

Visits to your surgeon are generally required 3 months, 6 months and 12 months after the surgery. After the initial period you are asked to come for reviews once a year and at these visits x-rays of the knee are required. You are advised to contact your surgeon, the Case Manager or the Hospital in event of:-

- Pain and Swelling of the calf.
- Inflammation or discharge of the wound (it is not wise to manage this simply with antibiotics).
- Fevers
- Unusual pains.

EXPECTED OUTCOME

There is quite considerable variation with the pace at which patients “recover fully”. This relates to differences in age, physical fitness and a number of other factors. Most patients are quite comfortable and independently mobile 4 weeks after surgery. Some measure of soft tissue irritability may persist for several weeks more and there may be some swelling of the leg and knee. Your new knee will serve you well for general, non-impact activities. You should avoid high impact activities. You are advised against impact activities such as jumping and running. You may participate in sports such as swimming, cycling, golf and bowls.

The prosthesis may loosen after many years of use. Most UCR are expected to last beyond 10 years. If the replacement fails the operation of conversion to a Total Knee Replacement is usually effect.

COMPLICATIONS

All operations associated with complications and the MIUCR is no exception. Some of the risks associated with the operation are listed below (others that may be specific to your case will be discussed with you by your surgeon).

1. Anaesthetic related complications.
2. Allergic reactions to medications and material used before, during and after the operation.
3. Blood loss/haemorrhage.
4. Infection
5. Fractures
6. Mal-alignment of limb and components.
7. Loosened and unstable components, dislocations and subluxation.

8. Sympathetic dystrophy.
9. Painful, thickened or unsightly scar.
10. Joint stiffness.
11. Residual or incomplete pain relief.
12. Clots (thromboembolic disease).
13. Strokes
14. Myocardial Infarction.
15. Bed Sores.
16. Chest complications, e.g. Pneumonia.
17. Urinary complications – retention, infection.
18. Renal failure.
19. Thrombophlebitis.
20. Wound breakdown.

This is not a comprehensive list of all possible complications. If you do not understand the information you should discuss your queries with your surgeon.