Ortho Rhode Island

Knee Topics

Introduction

When your knee pain has consistently not responded to conservative treatment either by cortisone injections or physical therapy, it may be time for you to consider a total knee replacement or partial knee resurfacing. The following topics will help you to understand the cause of this knee pain and how we can best help you to get back to a normal active lifestyle.

Arthritis

Osteoarthritis is one of the most common forms of arthritis and is often the source for a patient's knee pain. The joint space, or cartilage, becomes worn out leading the bone surfaces to rub and grind against each other causing pain. Most often it is referred to as being bone on bone or a grinding sensation. The exact cause of osteoarthritis is unknown, but there are many factors that can cause this pain. Childhood diseases, growth abnormalities, age, obesity and injury or overuse are just a few common factors that affect the wear and tear of your joint space. Previous knee arthroscopy, or repair of damaged cartilage (meniscus), can also contribute to an increase in osteoarthritis and a bone-on-bone grinding sensation.

Indications of Arthritis in a knee

Cartilage breaks down in that joint space between the femur, patella (knee cap) and tibia (shin bone). This break down can expose the femur, tibia and patella bone leading to a grinding bone-on-bone sensation. The joint space, where the cartilage lies, will become irregular and narrow in size and thickness when that cartilage has broken down. Bone spurs, which is excessive bone, can build up around the joint causing pain as well. Both a narrowing joint space and bone spurs can be diagnosed through an x-ray.

Diagnosis of Arthritis

Osteoarthritis is diagnosed based on history, physical examination and an x-ray. At times there may be a need for more specific testing such as a MRI or a CT scan to determine the possible cause of your pain and subsequent osteoarthritis.

How to know when it is time to consider a Total Knee Replacement or Partial Knee Resurfacing:

Though your doctor ultimately diagnoses when it is time for surgery, there are many personal considerations that you can take into account when deciding on surgery:

- Your doctor has diagnosed you with arthritis through your x-ray
- Conservative treatment such as over the counter NSAIDs/ acetaminophen, cortisone injections and gentle exercises has not given any long lasting consistent relief
- Pain and stiffness in the knee has prevented you from fully taking part in your daily activities. You often find limitations with simple activities such as walking, sitting, standing, or getting in and out of a chair.
- Swelling around the knee and a crunching sensation during use of the knee

What is Total Knee Replacement?

When osteoarthritis has spread to more than 2 compartments of the knee, it may be more beneficial for you to consider a Total Knee Replacement. In this procedure, the full knee including the distal femur, the underside of the patella and top of tibia are replaced with metal components. In between the femoral metal component and the tibia metal component is a polyethylene insert, which acts as the cartilage. The implants are inserted by a navigation system or with specific cutting guides.

Pre-Operation

- Your surgeon will send you for routine blood tests and any other investigations required prior to your surgery
- You will be asked to see your primary care physician for a routine medical exam.
- You should have any other medical, surgical or dental problems attended to prior to your surgery.
- Cease aspirin or anti-inflammatory medications 7 days prior to surgery as they can cause bleeding.
- Cease any naturopathic or herbal medications 7 days before surgery.
- Stop smoking as long as possible prior to surgery.

Day of your surgery

- You will be admitted to the hospital, usually on the day of your surgery.
- Further tests may be required on admission.
- You will meet the nurses and answer some questions for the hospital records.
- You will meet your Anesthetist, who will ask you a few questions.
- The operation site will be shaved and cleaned.
- Approximately 30 minutes prior to surgery, you will be transferred to the operating room.

Surgical Procedure

- Each knee is individual and knee replacements take this into account by having different sizes for your knee. If there is more than the usual amount of bone loss, sometimes extra pieces of metal or bone are added.
- Surgery is performed under sterile conditions in the operating room under spinal or general anesthesia. You will be on your back and a tourniquet applied to your upper thigh to reduce blood loss. Surgery takes approximately two hours.
- The surgeon cuts down to the bone to expose the bones of the knee joint.
- The damaged portions of the femur and tibia are then cut at the appropriate angles using specialized jigs. Trial components are then inserted to check the accuracy of these cuts and determine the thickness of plastic required to place in between these two components. The patella (knee cap) may be replaced depending on a number of factors and depending on the surgeon's choice.
- The real components are then inserted with or without cement and the knee is again checked to make sure things are working properly. The knee is then carefully closed and drains usually inserted, and the knee dressed and bandaged.

Post-Operative Recovery

- When you wake, you will be in the recovery room with intravenous drips in your arm, a tube (catheter) in your bladder and a number of other monitors to check your vital observations. You will usually have a button to press for pain medication through a machine called a PCA machine (Patient Controlled Analgesia).
- Once stable, you will be taken to the orthopedic floor. The post-op protocol is surgeon dependent, but in general your drain will come out at 24 hours and you will sit out of bed and start moving you knee and walking on it within a day or two of surgery. The dressing will be reduced usually on the 2nd post op day to make movement easier. Your rehabilitation and mobilization will be supervised by a physical therapist.
- To avoid lung congestion, it is important to breathe deeply and cough up any phlegm you may have.
- Your Orthopedic Surgeon will use one or more measures to minimize blood clots in your legs, such as inflatable leg coverings, stockings and injections into your abdomen to thin the blood clots or DVT's, which will be discussed in detail in the complications section.
- A lot of the long term results of knee replacements depend on how much work you put into it following your operation.
- Usually, you will remain in the hospital for 2.5 days. Then, depending on your needs, either return home or proceed to a rehabilitation facility. You will need physical therapy on your knee following surgery.
- You will be discharged on a walker or crutches and usually progress to a cane at six weeks.
- Your sutures are sometimes dissolvable but if not, are removed at approximately 10 days.
- Bending your knee is variable, but by 6 weeks should bend to 90 degrees. The goal is to obtain 110-115 degrees of movement.
- Once the wound is healed, you may shower. You can drive at about 6 weeks, once you have regained control of your leg. You should be walking reasonably comfortably by 6 weeks.
- More physical activities, such as sports previously discussed, may take 3 months to do comfortably.
- You will usually have a 6 week check up with your surgeon who will assess your progress. You should continue to see your surgeon for the rest of your life to check your knee and take X-rays. This is important as sometimes your knee can feel excellent but there can be a problem only recognized on X-ray.
- If you are having any procedures such as dental work or any other surgery you should take antibiotics before and after to prevent infection in your new prosthesis. Consult your surgeon for details
- If you ever have any unexplained pain, swelling or redness or if you feel generally poor, you should see your doctor as soon as possible.

Risks and Complications

As with any major surgery, there are potential risks involved. The decision to proceed with the surgery is made because the advantages of surgery outweigh the potential disadvantages.

It is important that you are informed of these risks before the surgery takes place.

Complications can be medical (general) or local complications specific to the Knee.
Medical complications include those of the anesthetic and your general well being. Almost any medical condition can occur so this list is not complete. Complications include:

- Allergic reactions to medications
- Blood loss requiring transfusion with its low risk of disease transmission
- Heart attacks, strokes, kidney failure, pneumonia, bladder infections
- Complications from nerve blocks such as infection or nerve damage
- Serious medical problems can lead to ongoing health concerns, prolonged hospitalization or rarely death

Local Complications

Infection

Infection can occur with any operation. In the knee this can be superficial or deep. Infection rates vary. If it occurs, it can be treated with antibiotics but may require further surgery. Very rarely your new knee may need to be removed to eradicate infection.

Blood Clots (Deep Venous Thrombosis)

These can form in the calf muscles and can travel to the lung (Pulmonary embolism). These can occasionally be serious and even life threatening. If you get calf pain or shortness of breath at any stage, you should notify your doctor.

Stiffness in the Knee

Ideally your knee should bend beyond 100 degrees but on occasion, the knee may not bend as well as expected. Sometimes manipulations are required. This means going to the operating room where the knee is bent for you and under anesthetic.

Wear

The plastic liner eventually wears out over time, usually 10 to 15 years and may need to be changed.

Wound Irritation or Breakdown

The operation will always cut some skin nerves, so you will inevitably have some numbness around the wound. This does not affect the function of your joint. You can also get some aching around the scar. Vitamin E cream and massaging can help reduce this.

Occasionally, you can get reactions to the sutures or a wound breakdown that may require antibiotics or rarely, further surgery.

Cosmetic Appearance

The knee may look different than it was because it is put into the correct alignment to allow proper function.

Leg length inequality

This is also due to the fact that a corrected knee is more straight and is unavoidable.

Dislocation

An extremely rare condition where the ends of the knee joint lose contact with each other or the plastic insert can lose contact with the tibia (shinbone) or the femur (thigh bone).

Patella problems

Patella (knee cap) can dislocate. This means it moves out of place and it can break or loosen.

Ligament injuries

There are a number of ligaments surrounding the knee. These ligaments can be torn during surgery or break or stretch out any time afterwards. Surgery may be required to correct this problem.

Damage to Nerves and Blood Vessels

Rarely these can be damaged at the time of surgery. If recognized they are repaired, but a second operation may be required. Nerve damage can cause a loss of feeling or movement below the knee and can be permanent.

Fractures or breaks in the bone can occur during surgery or afterwards if you fall. To repair these, you may require surgery.

Discuss your concerns thoroughly with your Orthopedic Surgeon prior to surgery.

What is Partial Knee Resurfacing?

Please refer to our MAKOplasty Partial Knee Resurfacing page to learn about this unique option.

What is Knee Arthroscopy?

The source of your pain could be from a cartilage tear. Often from a twisting injury or sports injury, the cartilage within the joint space called meniscus will tear causing the knee to be painful with motion and to swell. Through an x-ray and MRI, your doctor can see the tear and diagnose if surgery will be necessary. When arthroscopic surgery becomes necessary, your doctor with the help of a fiber optic camera will make 2 or 3 small incisions in the knee. During this procedure, he will trim the torn cartilage, repair any torn ligaments, or remove loose bodies. This surgery is a same day procedure allowing you to be home recovering that evening.

Preparing for Surgery

After a consultation with your doctor or physician assistant, we will help you get ready for the days before and after surgery. Please refer to the following links to assist you in preparing for your unique surgery.

Patient Information

Please stop taking Aspirin and Anti-inflammatory medications 5 days prior to your surgery. You can continue taking all your other routine medication. If you smoke you are advised to stop a few days prior to your surgery.

This procedure is considered a same day outpatient surgery.

The limb undergoing the procedure will be marked and identified prior to the anesthetic being administered.

Once you are under anesthetic, the knee is prepared in a sterile fashion. A tourniquet is placed around the thigh to allow a 'blood – free' procedure.

The Arthroscope is introduced through a small (size of a pen) incision on the outer side of the knee. A second incision on the inner side of the knee is made to introduce the instruments that allow examination of the joint and treatment of the problem.

Post-operative Recovery

- You will wake up in the recovery room and then be transferred back to the ward
- A bandage will be around the operated knee.
- Once you are recovered your IV will be removed and you will be shown a number of exercises to do.
- Your Surgeon will see you prior to discharge and explain the findings of the operation and what was done during surgery.
- Pain medication will be provided and should be taken as directed
- You can remove the bandage in 24 hours and place waterproof dressings (provided) over the wounds.
- It is NORMAL for the knee to swell after the surgery. Elevating the leg when you are seated and placing ice packs on the knee will help to reduce swelling. (Ice packs on for 20 min 3-4 times a day until swelling has reduced)
- You are able to drive and return to work when comfortable unless otherwise instructed.
- You will have a post operative appointment 8-14 days after surgery to monitor your progress and remove the 2 stitches in your knee.

Risks of Arthroscopy

Risks to Arthroscopic Knee Surgery Include:

Postoperative bleeding

Deep Vein Thrombosis

Infection

Stiffness

Numbness to part of the skin near the incisions

Injury to vessels, nerves and a chronic pain syndrome

Progression of the disease process

The risks and complications of arthroscopic knee surgery are extremely small. One must however bear in mind that occasionally there is more damage in the knee than was initially thought and that this may affect the recovery time. In addition if the cartilage in the knee is partly worn out then arthroscopic surgery has about a 65% chance of improving symptoms in the short to medium term but more definitive surgery may be required in the future. In general arthroscopic surgery does not improve knees that have well established Osteoarthritis.