

## Anaesthesia for Total Knee Replacement

Anaesthesia is about safety and comfort whilst surgery is performed. Australia is one of the safest places in the world to have an anaesthetic and your anaesthetist is a highly trained medical specialist with years of expertise in anaesthesia, emergency medicine, pain management and intensive care.

### The preoperative consultation:

Knee replacement surgery is considered major surgery. The role of the anaesthetist is a very important one and there are many issues that need to be discussed. They will usually visit you in hospital before the surgery and you will have the opportunity to discuss the anaesthetic and your pain management.

Important questions that the anaesthetist will ask:

- Have you or a family member had any problems with anaesthesia?
- How is your health? - Particularly your heart, lungs, blood clotting problems.
- Are you on any medication? – particularly heart or blood pressure medication, or aspirin (aspirin should be discontinued at least 10 days before surgery)
- Do you smoke? Smoking increases your risk for an anaesthetic and you should try to stop smoking 6 weeks before surgery as this will improve your lung function. If you cannot do this, at least DO NOT smoke on the day of surgery.

### What is anaesthesia?

Anaesthesia is the practice of medicine dedicated to suppressing consciousness and alleviating pain. The role of the anaesthetist is as a perioperative (meaning “all-round”) physician, providing medical care throughout your surgical experience.

There are three broad categories of anaesthesia – general, regional or local which can be used alone or in combination.

**Local anaesthesia** is used for minor surgery, such as when the dentist fixes your teeth.

**General anaesthesia** is where you go completely to sleep, and is usually administered by an injection or by a mask. General anaesthesia is now considered very safe for the majority of people. The anaesthetist monitors you throughout the surgery to make sure you are safe, asleep and comfortable.

**Regional anaesthesia** focuses on numbing a specific area of the body. The main types of regional anaesthesia used knee hip replacement surgery are spinal, epidural or a combination of the two, or a peripheral nerve block.

In a spinal block, a very fine needle is inserted into the lumbar spine area, and local anaesthetic is injected into the spinal fluid. This produces nearly immediate numbing of the lower half of the body which can last a variable amount of time depending on the drug used. Morphine can also be injected which will provide longer lasting pain relief. It is a very safe procedure for the majority of patients but can have some side effects such as headache, lowering of blood pressure, itch

and nausea. Very uncommon complications include nerve damage (which will usually only be temporary), a spinal haematoma, infection or worst case scenario, paraplegia.

An epidural block is similar to a spinal block but the space for the local anaesthetic is closer to the skin and a small catheter is left in the back. Usually, local anaesthetic will be infused continually after the operation and will numb the nerves to the knee.

The other technique is to block the main nerves that go to the knee, namely the **femoral** nerve (in the groin) and the **sciatic** nerve (in the buttock). This involves locating these nerves, usually with a needle connected to weak electric current which makes your leg “jump” around a little but does not hurt, and then local anaesthetic is put down the needle to numb the nerve.

Sometimes a catheter will be left in to allow local anaesthetic to be infused continually after the operation.

Each of the above techniques has their place and the choice (if any) should be based on a discussion you have with your anaesthetist to find the one which is best for you.

There are several advantages to using a regional technique during knee replacement surgery. Studies have shown that there is less blood loss, fewer complications with blood clots on the legs and lungs, better pain relief, earlier mobilisation and hence quicker recovery.

#### **During the operation:**

Whilst you are asleep or having your surgery the anaesthetist not only makes sure you are asleep and comfortable, but looks after your fluid replacement, temperature, kidney function, body position and lungs and heart function.

#### **Pain Relief after Surgery**

The goals of postoperative pain management are to make you as comfortable as possible whilst still allowing you to do the required physical therapy. If a general/spinal anaesthetic was used, you will probably have pain relief delivered to you by the intravenous route via a machine called a PCA (patient controlled analgesia) where you can push a button and the machine will give you a dose of morphine into the intravenous drip.

If you had an epidural, you will have an infusion of local anaesthetic through the catheter in your back.

If you had some nerve blocks you may have a catheter in your groin giving you an infusion of local anaesthetic, plus you will have the PCA, in case you need some extra pain medication.

These will probably be in use of the first 2 days and then as the pain lessens and you become more mobile, you will receive your strong pain medication by tablets.

#### **Blood Transfusion**

Knee replacement surgery involves moderate blood loss and you may require a blood transfusion. The decision to give you a transfusion is based on a number of factors including your preoperative haemoglobin, medical problems and of course, how much blood you lose during and after the operation. Blood transfusions are very safe these days and all the blood is tested. You may be given the opportunity to donate blood prior to the surgery to be used during and after the operation, but this decision will be up to the surgeon and your physicians, as not everyone is suitable.