Musgrove Park Hospital

OS12
Femoral Shaft Fracture Surgery (Femoral Nailing)

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Musgrove Park Hospital
Taunton
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What is a femoral shaft fracture?
A femoral shaft fracture is a break of the femur (thighbone). Femoral nailing is an operation to fix a broken femur using a metal rod. The metal rod is called a femoral nail (also called an intramedullary or interlocking nail) (see figure 1).

![Femur, Fracture, Femoral nail, Locking screw]

What are the benefits of surgery?
The main benefits of surgery are that you will only need a short stay in hospital and you will be able to use your leg sooner. Surgery will also make sure your bone heals in a good position.

Are there any alternatives to femoral nailing?
A femoral shaft fracture can be treated in traction (using a heavy weight fixed to the leg to pull the bones into position until they heal). However, some fractures are difficult to hold in a good position without surgery. If you have an open fracture, you will almost certainly need an operation. Your surgeon can sometimes fix your femoral shaft fracture with an external fixator or a plate and screws instead of a femoral nail. They will explain why they recommend femoral nailing for your fracture.

What will happen if I decide not to have the operation?
You will have your leg in traction. You may need to stay in hospital for a long time. This can lead to complications such as blood clots, chest infection and pressure sores. After a number of weeks, your leg may be put into a large plaster cast (called a hip spica) or a brace. The fracture will take about three to six months to heal. You will need physiotherapy to learn to walk again because your muscles will have become weak after spending such a long time in bed.

What does the operation involve?
The healthcare team will carry out a number of checks to make sure you have the operation you came in for and on the correct side. You can help by confirming to your surgeon and the healthcare team your name and the operation you are having.

How does a femoral shaft fracture happen?
Road accidents and sport are the cause of most femoral shaft fractures. You can lose up to a litre (about two pints) of blood into the thigh muscle at the time of the injury. Sometimes the injury causes the bone to break through the skin. This is known as an open or compound fracture.
A variety of anaesthetic techniques is possible. Your anaesthetist will discuss the options with you and recommend the best form of anaesthesia for you. You may also have injections of local anaesthetic to help with the pain after surgery. You may be given antibiotics during the operation to reduce the risk of infection. The operation usually takes between an hour and an hour and a half.

Your surgeon will push the femoral nail down the inside of the bone, either through a cut on the side of the hip or on the front of the knee. The nail goes across the break and holds it in position. The nail is held in the bone by locking screws that pass through holes in the nail (see figure 1).

If you have an open fracture, your surgeon will clean the skin wound thoroughly during the operation to reduce the risk of infection. If the skin is badly damaged, you may also need one or more plastic surgery operations.

At the end of the operation, your surgeon will close the skin with stitches or clips.

**What should I do about my medication?**

You should let your doctor know about all the medication you are on and follow their advice. This includes herbal remedies and medication to control diabetes and blood pressure. If you are on beta-blockers, you should continue to take them as normal. You may need to stop taking warfarin or clopidogrel before your operation. Anti-inflammatory painkillers may stop the fracture healing properly, so it is better not to take these if possible.

**What can I do to help make the operation a success?**

If you smoke, stopping smoking may reduce your chances of getting complications and will improve your long-term health. Nicotine is known to stop fractures from healing. Regular exercise should help you recover and improve your long-term health. Before you start exercising, ask a member of the healthcare team or your GP for advice.

You can reduce your risk of infection in a surgical wound by keeping warm around the time of your operation. Let a member of the healthcare team know if you are cold.

**What complications can happen?**

The healthcare team will try to make your operation as safe as possible. However, complications can happen. Some of these can be serious and can even cause death. You should ask your doctor if there is anything you do not understand. Any numbers which relate to risk are from studies of people who have had this operation. Your doctor may be able to tell you if the risk of a complication is higher or lower for you.

1 **Complications of anaesthesia**

Your anaesthetist will be able to discuss with you the possible complications of having an anaesthetic.

2 **General complications of any operation**

- **Pain**, which happens with every operation. The healthcare team will try to reduce your pain. They will give you medication to control the pain and it is important that you take it as you are told so you can move about as advised.
- **Bleeding** during or after surgery.
- **Infection of the surgical site** (wound). It is usually safe to shower after 48 hours. However, you should check with a member of the healthcare team, and keep the wound dry and covered. Let the healthcare team know if you get a temperature, notice pus in your wound, or if your wound becomes red, sore or painful. An infection usually settles with antibiotics but you may need an operation.
- **Unsightly scarring** of the skin, although the cuts needed are quite small.
• **Blood clot in the leg (deep-vein thrombosis – DVT)** (risk: 1 in 3). This can cause pain, swelling or redness in your leg, or the veins near the surface of your leg to appear larger than normal. However, most blood clots are small and settle on their own without causing any problems. The healthcare team will assess your risk. They will encourage you to get out of bed soon after surgery and may give you injections, medication, or inflatable boots or special stockings to wear. Tell the healthcare team straightaway if you think you might have a DVT.

• **Blood clot in the lung (pulmonary embolus)**. This happens if a blood clot moves through the bloodstream to your lungs. If you become short of breath, feel pain in your chest or upper back, or if you cough up blood, you may have a pulmonary embolism. You should tell the healthcare team straightaway or, if you are at home, go to your nearest Accident and Emergency department immediately or call an ambulance.

• **Difficulty passing urine**. You may need a catheter (tube) in your bladder for a day or two.

3 **Specific complications of this operation**

• **Nerve injury** (risk: 1 in 11). When traction is used during the operation to pull the fracture into position, the pudendal nerve in the groin can be damaged. This can cause numbness in the groin. For men, it can sometimes cause problems having an erection. The nerve usually recovers in a few weeks.

• **Compartment syndrome**, where the thigh muscles swell and get tight (risk: 1 in 75). If this happens, you may need an operation to make a cut in your leg to relieve the pressure.

• **Fat embolism**, where tiny particles of fat from bone marrow and blood block blood vessels in the lungs (risk: 1 in 25). If this happens, your lungs will stop working properly. You may need oxygen or, in some cases, intensive-care treatment.

• **Infection in the bone**, which is a serious problem that interferes with healing (risk: 1 in 100). The risk is higher if you had an open fracture. If you get an infection, you will often need further surgery.

• **Breaking of the femoral nail or the locking screws** after a few months (risk: 1 in 40). This usually affects only the locking screws, which is rarely a problem. If the femoral nail breaks before the fracture has healed, you will need an operation to replace it.

• **Delayed union**, where the fracture does not heal in a normal period of time (risk: 1 in 20). If this happens, you may need an operation to remove one of the locking screws or to replace the femoral nail.

• **Malunion**, where the position of the femoral nail causes a slight twist in the leg (risk: 1 in 5). This does not usually cause any problems.

• **Heterotopic ossification**, where small areas of bone form in the muscles near the top of the femur (risk: 1 in 4). This does not usually cause any problems.

**How soon will I recover?**

• **In hospital**

After the operation you will be transferred to the recovery area and then to the ward. At first, you will need to keep your leg raised. You will be given painkillers to help relieve any pain.

Your physiotherapist will help you to start walking using crutches. They will give you exercises to stop your joints becoming stiff.

Your surgeon will let you know how much weight you can put on your leg.

For the first four to five days after the operation, keep the wound dry and use a waterproof dressing when having a bath or shower. The healthcare team will tell you if you need to have any stitches or clips removed, or dressings changed.

You should be able to go home after three to five days. However, your doctor may recommend that you stay a little longer.

If you are worried about anything, in hospital or at home, contact a member of the healthcare team. They should be able to reassure you or identify and treat any complications.
• Returning to normal activities
To reduce the risk of developing a blood clot, make sure you follow carefully the instructions of the healthcare team if you have been prescribed drugs or have to wear special stockings.
You will need to go to the fracture clinic for x-rays to check that the fracture is healing properly.
Once the fracture is healing well, your surgeon will let you put more weight on your leg. It usually takes between three and six months for a femoral shaft fracture to heal.
The healthcare team will tell you when you can return to normal activities.
Regular exercise should help you to return to normal activities as soon as possible. Before you start exercising, you should ask a member of the healthcare team or your GP for advice.
Do not drive until you are confident about controlling your vehicle and always check your insurance policy and with your doctor.

• The future
Most people make a good recovery after surgery and return to their normal activities. It is usual to get occasional aching at the site of the fracture, particularly if the weather is cold. Nobody knows the reason for this and it also happens to people who are treated using traction.
If you get aching because of the femoral nail itself (risk: 1 in 7), you may decide to have further surgery to have the femoral nail removed. You will need to wait up to eighteen months after your first operation before the bone is strong enough. If you do have the nail removed, there is a risk that you will have another fracture in the same place. You should use crutches for a few weeks after the nail is removed to reduce this risk.
Sometimes the heads of the locking screws that are at the top or bottom end of the femur cause discomfort (risk: 1 in 10). If this is a problem, you can have a small operation to remove them.

Summary
Femoral nailing is almost always the best treatment for a femoral shaft fracture. Compared with treatment by traction, you will spend a much shorter time in hospital and will get back to your normal activities sooner.
Surgery is usually safe and effective. However, complications can happen. You need to know about them to help you make an informed decision about surgery. Knowing about them will also help to detect and treat any problems early.

Keep this information leaflet. Use it to help you if you need to talk to a healthcare professional.

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