

OS11 Tibial Shaft Fracture Surgery (Tibial Nailing)

Expires end of February 2017
Issued June 2016

Local information

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What is a tibial shaft fracture?

A tibial shaft fracture is a break of the tibia. Tibial nailing is an operation to fix a broken tibia using a metal rod. The metal rod is called a tibial nail (also called an intramedullary or interlocking nail) (see figure 1).

Your surgeon has recommended tibial nailing to treat your broken tibia. However, it is your decision to go ahead with the operation or not. This document will give you information about the benefits and risks to help you to make an informed decision. If you have any questions that this document does not answer, ask your surgeon or the healthcare team.

How does a tibial shaft fracture happen?

Road accidents and sports injuries are the cause of most tibial shaft fractures. Sometimes the injury causes the bone to break through your skin. This is known as an open or compound fracture.

What are the benefits of surgery?

You will be able to use your leg sooner. Surgery should also make sure your bone heals in a good position.

Are there any alternatives to tibial nailing?

A tibial shaft fracture can be treated using a plaster cast but 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 tibial shaft fracture with an external fixator or a plate and screws. They will explain why they recommend tibial nailing for your fracture.

What will happen if I decide not to have the operation?

You will have a plaster cast on your leg. You will need to have x-rays regularly to check that the bone is healing in a good position. The plaster cast will need to stay on for at least three to four months. Sometimes fractures do not heal well using a plaster cast. You may need another operation.

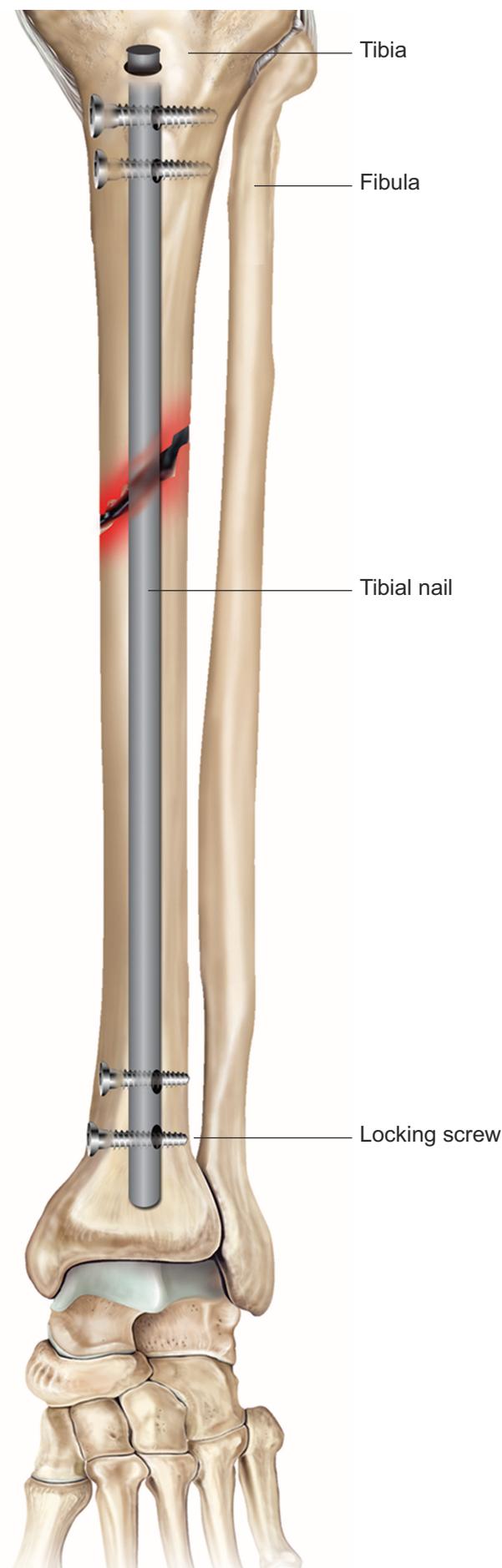


Figure 1
A tibial nail inside a broken tibia

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.

Various anaesthetic techniques are 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 the operation. You may be given antibiotics during the operation to reduce the risk of infection. The operation usually takes an hour to 90 minutes.

Your surgeon will make a cut on the front of your knee and push the tibial nail down the inside of the bone. 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. If you have an open fracture, your surgeon will clean your skin wound thoroughly during the operation to reduce the risk of infection. If your skin is badly damaged, you may also need one or more plastic surgery operations.

Your surgeon will close your skin with stitches or clips.

What should I do about my medication?

Let your doctor know about all the medication you take and follow their advice. This includes all blood-thinning medication as well as herbal and complementary remedies, dietary supplements, and medication you can buy over the counter. Anti-inflammatory painkillers may prevent the fracture from 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 risk of developing complications and will improve your long-term health. Nicotine is known to stop fractures from healing.

Regular exercise should help you to recover and improve your long-term health. Before you start exercising, ask 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 the operation. Let the healthcare team know if you feel cold.

What complications can happen?

The healthcare team will try to make the operation as safe as possible but 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. The healthcare team 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 the operation.
- Unsightly scarring of your skin, although the cuts needed are small.
- Difficulty passing urine. You may need a catheter (tube) in your bladder for one to two days.
- Infection of the surgical site (wound). It is usually safe to shower after two days but you should check with the healthcare team. Keep your wound dry and covered. Let the healthcare team know if you get a high 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 another operation.
- Blood clot in your leg (deep-vein thrombosis – DVT). This can cause pain, swelling or redness in your leg, or the veins near the surface of your leg to appear larger than normal. You may get a blood clot in your calf (risk: 1 in 5). However, most blood clots are small and settle without causing any problems. The healthcare team will assess your risk. They will encourage you to get out of bed soon after the operation and may give you injections, medication, or inflatable boots or special stockings to wear. Let the healthcare team know straightaway if you think you might have a DVT.

- Blood clot in your lung (pulmonary embolus), if a blood clot moves through your bloodstream to your lungs. If you become short of breath, feel pain in your chest or upper back, or if you cough up blood, let the healthcare team know straightaway. If you are at home, call an ambulance or go immediately to your nearest Emergency department.

3 Specific complications of this operation

- Compartment syndrome, where the calf muscles swell and get tight (risk: 1 in 60). You will need another operation to make a cut on your leg to relieve the pressure.
- Infection in the bone, which is a serious problem that interferes with healing (risk: 1 in 40). The risk is higher if you had an open fracture. If you get an infection, you will often need another operation.
- Breaking of the tibial nail or the locking screws after a few months (risk: 1 in 14). Only the locking screws are usually affected, which is rarely a problem. If the tibial nail breaks before the fracture has healed, you will need another operation to replace it.
- Delayed union, where the fracture does not heal in a normal period of time (risk: 1 in 17). You may need another operation to remove one of the locking screws or to replace the tibial nail.
- Malunion, where the fracture heals slightly out of position (risk: 1 in 50). This problem does not usually affect how your leg works or cause any long-term problems.
- Severe pain, stiffness and loss of use of your leg (complex regional pain syndrome). The cause is not known. You may need further treatment including painkillers and physiotherapy. Your leg can take months or years to improve.
- Discomfort in the front of your knee (risk: 1 in 2). Any pain or discomfort is usually mild and is only a problem if your job involves kneeling. The pain may improve if the tibial nail is removed once the fracture is fully healed.

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.

The physiotherapist will help you to start walking using crutches. They will give you exercises to prevent your joints from becoming stiff. Your surgeon will tell you how much weight you can put on your leg.

Keep your wound dry for four to five days, and use a waterproof dressing when you have 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 four days. However, your doctor may recommend that you stay a little longer.

If you are worried about anything, in hospital or at home, contact 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 a blood clot, make sure you follow carefully the instructions of the healthcare team if you have been given medication or need to wear special stockings.

You will need to go to the fracture clinic to have 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 three to six months for a tibial 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, ask 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 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 a plaster cast.

If you have discomfort at the front of your knee, you may decide to have another operation to remove the tibial nail. You will need to wait up to 18 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 (risk: 1 in 100). Use crutches for a few weeks after the nail is removed to reduce this risk.

About 1 in 12 people develops arthritis in the ankle but this does not often need any treatment.

Summary

Some tibial shaft fractures heal well in a plaster cast. However, tibial nailing will help you to get back to your normal activities sooner and will also make sure your fracture heals in a good position. Surgery is usually safe and effective but complications can happen. You need to know about them to help you to 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.

Acknowledgements

Author: Mr Stephen Milner DM FRCS (Tr. & Orth.)
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