

Compartment syndrome and fasciotomy

The aim of this information sheet is to help answer some of the questions you may have about having a fasciotomy for compartment syndrome.

If you have any questions or concerns, please do not hesitate to speak to a doctor or nurse caring for you.

What is compartment syndrome?

Compartment syndrome occurs due to increased pressure within a confined space or compartment in the calf or thigh. This could be in just one leg or in both legs. If untreated, it can restrict the blood supply to muscles in the affected compartment and can result in necrosis (death) of the muscles. Nerves are also damaged from this pressure. This can result in loss of sensation in the skin and paralysis of the muscles they supply. Rapid diagnosis and treatment to relieve the pressure can lead to complete recovery of the affected muscle.

What causes compartment syndrome?

If the blood supply to your leg or legs has been interrupted, when blood flow is restored the muscles in the leg/legs swell causing compartment syndrome. If you have been admitted to hospital as an emergency with poor blood supply to the leg, this can happen when the blood flow is restored.

The initial injury usually causes swelling of the muscle and tissues within the fascial compartment of the limb. This causes the pressure within the compartment to rise. As time progresses, and as the degree of pressure increases, blood flow to the muscles reduces. This lack of blood flow means that oxygen is not delivered effectively to the muscles and nerve damage begins to occur. As muscle damage occurs, muscle cells start to produce chemicals which can further increase the swelling and pressure. Nerves within the compartment can also be compressed and damaged. If left untreated muscle can be permanently damaged and can die.

What are the symptoms of compartment syndrome?

The main symptom of compartment syndrome is pain. Pain usually occurs even at rest and may be worse on movement. Pain is likely to occur after surgery, however in compartment syndrome the pain tends to be severe and out of proportion to the injury. Nerve damage may also make the pain worse, resulting in a burning sensation around the area. Pins and needles can also occur in the limb affected and you may have numbness when the skin is touched. An affected limb may also be pale, cold and feel tense and hard. As compartment syndrome progresses you may experience reduced strength and movement in the affected limb.

How is compartment syndrome treated?

Compartment syndrome should be treated as quickly as possible to reduce the likelihood of permanent nerve and muscle damage. The aim of treatment for compartment syndrome is to relieve the pressure within the fascial compartment surrounding the muscles. This is done by performing an operation called a fasciotomy.

In a fasciotomy, the skin and fascial compartment are cut open so that the compartment pressure is relieved. Any dead muscle will be removed at the same time. The wound is usually left open to prevent the pressure from building up again. The wound may be closed using stitches some days later. Sometimes skin grafting is used to close the wound or the wound is left to heal by itself.

Sometimes a fasciotomy will be performed to prevent compartment syndrome occurring if you are considered at high risk of developing it.

What are the complications of compartment syndrome?

Complications can include:

- Permanent nerve damage
- Permanent muscle damage and reduced function of the affected limb
- Permanent scarring due to the fasciotomy procedure on the affected limb
- In rare cases, loss of the affected limb
- Infection
- Kidney failure: as muscle dies various chemicals are released that can damage the kidneys
- In rare cases death can occur.

As with any major operation there is a risk of you having a medical complication. All potential risks will be explained and discussed with you when the consultant asks you to sign the consent form before the operation.

If you are having the operation under general anaesthetic, you may wish to read our leaflet, **Having an anaesthetic** for more information.

Giving my consent (permission)

We want to involve you in all decisions about your care and treatment. If you decide to go ahead, you will be asked to sign a consent form. This confirms that you agree to have the procedure and understand what it involves. You should receive the leaflet, **Helping you decide: our consent policy**, which gives you more information. If you do not, please ask us for one.

How can I prepare?

We will send you information about how to prepare for your hospital stay with your admission letter. Please read this information carefully.

We will review your regular medicines when you come to hospital for your pre-admission appointment. If you are taking any antiplatelet medicines (such as aspirin or clopidogrel) or any medicines that thin the blood (such as warfarin), then you may need to stop them temporarily before the procedure. If you are taking any medicines for diabetes (for example, metformin) or

using insulin, then these may also need to be stopped temporarily or the dose altered near the time of the procedure. You will be given full information on any changes that you need to make to your medicines at the pre-admission clinic – please ask us if you have any questions.

We will ask you to fast for six hours prior to the surgery. Fasting means that you cannot eat or drink anything (except water) for six hours before surgery. We will give you clear instructions when to start fasting. It is important to follow the instructions. If there is food or liquid in your stomach during your operation it could come up to the back of your throat and damage your lungs. Please continue to take your regular medicines with a sip of water before 6am on the morning of the procedure, unless you have been told otherwise.

What is the prognosis (outlook) for compartment syndrome?

This depends on how quickly the compartment syndrome is diagnosed and treated and whether the nerves and/or muscles have been damaged by the lack of blood supply. Complete recovery of nerves and muscles is possible if compartment syndrome is treated quickly and there is no previous nerve or muscle damage. Quick treatment means that blood supply to the muscles can be restored before permanent damage occurs.

How long will I have open wounds?

In some cases the wounds are left to heal themselves and you will need them dressed regularly. When you are discharged a district nurse will be arranged to do this. Healing time varies but usually takes approximately 4-6 weeks.

Whenever possible your consultant may decide to help the wound heal by performing a skin graft. Your consultant will explain this to you in more detail. It is not always possible to skin graft in every case.

What can I do to help myself?

The physiotherapist will give you exercises to do. Please do them as instructed:

- Drink plenty of fluids
- Keep to a well balanced diet to promote wound healing
- Ensure your dressings are changed regularly
- Report any increased pain/fever to your nurse or doctor.

Smoking: If you are a smoker the single most important thing you can do to help yourself is to give up smoking. Stopping smoking will also help to protect all of your arteries making it less likely that you will suffer from heart attacks or strokes. Giving up is not easy but there is a smoking cessation service and support groups that can help. Your vascular specialist nurse or GP practice nurse can advise you about these. You can contact the free NHS smoking helpline on 0800 022 4 322 or the Knowledge & Information Centre (KIC) (details below) who will give you details of our support services.

Inactivity: Gentle exercise such as walking and cycling are recommended to help improve your overall level of fitness. Exercise helps your body to produce healthy cholesterol and this helps to protect your arteries against bad cholesterol.

High blood pressure: It is very important that you have your blood pressure checked regularly, at least every six months. If you have been prescribed medications for high blood pressure, you must make sure that you take it according to the instructions given.

Diabetes: If you have diabetes it is important that your blood sugar levels are well controlled.

High blood cholesterol levels (fatty substance in your blood): You should eat a healthy balanced diet and try to reduce any excess weight. It is important to reduce the level of cholesterol in your blood. Your vascular nurse can refer you to a dietician if needed. You may be prescribed medication to help lower your cholesterol level (e.g. statin) and low-dose aspirin to help prevent blood clots from forming.

Appointments at King's

We have teamed up with King's College Hospital in a partnership known as King's Health Partners Academic Health Sciences Centre. We are working together to give our patients the best possible care, so you might find we invite you for appointments at King's. To make sure everyone you meet always has the most up-to-date information about your health, we may share information about you between the hospitals.

Contact us

If you have any questions or concerns before or after you have left hospital, please contact the **vascular specialist nurses on 07825 503902** (Monday to Friday 8am – 4pm).

You can also contact **Luke ward on 020 7188 3566 or Sarah Swift ward 020 7188 8842** (24 hours) and speak to the ward sister or nurse in charge.

The above contacts can put you in touch with the following vascular consultants should you wish to do so: **Miss Rachel Bell, Mr Stephen Black, Mr Michael Dialynas, Mr Tommaso Donati, Mr Bijan Modarai, Mr Morad Sallam, Mr Mark Tyrell, Mr Hany Zayed, Mr Said Abisi, Mr Sanjay Patel, Miss Becky Sandford, Mr Andrew McIrvine.**

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.guysandstthomas.nhs.uk/leaflets

Pharmacy Medicines Helpline

If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline.

t: 020 7188 8748 9am to 5pm, Monday to Friday

Your comments and concerns

For advice, support or to raise a concern, contact our Patient Advice and Liaison Service (PALS). To make a complaint, contact the complaints department.

t: 020 7188 8801 (PALS) **e:** pals@gstt.nhs.uk
t: 020 7188 3514 (complaints) **e:** complaints2@gstt.nhs.uk

Language support services

If you need an interpreter or information about your care in a different language or format, please get in touch using the following contact details.

t: 020 7188 8815 **fax:** 020 7188 5953