

Anticoagulation UK

THE MAGAZINE FOR PEOPLE TAKING ANTICOAGULANT THERAPY



**HOW THE INNOVATIVE
GEKO™ DEVICE DEVELOPED
FOR DVT PREVENTION
ASSISTS IN RECOVERY
FROM ANKLE FUSION
SURGERY**

One sufferer, Mrs Angela Hood, who was unable to work for a number of years due to continuous chronic pain, has hailed the breakthrough of a new medical device which relieved her pain. Her consultant surgeon, Mr McKinley, prescribed the new device, called the geko™, to prevent swelling during the acute stage of post-surgical healing following revision surgery. The geko™ device prevented the build-up of swelling, which can inhibit recovery and immediately reduced Angela's chronic pain. Both Angela and Mr McKinley report the result as "remarkable".

THE BACKGROUND

Initially launched for DVT prevention and more recently oedema reduction, an ankle fusion patient at the Spire Murrayfield has hailed the geko™ device as breakthrough following foot and ankle surgery to address chronic pain.

Launched in 2015, and supported with NICE (National Institute for Health and Care Excellence) guidance (MTG19) for unmet need VTE prevention, Firstkind is currently working with clinical leads in 15 NHS and private hospitals, exploring use of the geko™ in 26 clinical pathways, one of which is oedema reduction following foot and ankle surgery.

Around eight million Britons suffer from osteoarthritis, with symptoms including mild to severe pain and inflammation, and difficulty moving as bony growths – or osteophytes – develop around the affected joints. These spurs are caused by the breakdown of cartilage between the bones, with the bones then grinding against each other.

Ankle fusion surgery (arthrodesis), which involves fusing together two bones in the ankle to prevent the painful grinding, eliminates motion to provide stability.

Remarkable

This fusion surgery does involve risks such as infection, nerve pain, deep vein thrombosis or of non-union where the bones fail to knit together. Although surgical techniques have improved, failure of surgery such as a non-union can still occur and this will lead to

significant ongoing symptoms for the patient.

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THE PATIENT – MRS HOOD

Angela explains, "Diagnosed with Osteoarthritis, I underwent ankle fusion and bone graft surgery in 2010. The operation went well, the pain however was extreme, as was the swelling and bruising. No matter what pain medication I took, it just didn't seem to touch it. The chronic pain continued for 2 years, during which time I was unable to sustain my job, due to lack of sleep and not being able to put weight on my foot.

In a move to resolve the chronic pain, I had surgery in 2012 to remove the metal screws. The pain, however, persisted, and I decided that I would simply have to live with the pain, and so I adapted to using a wheelchair and elbow crutches to move around.

In 2013 I took a desk job. It allowed me to mostly sit and I could get there by automatic car. I managed the continual pain with a wide range of medication. The cocktail of pain relief, however, (the need to counteract one medicine with another) badly affected my stomach. One drug in particular would actually stop me driving. I could take it only sparingly, despite needing it.

During early 2016 severe swelling developed and with it even greater pain. I therefore contacted Mr John McKinley. He scanned and x-rayed my ankle and confirmed that the bones had not healed and he would need to operate. I was extremely anxious having already gone through so much.

The revision surgery went ahead in May last year. It was extensive. Left ankle fusion with a bone graft harvested from the site of my previous surgery – so two open wounds! When I woke I was naturally in extreme pain and was given pain relief. This time, however, I was also given a new medical device, called geko™. Fitted to the side of the knee, I wore the small device for 24 hours a day. I also took it home to self-fit for 12 hours a day. The geko™ has proven to be fantastic! I have had very little pain, swelling or bruising. On one occasion I forgot to fit the geko™ before bed, and woke in the night in extreme pain. Within 30 minutes of fitting geko™ the pain completely eased.

When I had my open cast changed to a full cast, I was able to see the ankle and foot. There was minimal bruising and the

surgical wound had healed. There was also less swelling in the foot than before the operation, and this amazed me! This small device has made a real difference. After only a short time on my leg I can hardly feel the geko™ activating the calf muscles. I would recommend the device to anyone having ankle fusion surgery.

Increase in blood flow up to 60%

I now only take co-codamol, if needed occasionally – the first time in 6 years that I have been able to do this.

My hope is the geko™ device will continue to enhance my recovery, and I will be able to walk again soon without the use of aids”.

THE GEKO™ DEVICE

The size of a wrist-watch and worn at the knee, the geko™ device is a battery powered, disposable, neuromuscular electrostimulation device designed to increase blood flow in the veins of the leg to reduce the risk of DVT (as approved by NICE) and to prevent the build-up of pre and post-surgical swelling.

The geko™ device, through gentle electrical impulses, stimulates the common peroneal nerve activating the calf and foot muscle pumps, increasing venous, arterial and microcirculatory blood flow.

The increase in blood flow is similar to that achieved by walking, up to 60%, without a patient having to move.

A 2016 study by Professor Andrew Nicolaides and Dr Maura Griffin¹ has measured the effect of the geko™ device on blood flow in the deep veins of the calf. The study has shown significant volume and velocity increases within the gastrocnemius, peroneal and posterior tibial veins – the first time that a mechanical device has reported enhancement to blood flow in the deep veins, and the result of the unique dorsiflexion achieved by the geko™ device.

THE CONSULTANT – MR MCKINLEY

Mr John McKinley, a consultant orthopaedic foot and ankle surgeon at the Spire Murrayfield in Edinburgh, says, “The goal of ankle fusion surgery is to relieve pain and maintain or improve

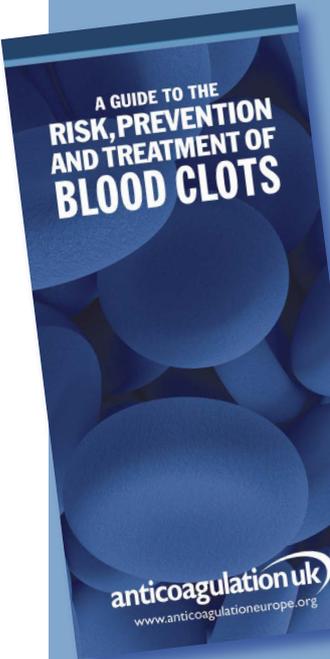
function for a patient with ankle arthritis. Complex ankle fusion, which is fortunately rare, carries a higher risk of delayed and non-union fixation, as has been the experience of Mrs Hood, where she has suffered unremitting pain. By fostering an environment that embraces innovation, we have been able to prove the geko™ device as an adjunct to healing, oedema reduction and significant pain relief, with good compliance in ankle fusion surgery”.

THE SPIRE – MURRAYFIELD

“We are determined to ensure that the Spire remains a pioneer of new treatments and models of care so that our patients will be amongst the first to benefit from these hugely exciting medical advances. Not only does this story demonstrate the Spire’s attractiveness as a place to test, develop and adopt revolutionary new products, it is also another important step towards creating and providing truly twenty-first century health care.”

References:

1. A. Nicolaides, M Griffin, Measurement of blood flow in the deep veins of the lower limb using the geko™ neuromuscular electro-stimulation device. Journal of International Angiology August 2016-04



A GUIDE TO THE RISK, PREVENTION AND TREATMENT OF BLOOD CLOTS

anticoagulationuk
www.anticoagulationeurope.org

February 2017

If you are being admitted into hospital in the near future or you are currently an inpatient, you may be at risk of developing a blood clot. This guide is intended to help you to learn more about blood clots, which can form in your body after illness or surgery and the choice of prevention therapies that are available to you.

Blood clots

Most blood clots form in the deep veins of the leg. A clot in a deep vein is called a deep vein thrombosis (DVT). DVT can cause inflammation, swelling and pain in the leg. There is a danger that the clot, or part of it, may break loose and travel to the lungs. This is called pulmonary embolism (PE), and PE can cause serious illness and is a leading cause of preventable death.

Although blood clotting is necessary to stop bleeding after injury, it can be harmful when clots form deep inside the veins. A clot is formed when blood cells stick together to form a solid mass. A blood clot can fully or partially block a vein.

Being a patient in hospital increases the risk of getting a blood clot, particularly after surgery or when unable to move for prolonged periods. A clot can occur during a hospital stay or when you return home.

Risk factors

Some people will be at higher risk of a blood clot and the risk factors include:

- A previous DVT or PE
- Immobility
- Excessive weight
- Age 60 and above
- Cancer and chemotherapy treatment
- Smoking
- Surgery
- Hormone Replacement Therapy or the Contraceptive pill
- Acute medical illness e.g. heart failure, chronic respiratory diseases

Preventive measures are usually necessary when there is an increased risk of developing a blood clot. Prevention can include early walking after surgery, making sure you drink plenty of fluids, a choice of mechanical compression devices or anticoagulants (sometimes called blood-thinning drugs), explained in this leaflet.

Risk assessment

If you are going into hospital your risk of developing a blood clot (VTE) will be assessed. If you are at risk they will explain what treatments can be given to help prevent you developing a blood clot. They will talk to you about the benefits and risks of each treatment and how long you will need each treatment for. If this does not happen please ask to be risk assessed.

Compression stockings

You may be measured and fitted with knee or thigh-length elastic stockings (also called anti-embolism stockings). Fitted to both legs, they apply continuous pressure to gently compress the legs. The compression increases blood flow and prevents the veins in the leg from expanding, stopping blood pooling and forming a clot. They may be used in combination with other mechanical devices or anticoagulants. Stockings should be worn day and night until you are back to your normal level of mobility. It is important that you are shown how to put them on and how to care for them before you go home, as they can sometimes be difficult to fit due to their firmness. Ask to be shown the ‘inside out’ technique which helps make fitting much easier.

Mechanical devices apply pressure to the legs to help keep the blood circulating. The different types of mechanical devices include: elastic compression stockings, sequential compression devices, venous foot pumps and neuromuscular electrostimulation (NEMS).

Compression Devices (SDCs)

You may be asked to wear calf-length or thigh-length compression sleeves or foot compression boots to increase the blood flow in your legs. An electrical pneumatic pump, at the foot of the bed, fills the sleeves or boots with compressed air to inflate and deflate them at regular intervals.




PATIENT INFORMATION LEAFLET NOW AVAILABLE

Essential information covering the risks of blood clots and the use of compression stockings, neuromuscular electrostimulation and compression devices.

For more information or to order this threefold leaflet please email:
geko.support@firstkindmedical.com

NICE guidance

NICE guidance (MTG19) supports the use of the geko™ device for people who have a high risk of VTE and for whom pharmacological or other mechanical methods of VTE prevention are impractical or contraindicated!

gekotm
circulation support

VTE & Oedema Prophylaxis

Providing increased blood circulation to reduce the risk of VTE¹ and oedema²



The geko™ device **stimulates** the common peroneal nerve **activating** the calf and foot muscle pumps, increasing venous, arterial and microcirculatory blood flow^{3,4} – up to 60% to that achieved by walking⁵.

For more information visit www.gekodevices.com and consult your local distributor whose details you will find at bit.ly/GekoContactUs

¹⁻⁵ Data on file available on request.



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