

A feat for sore feet

Painful big toe? Don't want a fusion? These Sheffield surgeons may have the solution using an American implant with a difference

Big toe arthritis is a very common condition affecting adults of all ages but most commonly becoming apparent in middle age. In arthritis, the glossy cartilage that lines the joint surfaces wears away, often leaving a painful, stiff and swollen big toe joint. Arthritis is different from a bunion, where the big toe becomes bent towards the lesser toes and the

swelling is on the inner border of the foot (see *Toe the line*, below left).

In big toe arthritis, the swelling is more on the top of the foot and is associated with a stiff big toe joint. The medical term for this condition is hallux limitus which, translated into English, means 'big toe limitation'.

Relief simply abounds

Often the pain starts during or after prolonged activity or exercise but, because the condition usually progresses, the symptoms gradually start to appear after less strenuous activity. Therefore, the pains start to restrict activities such as recreational walking and dancing. For women, the stiffness can interfere with the ability to wear high heels as this pushes the toe upwards and causes more pain as the bony swelling at the top of the toe (osteophyte) causes impingement.

Treatment starts with avoidance of activities that provoke the pain. As the pain worsens, simpler activities that cannot be avoided cause pain. Sometimes footwear changes and insoles can make a difference either by changing the way the foot moves or by accommodating for swelling.

If the pain persists after all these options have been tried, then surgery can be considered. Traditional surgical treatment involves either removing the swelling on the top of the joint (cheilectomy – cheilosis is Greek for 'lips' so this involves removing the 'lips' of the joint) or by formally stiffening the joint (meaning a fusion or arthrodesis).

However, if the pain arises from deep within the joint rather than the 'lips' knocking into one another, a cheilectomy often fails to provide a welcome relief. A fusion will remove the pain but permanently stiffens the joint, and can impede activities that require a flexible big toe.

The Cartiva solution

So the Americans have come to the rescue with a device called Cartiva, which is made



MEET THE EXPERT
Mr Chris Blundell
BMedSci, MD,
FRCS (Tr&Orth)

Mr Blundell has been a consultant orthopaedic surgeon for more than 12 years and specialises exclusively in adult foot and ankle conditions. He trained on the Cambridge orthopaedic scheme and did two fellowship periods of enhanced training in Melbourne, Australia.

Former chairman of the Sheffield Orthopaedics Limited Group based at The Claremont Hospital, Mr Blundell has published widely on aspects of orthopaedic foot and ankle surgery and is a very active teacher, as exemplified by his role as chairman of the Education Committee of The British Orthopaedic Foot and Ankle Society.

from a material similar to that used in making contact lenses. This has been used several thousand times around Europe but its use in the big toe has never been properly assessed until recently, hence the involvement of Chris Blundell and Mark Davies, two leading foot and ankle surgeons based in Sheffield.

'We were part of a multinational team which compared the Cartiva implant with traditional joint fusion and this study – the largest ever undertaken for the big toe joint – has now been completed. Although the formal results will not be released until the summer, we are happy that this operation keeps the joint moving and reduces pain significantly,' says Mr Blundell, who was the one of the lead investigators for the study.

Furthermore, Mr Davies, who was responsible for recruiting most of the patients



Before implantation



Two years following implantation



An xray of the implant

'The material in the Cartiva implant (a water-filled hydrogel) is very similar in terms of strength and slipperiness to joint cartilage – the very thing missing in arthritis'



MEET THE EXPERT
Mr Mark B Davies
FRCS (Tr&Orth)

Mr Davies has been a consultant orthopaedic surgeon with a special interest in treating elective and traumatic conditions of the adult foot and ankle for the past nine years.

He qualified from the University of Southampton in 1993 and undertook basic training in London, Oxford and Swindon. He undertook orthopaedic training in Sheffield before doing fellowship training at the Brisbane Foot & Ankle Centre.

Mr Davies is a director of Sheffield Orthopaedics Ltd and directs the research being produced from the Sheffield Foot & Ankle Unit. He has published extensively on all aspects of foot and ankle surgery.

to the trial in Sheffield and carried out many of these operations, says: 'I am confident that this product, which after all is made from the same hydrogel polymer put onto people's eyes

all around the world, is very safe. We saw no ill effects from it at all. The procedure is simple to perform and is carried out as a day-case procedure in our hospitals.'

Mr Blundell adds: 'The operation is performed either with a local anaesthetic or with the patient asleep. After the procedure, we ask patients to rest for a couple of weeks, keeping their foot elevated most of the time while the wound completely settles.'

'Once we are happy that the soft tissues are healing well, people can get on with walking about, although we don't like people to do sport or strenuous activity on the new joints until they are six weeks post-operation.'

'Delighted with the outcome'

One patient who was part of the study and had her operation three years ago was asked if she would have it done again. She says: 'Certainly! In fact I have no pain at all and would very much like my other big toe doing as that is now getting painful.' She had her operation as a day case under an ankle block. 'I had no pain after the first day and am delighted with the outcome.'

Mr Davies was asked whether everyone with an arthritic big toe was suitable for a Cartiva implant. He says: 'As with most medical devices, not everyone will benefit.

For example, those who have extremely stiff big toe joints or patients with excessive demands on their feet – such as long-distance runners or heavy manual workers – could potentially have less benefit due to excess stresses placed on the joint.'

FOR MORE INFORMATION

If you have a painful big toe because of arthritis and you do not wish to have a fusion, you may want to get in touch with Chris Blundell or Mark Davies for a consultation. Visit www.sheffieldorthopaedics.com or www.cartiva.net To arrange a private appointment with either expert, their secretary can be reached on 01142 632144 or sharon.stellars@sheffieldorthopaedics.com



sheffield orthopaedics ltd



The Cartiva implant

TOE THE LINE

Bunions and big toe arthritis are different but both are painful



Hallux rigidus usually develops in adults between the ages of 30 and 60 years. While the true cause of hallux rigidus is unknown, risk factors include family history, prior injury that damages the articular cartilage, and differences in foot anatomy that increase stress on the joint.