New ultrasound treatment for tennis elbow

SGH unveils minimally invasive treatment involving ultrasound energy for treating tennis elbow – the first such service in the Asia-Pacific

I T’S CALLED tennis elbow. But it isn’t just the elbow that is affected, nor is it only caused by playing tennis.

Tennis elbow, or tendinitis, is a painful condition that occurs when the tendon – the structure that joins the muscle to the bone, allowing the joint to move – in the elbow (or any other part of the body) is overworked, usually by repeated motions in the wrist and arm. So it is a problem for people who repeatedly strain their elbows, like administrators who use a computer mouse or carry heavy files, housewives and chefs. It is also likely to be a problem for someone who is middle-aged rather than the young or the very old.

When tendinitis is diagnosed, treatment can include rest and anti-inflammatory medications in the initial stages, physical therapy such as hot and/or cold compresses and exercises, steroid and anaesthetic injections, or blood products, as well as surgery when the disease is advanced.

First such procedure in Asia-Pacific

Recently, a new and quicker treatment has become available at the Singapore General Hospital (SGH): it is a non-invasive day-surgery treatment that results in faster recovery, and is the first such procedure available in the Asia-Pacific region.

“The SGH sees about 20 to 30 patients with tennis elbow every month, and we understand how frustrating it can be for patients when their conditions do not improve after non-surgical therapies,” said Dr Joyce Koh, Senior Consultant, Department of Orthopaedic Surgery, SGH.

“The procedure provides patients who are hesitant or fearful of surgery with another treatment option, as it is performed in an outpatient clinic setting.”

Known as a percutaneous ultrasonic tenotomy, the procedure is performed under local anaesthesia and involves using ultrasound and a toothpick-sized probe to treat the damaged tendon tissue. Using ultrasound imaging, the location of the damaged tendon tissue is identified and the probe is inserted through the skin into the area. Ultrasonic energy then cuts, breaks up and removes the damaged tissue, sparing the surrounding healthy tendon tissue. No sutures or stitches are needed when the procedure is completed, and only a sterile adhesive bandage is used to cover the wound. The patient is discharged on the same day.

Patients who undergo the procedure typically take about a week to heal from the wound, although Dr Koh advises staying off stressful activities for at least six weeks for internal tissues to heal and to build up. With more conventional forms of surgery, patients may need two weeks to recuperate before the surgical stitches are removed, and several more weeks before they can return to work. Most conventional surgeries are also done under general anaesthesia, with its related risks and complications.

Alternative to surgery

“This procedure is really for people who have ‘maxed out’ on every other treatment. We wouldn’t recommend it for someone who’s experienced just three months of symptoms, for instance,” said Dr Koh, adding that 75 per cent of the people who go through the procedure are likely to have undergone other forms of invasive treatments without success. Typically, about 10-20 per cent of patients with tennis elbow go through surgery eventually. The procedure takes less than 20 minutes to perform, and this includes getting the patient and equipment ready. The “energy” time – the actual time spent cutting out the abnormal tissue – lasts only about half a minute, she said.

The technology used is similar to that for eye cataract surgery where ultrasonic energy is focused into a very small area, is very strong, and does not cause much damage to surrounding, healthy tissue. Previously, cataract surgery was complex, performed under general anaesthesia, and often required the patient to stay in hospital for a week to recover. “(Percutaneous ultrasonic tenotomy) uses the same technology for musculoskeletal problems, and that’s why it’s so exciting!” Dr Koh said.

The SGH introduced the minimally invasive procedure in August 2012 after a joint trial between the hospital and the Mayo Clinic of the US to test its efficacy and safety. The Mayo Clinic’s Professor Bernard Morrey came to Singapore to perform the procedure on the first seven patients in June 2011, with another 13 done by SGH doctors in November of the same year. After the trial, another 20 patients underwent the procedure.

In the US, 9,000 people have gone through the procedure for tendinitis of various parts of the body, including the most commonly affected elbow and heel.

Dr Koh, who was the principal investigator of the local study, said that the trial found that all patients took to the procedure very well without any device or procedural complication recorded. Wounds healed without complication within a week, and none of the participants had complaints.

The findings of the study were presented at the Singapore Orthopaedic Association Annual Scientific Meeting in October 2013, and internationally at the European Federation of National Associations of Orthopedics and Traumatology and the Canadian Orthopedic Association annual meetings.

No sutures or stitches are needed for the new procedure for tennis elbow, and only a sterile adhesive bandage is used to cover the wound.

The new non-invasive procedure involves using ultrasound and a toothpick-sized probe to remove damaged tendon tissue.