



QUESTION | Four months ago, a patient with no apparent injury experienced severe heel pain one evening. The next morning, she was unable to weight bear on her heel. The CT scan showed a large heel spur and fasciitis with NO stress fracture of calcaneum. Her GP administered a cortisone injection and prescribed mobic which gave some relief. She attended 6 sessions of physio which included shockwave treatment, ultrasound, taping, inner soles, heel cup etc. At present, walking even 5 minutes aggravates symptoms. Where to now for this patient who has had to give up a lot of activities she enjoys, especially walking, and the gym?

ANSWER | When treating a patient for a condition, the most important role for the practitioner is to establish a diagnosis. Once the symptoms and investigations point toward a diagnosis, a particular outcome can be expected and relayed to the patient. This is a vital part of our treatment of patients, as we help to alleviate any anxiety by letting patients know what to expect with their condition. In this particular case, the patient has heel pain. Assuming this patient is an adult, by far the most common condition with heel pain is plantar fasciitis. Plantar fasciitis is an extremely common condition, occurring in about 1 in 10 people in their lifetime. Plantar fasciitis usually occurs between the age of 40 and 60. Patients usually report a spontaneous onset without injury. It seems to be associated with obesity, prolonged walking or standing on hard surfaces, calf tightness, and running.

Patients will usually report pain of varying intensity. Pain is worse in the morning when taking the first step out of bed, and usually will get better after walking around. Some patients will have worsening pain during the day if they are doing a lot of walking. Pain can be quite intense for patients, but usually pain is not present at rest i.e. while lying in bed. Pain at rest may suggest other diagnoses such as an inflammatory condition, infection or tumour.

The differential diagnosis for plantar fasciitis will include, a calcaneal stress fracture, ankylosing spondylitis, tarsal tunnel syndrome, infection, and tumour. Physical examination and investigations will help to establish the diagnosis and rule out other causes.

On physical examination, patients with plantar fasciitis will have pain at the origin of the plantar fascia. Pain will not be present elsewhere. A calcaneal “squeeze test” should be performed, and if painful, a stress fracture can be suspected. Patients with tarsal tunnel syndrome will also have pain near the origin of the plantar fascia. But a Tinel’s sign, or percussion of the tibial nerve may reproduce symptoms. Numbness in the foot or along the lateral foot may also raise suspicion of nerve entrapment. Patients with intense pain, or constant pain, or with bilateral involvement may have an inflammatory condition. Blood tests may help to rule out an inflammatory condition.

Initially in plantar fasciitis, no studies are needed, especially if symptoms are classic as described. It is important to note that a calcaneal spur is not thought to be the cause of the symptoms. Calcaneal spurs are present in 75% of patients with plantar fasciitis, and are present in 63% of patients without heel pain. In treating plantar fasciitis with surgery, removing the heel spur is not routinely done as it is not thought to affect the outcome. I have seen many patients with plantar fasciitis that do not have spurs. The condition is due to soft tissue thickening or micro tears of the plantar fascia, and is not caused by the spur.

Nevertheless, routine radiographs are often helpful and easily obtained. I order weight bearing radiographs of the feet to check the alignment, assess for arthritis, bony lesions, or fractures. An MRI will demonstrate thickening of the plantar fascia, increased signal or tears, and will allow assessment for stress fractures, arthritis, tumours, and infection. When the diagnosis needs to be made, an MRI will be the most helpful test to obtain. A CT scan will NOT rule out a stress fracture of the calcaneus, as a CT only shows gross evidence of fractures. Stress fractures may be more subtle and will show as increased signal on an MRI. A bone scan is another test that can differential between a stress fracture and plantar fasciitis, and is a good test to get when an MRI cannot be obtained. The benefit of the MRI is that it will also show soft tissue pathology.

When treating plantar fasciitis, the single most helpful aspect of treatment is giving advice to patients about the natural history. It is well established that 90% of patients will be cured of their plantar fasciitis within a year, regardless of the severity of their current pain. While there are numerous treatments for plantar fasciitis, no one single treatment has been shown to be superior to others in relieving the symptoms. Many patients will swear by a treatment they have had, but I find that patients will not all praise the same treatment. Because there is no “holy grail” for this condition, and it seems to resolve for patients on its own, I find the most effective way to help patients is to use treatments that can minimise the pain during its course, until it eventually resolves.

Initially, physiotherapy with daily calf stretching is an important part of the treatment, especially in patients with calf tightness. Heel cushions, orthotics, or shoe modification can be helpful in relieving symptoms. As orthotics, have not been shown to be superior to heel cushions, I usually initially recommend the more cost-effective heel cushions. As in this patient, Mobic or other NSAIDS may help to relieve pain. Cortisone injections can be an effective method to reduce the symptoms of heel pain. The length of time of pain relief can be unpredictable, anywhere from days to months. I usually offer an injection in the office with patients who have had symptoms for 6 weeks or longer. Night splints are an effective way of keeping the plantar fascia in a “stretched” position at night by keeping the ankle dorsiflexed. I usually consider these in patients who have most of their pain first in the morning.

For patients who have had symptoms for more than six months and have tried these treatments, there are numerous alternative treatments available. PRP injections and prolotherapy are currently being used to treat plantar fasciitis, although there is no strong evidence to support their use. Extracorporeal shock wave therapy (ESWT) has been shown to be equally effective to surgery. ESWT is a non-invasive technique utilising high amplitude pulses of mechanical energy to create a localised injury in the tissue. Usually three sessions are done. Results in the literature report a 70% success rate. I usually recommend ESWT to my patients who have had symptoms for over six months where physiotherapy and cortisone injections have failed. Surgery is only recommended to patients with recalcitrant plantar fasciitis. When all non-operative treatments have failed and symptoms remain for over one year, the patient would be considered for surgery. My preferred procedure is an endoscopic plantar fascia release. Surgery is done as a same day procedure, and patients walk immediately in a boot as tolerated. The success of the surgery is 80%.

In this particular case described, the patient has had symptoms for four months. While patients can have significant pain as described that makes it difficult to walk, I would be concerned about the diagnosis, prompting me to get an MRI. Due to the intensity of the symptoms, I would also be getting blood tests to rule out an inflammatory condition. From your description of the case, it is important to note a couple of points:

1. The heel spur does not contribute to the diagnosis. As stated above, 63% of asymptomatic patients have heel spurs.
2. CT scan does not rule out a stress fracture. An MRI or a bone scan can help to demonstrate the presence or absence of a stress fracture.
3. The patients has had symptoms for four months, and the natural history of her condition may allow it to last for longer.

Assuming that the MRI demonstrates plantar fasciitis, I would consider using a boot for six weeks, day and night (at night to act as a night splint) to help settle the pain. I usually encourage patients to walk, but recommend limiting the walking or exercises that may be exacerbating the symptoms.

If the MRI or blood tests demonstrate other pathology, then treatment would be tailored to the diagnosis.

In summary:

1. Plantar fasciitis usually resolves in 90% of patients within a year with treatment.
2. When unsure about the diagnosis, an MRI will help to confirm the diagnosis or demonstrate other pathology.
3. Blood tests may be required to assess for an inflammatory condition.
4. No one treatment is superior to others for plantar fasciitis. Treatments should be tailored to each patient to minimise the symptoms until they resolve according to their natural history.

Dr Todd Gothelf