Beware of Your Achilles Heel

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Sarah, 47, is a healthy woman who visits you eight months after she injured herself playing squash. While playing, she thought that her opponent had hit her in her distal Achilles region with the ball or the racket.

At the time, she had great difficulty walking properly and she went to the emergency department. She was told that she had strained the Achilles area and she was instructed to see a physiotherapist.

Sarah saw a physiotherapist for months on end, but there was no significant improvement and she was still unable to use her left foot properly. She went for an X-ray, which was found to be normal.

This is the first time you have seen Sarah and you begin her examination with her history. You ask her questions pertaining to the initial injury, in particular, what the circumstances were leading up to her injury—the mechanism of injury (MOI).

At this point, you are desperately trying to remember your gross anatomy as you think about which structure could be damaged. Sarah remembers lunging for a shot and as she did, she felt a pain in her left calf. She immediately stopped playing, iced the area and took an anti-inflammatory.

As you continue Sarah's physical exam, you examine the posterior heel area and observe that her left Achilles area is swollen. You remember the Thompson test from your earlier clinical years and you administer it. With Sarah kneeling, you squeeze her calf muscle above the musculoskeletal junction and you look to see whether or not the foot plantar flexes. If the foot plantar flexes downward (*i.e.,* foot points down) with implementing the Thompson test, then the test is negative and the Achilles tendon is reasonably intact. If the foot does not plantar flex downward with the Thompson test, then the results of the test are positive and this would indicate that there is significant disruption of the gastroachilles tendon complex. As a result, further investigations are necessary to measure the extent of the injury. Sarah has a positive Thompson test.

Although there was no significant palpable gap, she did have tenderness in the distal Achilles area.

You ask Sarah if she can rise on all of her toes and she can. However, when she tries to rise on her toes on each foot independently, she discovers that she cannot do so on her left foot.

You suspect that Sarah may have incurred a significant injury to her left Achilles tendon.

You stop her physiotherapy and send her for radiologic investigation (*i.e.,* quick soft tissue ultrasound).

Two weeks after the soft tissue ultrasound, you meet with Sarah to discuss the results. The ultrasound indicates that there is a disruption of the Achilles fibres; however, the extent of the damage is not clear.

You order an MRI examination of her left Achilles tendon and have her return for further follow-up.

Once the MRI is reviewed, the injury is perfectly delineated and the proper treatment options are presented. The MRI shows a partial tear of the Achilles tendon. You explain to Sarah that because the injury is now 10-months-old, the chances of orthopedic surgery working are slim. Furthermore, because of the scar tissue that would have formed at this point, it would be difficult to surgically repair the Achilles tendon.

You explain to Sarah that she may need to wear a cast on her foot for six to 12 weeks. You send her to the orthopedist for a formal opinion.

After seeing Sarah, the orthopedist confirms what you thought to be true; surgery would be difficult and is not encouraged. The treatment plan consists of putting Sarah in a cast for two four-week intervals in different positions, starting with 20 to 30 degrees of plantar flexion (*i.e.,* to tighten up the Achilles tendon) then into a neutral position. Afterwards, an extensive course of physiotherapy would follow.

Sarah is frustrated by this news, as she feels that if she had been diagnosed accurately from the outset, the treatment would have been different. You try to reassure her that the outcome would be very similar whether she had surgery or was put into a cast. The re-rupture rate after surgery is four times less then with wearing a cast.

After your explanation, Sarah feels confident in the diagnosis and the treatment options that she has been given. She decides to go with conservative management.

You arrange for her to be seen by the orthopedic surgeon to arrange being put into a cast. Her expectations have been reset and even though it is months down the road, she feels like she is on her way to recovering.

You see her in a follow-up appointment after her cast has been removed and you are delighted to report how well she has progressed.

You explain to her all of the exercises and stretches that she'll need to do to get better and you tell her that she must continue these as homework for life. If she can discipline herself to do this, then she will give herself the best chance for as near a complete recovery as is possible. The next time you are hit in the calf, beware because this may turn out to be your "Achilles heel."

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