

CASE REPORT

Two cases of peroneus brevis tendon tear

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A longitudinal tear of the peroneal tendon is thought to be the result of repetitive peroneal subluxation. However, this report documents two cases of longitudinal split of the peroneus brevis tendon that had no peroneal tendon subluxation. Primary suture was performed. Subluxation of the peroneal tendons was not identified surgically in either case.

There are a few reports of peroneal tendon tears, which are thought to be uncommon. The causes of such injuries have been discussed.^{1–6} It is thought that repetitive mechanical wear and tear of the tendon within the retrofibular groove may be the cause of peroneus brevis tendon tears. Subluxation of the tendon, as a result of ankle instability and incompetence of the superior peroneal retinaculum, may contribute to this mechanism.^{1–4} On the other hand, Bassett *et al*⁵ reported peroneal tendon tears that did not result in instability of the ankle and there was no subluxation of the tendon when examined surgically.

We report here on two cases of peroneus brevis tendon tear with no subluxation of the tendons.

CASE REPORTS

Case A

A 17 year old male high school baseball player complained of persistent pain on the posterolateral aspect of his left ankle which had been present since his first ever severe initial ankle sprain about three weeks before. He reported that the pain occurred on the retrofibular groove while jogging.

Retrofibular tenderness and palpable popping with dorsiflexion eversion stress was found on physical examination. There was no evidence of peroneal tendon subluxation. Plain and plantarflexion inversion stress view radiographs were normal. Conservative treatments such as taping and steroid injections were not effective.

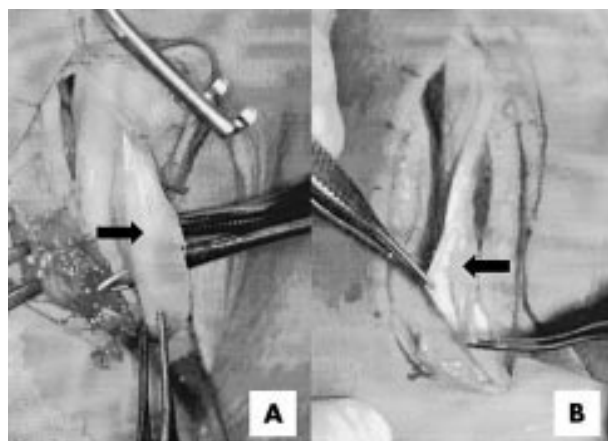


Figure 1 Peroneus brevis tendon tears in case A and B.

A surgical exploration of the peroneal tendon was performed. A longitudinal split of the peroneus brevis tendon about 7 cm long was found (fig 1A). The superior peroneal retinaculum was noted to be uninjured, and there was no subluxation of the tendon. Anatomical abnormalities such as peroneus quartus, low lying peroneus muscle belly, and abnormal shaped fibular groove were not noted.² The torn tendon was sutured with 4-0 Nylon.

After surgery, the patient was placed in a non-weight-bearing cast for two weeks, followed by a posterior splint for another two weeks. He could jog at six weeks and returned to full activity about three months after the operation. One year after surgery, he was doing well with no pain.

Case B

A 22 year old male collegiate tennis player complained of retrofibular groove pain and swelling in his left ankle. He had a four month history of an initial ankle sprain and reported that the pain and swelling had occurred almost every time he played tennis since the injury. Conservative treatment, including steroid injections, produced no improvement, so he was referred to our department.

Physical examination produced the same findings as in case A, and radiographs were also unremarkable.

Surgical exploration found a longitudinal split of the peroneus brevis tendon about 5 cm long (fig 1B). An effusion was noted in the synovial sheath. There were neither superior peroneal retinaculum injury nor subluxation of the tendon. There were no anatomical abnormalities. The fraying was debrided and the tendon defect sutured with 4-0 Nylon.

After surgery, the same regimen as in case A was applied. After the splint was removed, an ankle brace was used because of mild residual ache. The patient returned to playing tennis about three months after surgery. At the 14 month follow up, he had no symptoms.

DISCUSSION

Peroneus brevis tendon tears are not restricted to the elderly but can also occur in young athletes in conjunction with lateral ankle sprains. They may be caused by a cascade of events such as (a) incompetence of the superior peroneal retinaculum, (b) subluxation of the peroneal tendon, and (c) compression from the peroneus longus tendon lying posteriorly to the sharp posterior ridge of the fibula.^{1–4} Lateral ankle instability may contribute to (a).^{1–4}

However, Bassett *et al*⁵ reported peroneal tendon tears in young athletes that occurred after their initial ankle sprains, and all these patients had stable ankles. Uninjured superior peroneal retinaculum with no subluxation of the peroneal tendon was confirmed surgically in each case. This is the same as in our two cases. In a cadaveric study, they also found that both peroneus longus and peroneus brevis bound tightly

Abbreviations: MRI, magnetic resonance imaging

Take home message

Peroneal tendon tears without tendon subluxation are not common, especially in young people, and may be overlooked. If the pain on the posterolateral aspect of the ankle is refractory, a peroneal tendon tear should be considered.

to the posterolateral wall of the retrofibular groove with lesser amounts of ankle plantar flexion in the range 15–25°. Our two patients may have had ankle sprains in this range resulting in peroneus brevis tears without superior retinaculum injuries.

Magnetic resonance imaging (MRI) is a useful examination for visualising the peroneal tendon. Two papers have reported MRI of peroneal tendon splits.^{7,8} It is useful for differentiating peroneal tendon splits from other lateral ankle disorders. Moreover, it can assess anatomical variants and bone/soft tissue changes before surgery, for instance peroneus quartus, convex fibular groove, bone spur, and subluxation of the tendon. In our two patients, MRI was not used because the peroneal tendon injuries were strongly suspected on physical examination. However, it should be used to evaluate other associated disorders, which can then be dealt with at the time of the peroneal tendon repair.

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