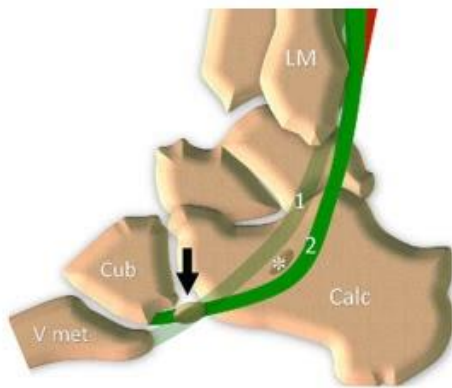


Peroneus Brevis and Longus Tendon Tears by William Renner, M.D.

This will be discussed at the Special Foot Session during at Dr Renner's MSK MR conferences in Oz, beginning next weekend in Sydney!

Go to www.MSKMR.com to register



Arrow points to the Os peroneum within the P. longus Tendon.
1 Peroneus brevis, 2 Peroneus Longus, *Peroneal tubercle

The lateral ankle tendons include the peroneus brevis (PB) and peroneus longus (PL) tendons, which serve to evert the foot. These 2 tendons share the same tendon sheath proximally at the superior peroneal retinacula (SPR) but separate distally into two sheaths at the inferior peroneal retinacula (IPR). The brevis is located anterior to the longus. These tendons run in the retromalleolar groove on the posterior lateral malleolus. The peroneus brevis attaches to the base of the 5th metatarsal bone. The peroneal tubercle separates the PB tendon from the PL tendon.

Peroneal Tendons, Lateral Foot

Peroneus brevis tears make up about 15% of ankle tendon tears; the peroneus longus tendon tears are less common and make up about 5% ankle tendon tears.

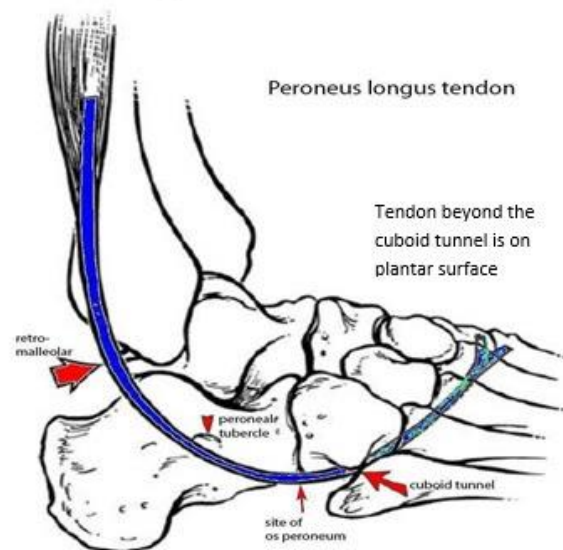
The most frequent lateral tendon tear is a peroneus brevis tendon longitudinal split tear at the level of the retromalleolar groove. The PB forms the "chevron" sign (an inverted v) when it tears.

Peroneus Longus (PL) tendon:

The p. longus tendon takes 3 bends. The PL passes behind fibula in the retromalleolar region then under the peroneal tubercle, then under the cuboid to enter the cuboid tunnel to pass across the plantar aspect of the foot to insert on the plantar aspect of medial cuneiform and 1st

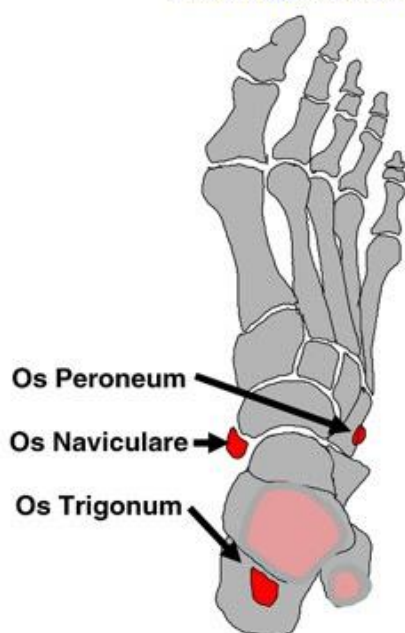
metatarsal.

Hypertrophy of the peroneal tubercle is frequently associated with partial P. longus split tears in the middle of the peroneus longus tendon, with full thickness tears occurring in the cuboid tunnel.

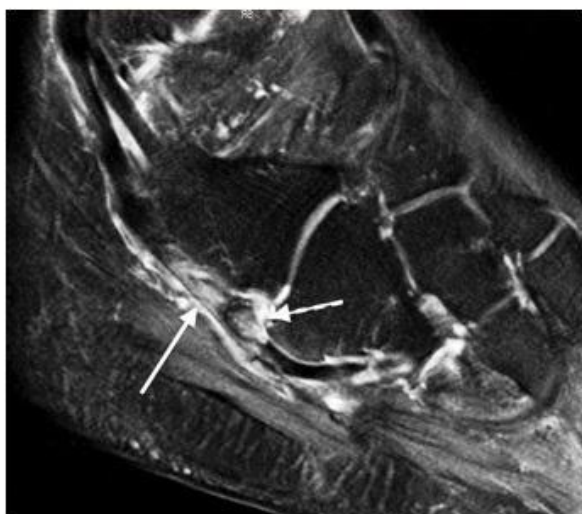


Several factors may predispose to peroneal tendon injuries:

- Os Peroneum
- Convex or flat fibular retromalleolar groove
- Hypertrophy of the peroneal tubercle
- Accessory peroneus quartus muscle
- Low-lying peroneus brevis muscle belly



In about 20% of individuals, the peroneus longus has a sesamoid bone within the tendon, the os peroneum, which can cause pain and lead to tendon tear called the *Painful Os Peroneum Syndrome or POPS*. The POPS syndrome is caused by a fracture of the Os, a tear of the peroneus longus tendon, or entrapment by an enlarged peroneal tubercle laterally. Peroneus brevis and longus tears are best seen on axial PD or T2 images, however, an os peroneum is easiest to see on sagittal images.

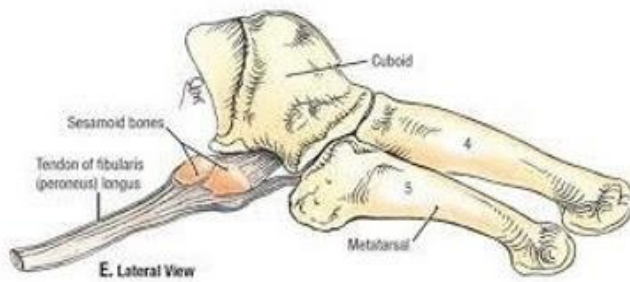


Young athlete with lateral foot pain

PD Fat Sat

Os peroneum within the peroneus longus tendon (short arrow)

High signal within the peroneus longus tendon at the level of os peroneum suggesting partial tear (long arrow).



Os Peroneum with sesamoid bones embedded in P. longus.

The Os peroneum sesamoid may be bipartite or tripartite. A multipartite os may look like an acute fracture. An acute fracture should have irregular margins while smooth and round borders suggests a multipartite Os. Separation of the Os fragments by more than 6 mm suggests an acute fracture. If the separation is only a few millimeters, healing of a fracture or chronic impingement is more likely. A peroneus longus tendon tear may be present and is best seen as high signal on T2-weighted images. Other findings include edema of the bone marrow at the tubercle or hypertrophy of the peroneal tubercle.

If conservative therapy fails, surgery may be performed. Surgery may include debridement of the tendon, removal of the os peroneal and hypertrophied tubercle. Surgery must be done before the tendon completely tears and retracts below the 1st Metatarsal head.

This and other topics will be discussed in Dr. Renner's upcoming MSK MR meeting. Go to www.MSKMR.com for information.

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