

Take home message

Suprascapular entrapment neuropathy is well documented in volleyball players. Here, a brother and sister, both volleyball players of repute, developed identical conditions of entrapment, suggesting selective vulnerability or anatomical variation as a possible explanation.

has not previously been reported and could not be confirmed in my patients.

Thus, the cases presented here open up a new dimension to this well documented syndrome, with a familial tendency probably indicating structural vulnerability or anatomical variance, and more extensive lesion, even outside the region of the suprascapular nerve, from similar causes related to the sport.

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Saphenous nerve injury after fasciotomy for compartment syndrome

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A case is reported of chronic exertional compartment syndrome treated by fasciotomy. The decompression procedure was complicated by injury to the saphenous nerve. The importance of accurate placement of the posteromedial incision line to avoid saphenous nerve injury is highlighted.

Compartment syndrome refers to muscle ischaemia following small vessel occlusion resulting from an increase in local tissue pressure within a closed fascial compartment (fig 1). The condition may be acute (usually secondary to trauma) or less commonly chronic, secondary to exertion. The definitive treatment is surgical decompression of the compartment by fasciotomy. We describe a case of chronic exertional compartment syndrome (CECS) treated by fasciotomy. The decompression procedure was complicated by injury to the saphenous nerve.

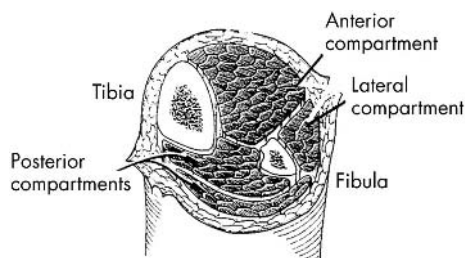


Figure 1 Compartments of lower limb.

CASE HISTORY

A 24 year old kickboxer, with no previous medical history, presented with pain in both shins and posteromedial aspect of his calf muscles, after an increase in his training level. The pain would slowly resolve over hours on cessation of training but would recur when training was restarted. Physical examination failed to show any abnormal clinical signs. Radiographs of tibiae and fibulae were normal. An isotope bone scan excluded any stress fractures. Intracompartmental pressure measurements were made at rest and during a variety of sprinting exercises. The resting measurements were 25 mm Hg in both deep posterior compartments rising to 35 mm Hg in the left posterior compartment during exercise. The resting pressures were 35 mm Hg in both anterior compartments rising to 45 mm Hg in both compartments during exercise. This confirmed the diagnosis of CECS in both anterior and left deep compartments.¹ The patient subsequently underwent bilateral compartmental decompression. His original symptoms resolved, but two weeks after surgery he developed a diffuse burning pain extending from below the knee at the end of the anterior incision, down the medial shin to the region of the arch of the left foot. The pain was persistent. The ankle and knee jerks were both present, and there was no evidence of any weakness. A repeat of the intracompartmental pressure measurements and an isotope bone scan showed no abnormality. Nerve conduction studies found no activity in the left saphenous nerve, indicating that the nerve had been severed. Tinel's sign could not be elicited. The stump of the nerve was identified by nerve conduction studies, but identification was also aided by the presence of a small neuroma which was hypersensitive to the touch. This

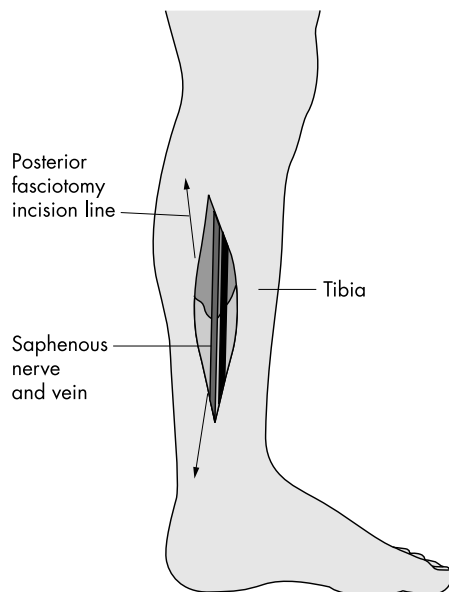


Figure 2 Diagram showing the relation of the fasciotomy line to the saphenous nerve.

stump was blocked with bupivacaine with immediate symptomatic relief.

DISCUSSION

The saphenous nerve is the cutaneous branch of the femoral nerve. Dysfunction of the saphenous nerve causes loss of sensation extending from below the knee down the medial shin to the region of the arch of the foot. Occasionally the infrapatellar branch of the saphenous nerve is damaged as the result of mild trauma or knee operations, producing the syndrome of gonyalgia paraesthetica, which includes sensory loss in a patch of several centimetres diameter below the knee, with intermittent lancinating pains.

Fasciotomy is generally a safe and effective treatment for CECS, with success rates greater than 90%.² Complications include wound infection, haematoma, ulceration, deep venous thrombosis, and muscle herniation.² Injury to the superficial peroneal nerve is recognised, with fasciotomy for anterior and lateral compartments where the incision line lies halfway between the fibula shaft and the tibial crest, directly over the superficial peroneal nerve.

For superficial and deep compartment decompression, a posteromedial incision 5–6 cm long is used 2 cm posterior to the tibial margin. An incision made anteriorly risks damage to the underlying saphenous nerve (fig 2).

The saphenous nerve is in particular danger during operations on varicose veins.³ Removal of the saphenous vein for use as an arterial graft poses the same risk.^{4,5} Saphenous nerve damage occurred in 3% of 421 patients in one operative study.⁶ Cannulation of the saphenous vein at the ankle may injure the nerve and produce permanent painful paraesthesiae.⁷

Many patients with a saphenous neuropathy have relatively trivial numbness in the distribution of this nerve, but severe neuropathic pain can occur. There is often sensory loss and a tender neuroma may be present. The course of the nerve should be palpated carefully for areas of tenderness and a Tinel's sign.

To our knowledge this complication has not been previously reported after fasciotomy for compartment syndrome. This case report highlights the importance of accurate placement of the posteromedial incision line to avoid saphenous nerve injury, which should be added to the list of potential complications of decompression fasciotomy.

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