Outcomes of a Single Incision Technique to Treat Anterior and Deep Posterior Exertional Compartment Syndrome

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No Disclosures
Exertional Leg Compartment Syndrome

• Can affect both the anterior and deep posterior compartments in some patients.

• Clinical assessment is the key to making the diagnosis.

• Intra-compartment pressure testing confirms the diagnosis.

• Patients with deep posterior compartment syndrome will often have associated periostalgia.
Introduction

• A single incision technique has been developed to allow fasciotomies to be performed on the deep posterior and anterior compartments and also to remove the periosteum from the medial border of the tibia to treat the associated periostalgia.

• From January 2006 to December 2012, 152 patients were treated using this single incision technique.
Technique

Surgical Incisions
Identify saphenous vein and nerve

Incise periosteum posteromedial tibia
Elevate periosteum from posterior tibia

Periosteal layer gives access to deep posterior compartment
Deep compartment fully released
Lateral flap lifted extra-periosteally to access anterior compartment
Anterior compartment released along lateral border of the tibia
Study

• January 2006 – December 2012: 152 patients treated with this technique.
• Chart review and follow-up questionnaires.
• 109 patients responded to questionnaire.
• Patients were subdivided into high-performance or non-high-performance groups as far as their sporting activities were concerned, to see if there was a difference.
Results

• The mean postoperative follow-up period was 67 months.

• All patients had preoperatively described pain and/or tightness during exercise. Pain during day-to-day activity was significantly decreased following surgery, as was pain during exercise.

• There was no statistical difference between high-performance and non-high-performance athletes for both exercise and day-to-day pain before and after surgery.

• Complication rates were low. Ten patients required revision operations, 2 of which were directly attributed to unreleased peroneal compartments.
Pain during exercise experienced by high-performance and non-high-performance patients, before and after surgery
Conclusion

• The single incision technique allows excellent visualisation and access to three of the four leg compartments, and the medial tibial periosteum for periosteal debridement.

• It provides a reduction in the number of incisions with no overt sacrifice in post-operative outcomes, complication rates, nor recurrences.

• Similar postoperative outcomes between HP and NHP populations indicate this technique is efficacious in treating CECS in patients with ranging athletic levels.