Minimally Invasive Fasciotomy for Chronic Exercise-Induced Compartment Syndrome

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Introduction/Purpose: Chronic exercise-induced compartment syndrome (CEICS) is a commonly misdiagnosed source of pain. Although CEICS is seen infrequently in the general population, its incidence in high-performance athletes is estimated to be 0.49 per 1000 per year. Delayed diagnosis should be avoided, as irreversible sequelae can result, often causing sports retirement. We present our experience in diagnosis and treatment of CEICS.

Methods: After IRB approval, we conducted a retrospective patient chart review. Patients were included if they were older than 18 years, experienced leg pain after 30 minutes of intense exercise, had a normal-appearing leg MRI, and failed conservative therapy for a minimum of six-months. Patients were excluded if they were diabetic or neuropathic. Significant increments in post-exercise compartment pressure were demonstrated in all patients using Whitesides' measurement technique. All patients were operated on with minimally invasive fasciotomy and followed for a minimum of 6 months. Complications, functional outcomes (FAAM, FAOS & LEFS), and return-to-sports time were documented.

Results: Seven male patients met inclusion criteria, with a mean age of 29 years (20-45). Four patients presented pain in the left leg, and three patients were symptomatic in both the right and left legs. All patients had an incremented pressure differential in the anterior compartment, while two exhibited a concomitant pressure increment in the lateral compartment. Postoperatively there was a significant subjective improvement in pain, functionality, and sports performance. High functional scores (FAAM x=92.4, FAOS x=90.3, and LEFS x=72) were documented at 6 months follow-up. Patients returned to sports at an average of 15 weeks and resumed a pre-surgery sports level at an average of 24 weeks. No complications were observed.

Conclusion: Our results suggest that CEICS can be approached safely through a minimally invasive fasciotomy, with satisfactory functional outcomes and return to sports in the short term follow-up.