

Running miles without the smiles; an exploration of alternative treatment

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Case History

- 42 yo male with 1.5 year history of exertional B/L anterolateral lower leg pain
- Pain occurs with running and fast walking
- Associated painful swelling and “small bulges” at lateral lower legs
- Symptom onset within 8 minutes of activity
- Symptom resolution within 5-10 minutes of rest
- Failed physical therapy
- Only able to run 1.5 miles before needing to stop due to painful “bulges”

Physical Exam

Bilateral Lower Extremities

- Inspection: no erythema, ecchymosis, edema, or abnormalities
- Palpation: no TTP along tibia, gastrocnemius, soleus, Achilles, or lateral legs B/L
- ROM: full AROM and PROM of ankles B/L
- Neurovascular: resisted ROM testing elicits no strength deficit or discomfort
- Special Tests: tuning fork exam negative

Tests and Results

- X-ray B/L lower extremities: normal
- MRI B/L lower extremities: normal
- Compartment Pressure testing:

	Pre-Exercise	Post-Exercise	Pre-Exercise	Post-Exercise
	Left	Left	Right	Right
Anterior	11	81	12	30
Lateral	18	35	17	22
Deep	7	26	6	7
Posterior				
Superficial	13	19	10	20
Posterior				

Diagnostic values: pre-exercise > 25 mm Hg; 1 min post-exercise > 30mm Hg

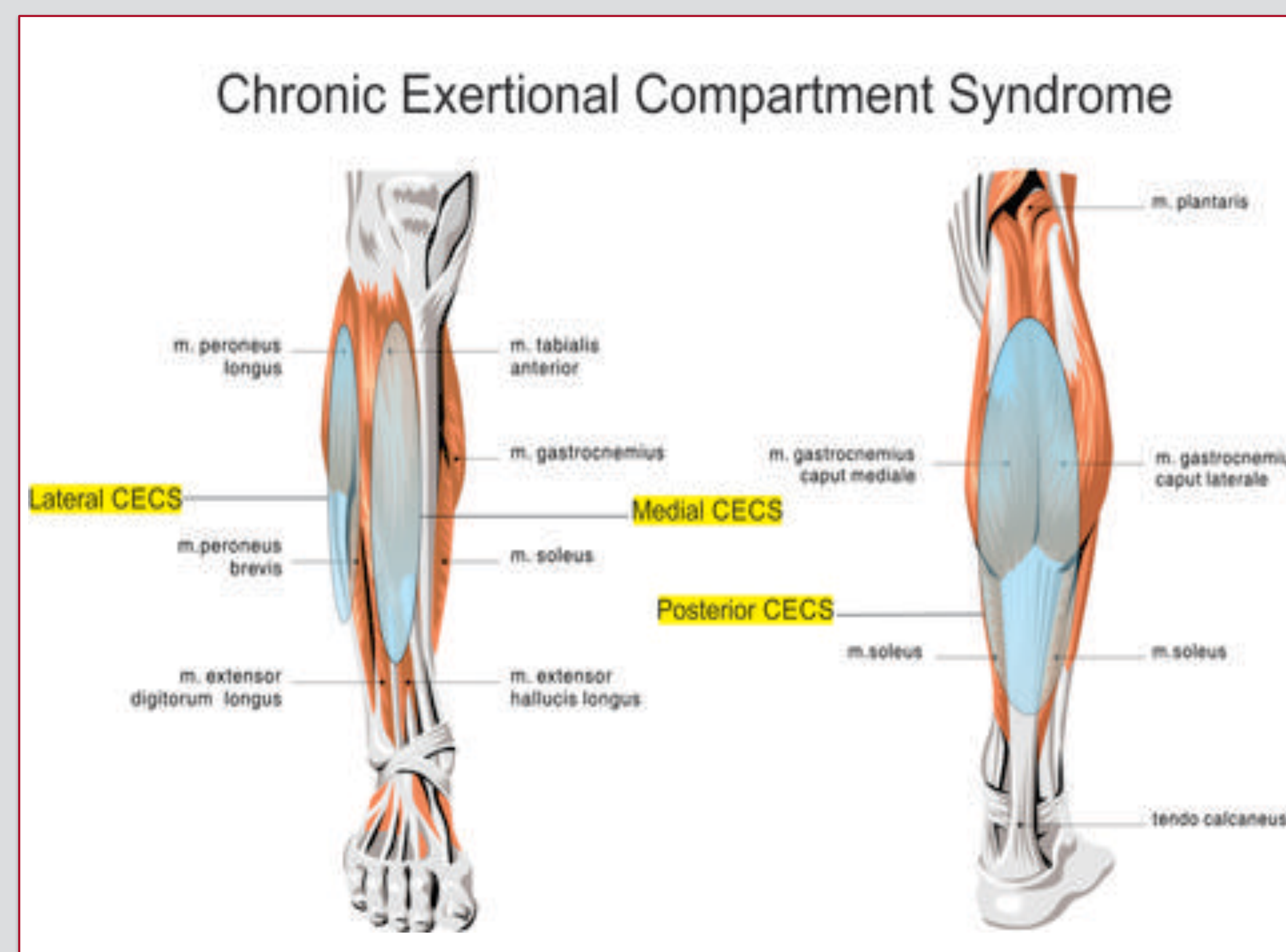
* With compartment testing, patient had 2 cm bulge B/L lower legs 10 cm proximal to the lateral malleoli

Differential Diagnoses

- Chronic Exertional Compartment Syndrome (CECS)
- B/L Lower Extremity Fascial Hernias
- Medial Tibial Stress Syndrome
- Common Fibular Nerve Entrapment
- B/L Fibularis brevis/longus strain

Final Diagnosis

B/L Chronic Exertional Compartment Syndrome with Associated Fascial Hernias



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Outcome

- Counseled on treatment options, including gait retraining, PT, and botulinum toxin injections
- Received total of 50 units of botulinum toxin in each anterior and lateral compartment B/L
- Within 3 weeks noticed 70% improvement
- Subsequently performed gait retraining without pain or recurrence of hernias

Discussion

- Lower extremity fascial hernias may present with or without CECS symptoms
- Muscle tightening and pain after exercise are best signs that suggest CECS
- CECS is reversible, exercise induced ischemia from non-compliant osseofascial compartments
- Numerous case reports support use of botulinum toxin injections for CECS, but little data is available for use in treatment specifically for fascial hernias
- Sparks the question if botulinum toxin should be used for all fascial hernias, even in the absence of CECS symptoms
- Botulinum toxin injections, in combination with gait retraining and PT, offer a viable alternative treatment to fasciotomy

Return to Activity and Follow Up

- For those receiving botulinum toxin injections, expect about 3 weeks before noticing improvement
- After injections, patients should complete gait retraining and PT
- Recommend gradual reintroduction to activity
- If no improvement, consider fasciotomy