Abstracts

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Clinical Significance of Chronic Venous Insufficiency When Treating Chronic Exertional Compartment Syndrome

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Objectives: Chronic venous insufficiency (CVI) may be an under-recognized factor contributing to lower leg pain in individuals diagnosed and treated for chronic exertional compartment syndrome (CECS). Although small series have reported healing of venous stasis ulcers after compartment release procedures, studies have not assessed postoperative symptom relief in individuals with simultaneous CVI and CECS. We review our outcomes in individuals treated with CECS release who were also diagnosed with CVI.

Methods: A retrospective review of our data was performed to identify all patients screened for CVI with duplex ultrasound imaging from January 2013 to December 2013 who underwent CECS release. For individuals who screened positive for CVI, postoperative outcomes were assessed.

Results: Compartment release surgery was performed on 39 patients who were screened for CVI. Of the 39 patients, 23 (59%) tested positive for deep or superficial venous insufficiency, or both. An electronic medical record review produced 100% follow-up. Median follow-up after the first procedure was 19 months. CECS release was performed in 24 patients, in 11 (48%) for recurrent and in 13 (57%) for new-site releases. Venous ablation therapy was performed in eight patients (35%). All patients diagnosed with CVI were placed in medical-grade compression support. Complete symptom relief was present in only four (17%), and 16 (57%) received partial symptom relief. The most common continued symptoms were generalized lower leg pain in eight (33%) and swelling in seven (29%).

Conclusions: Patients with CVI and CECS appear to have less favorable outcomes after compartment release, and expectations must be tempered in this population. Our historic outcomes data suggest a recurrence rate of ~6% and a new-site prevalence of ~20%. The combination of CVI and CECS may be associated with higher rates of recurrence, new symptomatic compartments, and continued pain and swelling. Noninvasive screening for CVI with duplex ultrasound imaging should be considered as part of the workup for apparent symptomatic CECS because it is not always apparent on physical examination. Further long-term outcomes studies are indicated in this unique patient group.

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Intravascular Ultrasound: A Novel Muscular Anomaly Crossing the Supraclavius Muscle: A Novel Muscular Anomaly Crossing the Supraclavius Space Observed in Two Cases of Thoracic Outlet Syndrome

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Objectives: Various anomalous muscles and fibrofascial structures have been described in relation to the anatomy of thoracic outlet syndrome (TOS). We describe here, as observed in two separate cases, a previously undescribed anomalous muscle originating from the superior surface of the clavicle and crossing the supraclavicular space, which we term the supraclavius muscle.

Case history: One patient was a male high school baseball player who underwent right paraclavicular thoracic outlet decompression with subclavian vein patch angioplasty for venous TOS. After mobilization of the scalene fat pad, a “supraclavius muscle” was discovered with its medial attachment to the deep superior aspect of the clavicle, separate from and lateral to the clavicular head of the sternocleidomastoid muscle. Its lateral extent was joined to the trapezius muscle, yielding a distinct muscle ~7 cm long and 2 cm wide (Fig). The second patient was a 60-year-old woman who underwent right supraclavicular thoracic outlet decompression for neurogenic TOS. A similar anomalous supraclavius muscle was encountered, which originated from the superior undersurface of the clavicle and passed laterally toward the trapezius muscle. In this case, the muscle had to be dissected off the anterior aspect of the brachial plexus.
Conclusions: These cases describe a rare anomalous supernumerary muscle in the supraclavicular space. Although the overall clinical significance of the supraclavius muscle is unknown, its occurrence in patients with thoracic outlet syndrome indicates that it can be associated with narrowing of the anatomic space adjacent to the neurovascular structures.

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Management of Spontaneous Isolated Celiac Artery Dissections
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Objectives: Spontaneous celiac artery dissections are rare, and there is no consensus on optimal management. We review our experience with an initial strategy of nonoperative management.

Methods: During the last 8 years, 16 patients presented to our practice with the diagnosis of spontaneous celiac artery dissection and were prospectively entered into a database. Each patient’s clinical course was retrospectively reviewed, and patients were contacted for assessment of any current symptoms.

Results: Four women and 12 men were included. All patients had computed tomography scans documenting a celiac artery dissection. Age at diagnosis ranged from 39 to 76 years. Five patients presented with abdominal pain, and 11 patients were diagnosed incidentally. Six patients had hypertension, one had a concomitant dissection of the superior mesenteric artery, one had type IV Ehlers-Danlos, and another had a Marfanoid habitus but Marfan syndrome had not been confirmed. Initially, all patients were treated with observation because none had threatened end organs. Patients presenting on aspirin or Plavix were continued on these medications, but no patients were started on antiplatelet therapy or anticoagulation because of their dissection. Three patients continued to have abdominal pain and eventually underwent celiac artery stenting. They were started on antiplatelet therapy postprocedure. Pain remained stable or improved after intervention. One patient had aneurysmal degeneration of the celiac artery along with the splenic and a renal artery and underwent surgical repair. No other patients have required intervention.

Eight patients were able to be contacted for follow-up. The average time from the initial diagnosis to follow-up for the entire cohort was 48 months (range, 1-104 months). None have abdominal or back pain related to their celiac dissection, have lost weight, or have had to change their eating habits. One patient died of other causes and was found to have a patent celiac artery at autopsy.

Conclusions: Celiac artery dissection can be safely managed initially with observation. If abdominal pain is persistent, endovascular stenting can be done for aneurysmal degeneration or occlusion. Long-term anticoagulation does not appear necessary in these patients.

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Thoracic Outlet Syndrome in a Child Presenting As Syncope
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Objectives: Arterial thoracic outlet syndrome (TOS) is a rare clinical entity in the pediatric population. It is most commonly associated with cervical ribs and distal arm ischemic symptoms. We present a case report of an 11-year-old boy who presented to the vascular surgery clinic with positional syncope to arm maneuvers 2 to 3 times per day with associated headaches and dizziness.

Case history: Carotid duplex with provocative maneuvers demonstrated compression of bilateral subclavian and vertebral arteries in standard positions and the patient’s symptomatic position. During testing, the patient had a witnessed syncopal episode. Upper extremity arterial plethysmography with thoracic outlet maneuvers further confirmed the diagnosis of bilateral TOS with a >30 mm Hg drop in pressure with the arms abducted and externally rotated at a 120° angle. A chest x-ray image did not reveal an anomalous or cervical first rib. Bilateral staged supraclavicular first rib resection and anterior scalenectomy was performed, which demonstrated large bilateral anterior scalene muscles were causing compression of the subclavian and vertebral arteries. On the 30-day follow-up, the patient had complete resolution of his symptoms with return to normal activity.

Conclusions: This is the first reported case of bilateral arterial TOS in a child presenting with syncopal events and also without an anomalous cervical rib treated with a supraclavicular approach.

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Stent Graft Treatment of AAA With Preservation of the Inferior Mesenteric Artery
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Fig 1. Fenestration technique. CTA, Computed tomography angiography; IMA, inferior mesenteric artery.

Fig 2. Snorkel technique. IMA, Inferior mesenteric artery.