

paresthesias, swelling or erythema. No prior cardiac or pulmonary disease except for mild hypertension managed with a low sodium diet. No history of smoking. Radiographs were negative for any significant abnormalities. Venous ultrasound did not show any thrombus formation. She continued to complain of persistent posterior knee pain and calf spasms in spite of several weeks of physical therapy.

Setting: An outpatient physical medicine and rehabilitation clinic at a tertiary medical center.

Results: She was subsequently referred to our clinic for evaluation of intractable posterior knee pain and leg spasms thought to be related to a muscle strain. Our neurologic examination was essentially normal. She had a non-antalgic gait and was able to perform 5 toe raises without pain. There was mottling and dryness of her skin at the feet with decreased dorsalis pedis pulses bilaterally. The left gastrocnemius was tender to palpation. Slight pain associated with resisted plantar-flexion. Given her history and physical examination findings we obtained vascular studies, which demonstrated severe arterial occlusive disease in the left lower extremity.

Discussion: After carotid ultrasound did not reveal any significant stenosis, she was started on a walking program. A follow-up appointment was scheduled with vascular medicine to discuss angioplasty or stent placement as a treatment option if her pain did not improve after 3 months. Unfortunately, the patient had a ST-elevation myocardial infarction 6 weeks into her walking program.

Conclusions: This case underscores the importance of including ischemic disease in the differential diagnosis for leg muscle pain and spasms and even more so when the history and examination findings are not suggestive of a muscle strain injury. This case also raises the question of whether patients with ischemic disease should undergo cardiac evaluation before embarking on an exercise program.

Poster 195

Posttraumatic Atlanto-Axial Rotatory Fixation in an Adult Presenting as Torticollis.

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Disclosures: A. Dholakia, None.

Patients or Programs: A 21-year-old woman with torticollis.

Program Description: A 21-year-old woman presented with a 6-month history of torticollis after a severe motor vehicle accident as a restrained front seat passenger. She was previously diagnosed with spasmodic torticollis, which led to a multiple ineffective treatments, including muscle relaxants, chiropractic care, physical therapy, and botulinum toxin injections. She was seen by a neurosurgeon who ordered a dynamic CT scan for suspicion of atlantoaxial instability but failed to follow-up after completion of radiological imaging.

Setting: Outpatient orthopedic center.

Results: Approximately 6 months after her injury, the patient was seen in our office for initial consultation of torticollis. Our clinical findings revealed left rotational torticollis, significant decrease in range of motion, and normal neurologic examination. Her dynamic CT scan was reviewed showing a right C1-C2 facet joint subluxation without significant change upon rotation. She was diagnosed with atlantoaxial rotatory fixation (AARF) and underwent an open reduction and internal fixation of the C1-C2 vertebrae. At her 3-week follow-up visit, there was resolution of her torticollis and a physical therapy program focusing on range of motion, flexibility and strengthening was implemented.

Discussion: AARF is a fixed subluxation or dislocation in the cervical spine involving the inferior atlantal and superior axial facets. This is a rare condition more frequently found in children with minor trauma or upper respiratory infections, inflammatory conditions, or predisposition to ligamentous laxity. AARF is seldom reported in adults and proper diagnosis is often delayed. Torticollis is a typical presentation and neurologic injury is uncommon. Dynamic cervical CT scan can aid in diagnosis. Treatment options include conservative care, immobilization, traction, manual reduction, and surgery. Surgery is indicated when there is transverse ligamentous injury, spinal instability, neurologic injury, or failure of conservative measures.

Conclusions: AARF in an adult is rare and torticollis is a typical presentation. AARF should be considered in an adult with torticollis after a posttraumatic event.

Poster 196

Predicting Chronic Stinger Syndrome Using the Mean Subaxial Space Available for the Cord Index (MSCSAC): A Case Report.

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Disclosures: J. Kendall, None.

Patients or Programs: A 21-year-old Division I collegiate football player with a "stinger."

Program Description: The patient, who had a history of several prior stingers, presented with 5 days of persistent left neck and shoulder pain associated with paresthesias and upper extremity weakness. This injury was caused by left lateral neck flexion and extension. Examination and electrodiagnostic evaluation was consistent with a left C5 radiculopathy, but MRI of the cervical spine was "normal." The calculated mean subaxial cervical space available for the cord index (MSCSAC) score was 3.2 mm.

Setting: University outpatient clinic.

Results: Patient had complete resolution of symptoms and returned to play.

Discussion: A "stinger," also known as a "burner" is a transient, reversible peripheral nerve injury of the upper extremity caused by injury to the cervical spine and shoulder,

usually occurring during contact sports. A wide range of clinical courses have been described, however, pain lasting longer than 24 hours is generally uncommon. The MSCSAC is a novel tool to predict chronic stinger syndrome. It is calculated by subtracting the sagittal diameter of the spinal cord from the disk level sagittal diameter of the spinal canal at the C3-6 levels and then averaging these values. A cutoff of <4.3 mm has been shown to predict a greater than 13-fold increase in risk of developing chronic stinger syndrome. The MSCSAC score of 3.2 mm correlated with the patient's history of multiple stingers. In discussing return to play, it was emphasized that he is at greater risk for future stinger injuries based on MSCSAC index.

Conclusions: The MSCSAC is a novel, sensitive tool that may be used to predict chronic stinger syndrome.

Poster 197

Progressive Radiculopathy Due to Cervical Arteriovenous Fistula: A Case Report.

Andrew Illig, DO (Rusk, New York, NY); Jeffrey M. Cohen, MD.

Disclosures: A. Illig, None.

Program Description: A 64-year-old woman was referred to rehabilitation clinic with a 2-year history of progressive left arm weakness without pain or sensory disturbances. Physical examination was significant for atrophy of the left deltoid, biceps, scapular, and parascapular muscles. Muscle strength testing was 0/5 in the deltoid and biceps, 3/5 in the triceps, and 4/5 in the wrist extensors, wrist flexors, and hand intrinsic muscles. Electrodiagnostic testing showed neuropathic changes in the distribution of the C5, C6, and C7 nerves and related paraspinal muscles. Radiological workup revealed an extradural vertebral artery arteriovenous (AV) plexus fistula at the level of C2-3 compressing the anterolateral cervical cord from the skull base extending down within the spinal canal through C6-7. The enlarged vessels also filled the C2-3 through C6-7 neural foramina causing root compression. The patient was referred to vascular surgery but declined surgical treatment and began a rehabilitation program designed to preserve function and learn compensatory strategies.

Setting: Urban tertiary care center.

Results: Multilevel cervical radiculopathy due to vertebral artery AV fistula.

Discussion: Spinal AV fistulas are a rare cause of radiculopathy and myelopathy. This case reviews the radiologic and electrodiagnostic workup, the classification system, and the treatment options for spinal AV fistulas.

Conclusions: Dural AV fistulas are the most common spinal cord vascular formation and can cause progressive or sudden neurologic deterioration due to mass effect or hemorrhage. An accurate diagnosis is important because AV fistulas can be a reversible cause of radiculopathy and myelopathy.

Poster 198

Puddle Slip Injury Resulting in a Complete Proximal Avulsion of the Semimembranosus Tendon in a Nonathlete: A Case Report.

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Disclosures: C. M. Roque-Dang, None.

Patients or Programs: A 42-year-old female nursing assistant.

Program Description: The patient complained of severe right hip region and lower limb pain after she slipped on a puddle of water. She stated that her right knee was flexed, her ankle was dorsiflexed, and she recalled hearing a "pop" while slipping. She complained of "burning" posterior and medial thigh pain with radiation to the posterior ankle and noted resolution of her initial right hip pain. On physical examination, she had an antalgic gait, ecchymoses were visualized over the posterior thigh, and she had decreased sensation to light touch in the distribution of the sciatic nerve.

Setting: Outpatient private practice office.

Results: Musculoskeletal ultrasound examination revealed architectural distortion of the biceps femoris and semimembranosus muscles with surrounding edema. A subsequent MRI showed complete avulsion tear of the semimembranosus tendon from the ischial tuberosity. At subsequent follow-ups, the patient's sciatica resolved as local edema subsided. An orthopedic surgery consult was obtained and, at 1-month postinjury, the patient underwent a right proximal hamstring tendon repair with good outcome.

Discussion: Complete proximal origin avulsions of the hamstring tendons are rare and usually result from injuries with a flexed hip and extended knee. Most of these injuries occur in young athletes and several cases involve water skiers. In nonathletes, there is no consensus regarding conservative versus operative management. Few cases exist where concomitant temporary sciatica is described.

Conclusions: Reported is an unusual case with an atypical presentation of a complete proximal hamstring tendon avulsion in a nonathlete and necessitating surgical repair for improved function.

Poster 199

Radiculopathy Secondary to Diskal Cyst in the Adolescent Lumbar Spine: A Case Report.

Arun T. Gupta, MD (Hospital for Special Surgery, New York, NY); David Hoffman; Christopher Lutz; Gregory E. Lutz, MD.

Disclosures: A. T. Gupta, None.

Patients or Programs: A 16-year-old athletic man.

Program Description: This patient originally presented to our clinic with a 3-week history of progressive right posterolateral lower extremity pain with radiation into the hip and proximal lateral thigh pain. Multiple physicians,