Parsonage Turner Syndrome in the Collegiate Athlete: A Clinical Case Report

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Background: A 21-year-old collegiate male lacrosse player reported red streaking up his right arm, starting mid-forearm, extending proximally into the axillary fossa, and the lateral chest. The athlete had no other symptoms of infection (e.g., fever, chills). He was referred to the local emergency room on March 18th, where he was diagnosed with cellulitis. The emergency room physician cleared him to return to play. Ten days later (March 28th), during a game, the athlete suffered a direct blow to the right side of his head by an opponent’s knee. He went down on the field, complaining of unilateral radiating sharp pain from his neck to his fingertips and was tender to palpate at cervical vertebrae 5/6. The athlete had range of motion, strength, and sensory deficits in the affected side and was not allowed to return to play. At this time, we discovered the athlete failed to report sustaining a similar injury fifteen days prior to this. The next day, March 29th, the athlete’s chief complaint was surprisingly not the brachial plexus injury, but the return of red streaking on his right arm. He was referred back to the hospital, where they completed a metabolic panel and blood culture. Results came back positive for cellulitis yet again and he was prescribed a different antibiotic. Differential Diagnosis: Viral infection, cellulitis, cervical nerve root irritation, Parsonage Turner syndrome (aka acute viral brachiplexopathy).

Treatment: The college team physician examined the athlete on March 30th and suspected idiopathic erythema of his upper medial arm and observed visible muscle atrophy of his deltoid and paraspinal musculature on the affected side. The physician also suspected that the athlete may have Parsonage Turner syndrome (PTS) and referred him to a neurologist who ordered an MRI on April 7th. The results displayed mild spondylosis with a minute osteophyte formation on the right C5/6 vertebrae. After a month, the shoulder musculature was still atrophied, so the physician then referred the athlete to a new neurologist for a baseline electromyography (EMG) test on May 22nd. He suspected an injury to the C5/6 disc. The neurologist reviewed the EMG and diagnosed the athlete with acute denervation to the muscles innervated by the C5/C6 nerve root. The athlete was excluded from competitive sports until he regained normal function. After multiple diagnostic tests, the exclusionary diagnosis was PTS. PTS is a neurological disorder that attacks the brachial plexus and results in wasting and weakness of muscles. At a follow-up appointment on August 28th, the athlete underwent another EMG that showed the muscles innervated by the C5/C6 nerve root had regained normal strength, size, motor and sensory function. The athlete has resumed weight training and functional activities with the team this Fall. He will officially compete in lacrosse in the upcoming Spring. Uniqueness: Most practicing clinicians are not familiar with PTS and the many ways it can present itself clinically. The pathology is usually an exclusionary diagnosis that normally appears as an infection with abnormal signs and symptoms and acute muscle weakness. Conclusions: The final diagnosis was PTS that first presented itself as a viral infection because of an abnormality of the immune system. Due to ongoing muscle degeneration, the impact during the game significantly affected the athlete, which led to observable symptoms. Relevant Evidence: Although 89% of patients with PTS notice improvements in pain, sensation and atrophy over the course of three years, 33% of patients report the presence of chronic pain and functional deficits at a six-year follow-up.† There is currently little to no evidence on PTS in the athletic population because it is such an uncommon condition. Word Count: 599