Parsonage-Turner Syndrome in a Female Middle/High School Cheerleader: Level 4 Case Study

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Background: Our subject is a 13 year-old female cheerleader with no previous history of health issues. Shortly after our subject's exposure to an influenza virus that resulted in bilateral ear infections, she began experiencing moderate tenderness and pain in her right shoulder extending distally to her wrist. These symptoms were initially diagnosed as tendinitis. The pain progressively increased, prompting the patient to seek further medical evaluation. Her practitioners ruled out tumors and disk pathology through a negative CT scan. An electromyographic evaluation and nerve conduction test revealed widespread denervation of her shoulder. After these tests, a diagnosis of Parsonage-Turner Syndrome (PTS), also referred to as idiopathic brachial plexopathy or neuralgic amyotrophy, was made. PTS is a rare disorder consisting of a complex network of symptoms with an acute onset of shoulder pain, usually unilaterally, often followed by progressive neurologic deficits of motor weakness and dysesthesias. Since PTS is axonal, the nerve conduction study did not reveal any abnormalities. Only the EMG (needle) portion of the exam confirmed her denervation. **Differential Diagnosis:** rotator cuff tear, adhesive capsulitis, Parsonage-Turner syndrome, discogenic nerve root compression, amyotrophic lateral sclerosis, tumor of nerve root, infection. **Treatment:** The patient was prescribed corticosteroids, analgesics, muscle relaxers in an attempt to manage pain. Regular rehabilitation visits were utilized to regain strength and nerve function the shoulder girdle. Despite treatments, moderate to severe shoulder pain continued long-term following her diagnosis, resulting in continued loss of function and muscle atrophy of the area. She had to use her uninvolved left arm at times to assist the involved right side. Her physician prescribed rehabilitative exercises to restore range of motion and function for the right upper extremity. Transcutaneous Electrical Nerve Stimulation (TENS) was also utilized in the treatment. She has had constant pain and dysfunction for several years that limited her activity level to the point she was unable to participate as a cheerleader. Finally, five years later as an 18 year old, her symptoms had improved to the point that she could return to cheerleading. However, our subject did need to occasionally suspend her activities after a flare up of her symptoms. She continues to cheer but does require interferential stimulation and massage from her high school athletic trainer for pain relief. She also continues to have occasional electrodiagnostic evaluations and continues her rehabilitative exercise regime. **Uniqueness:** The exact cause of PTS is idiopathic. Researchers suspect that most cases are due to an autoimmune response following exposure to an illness or environmental factor The onset of PTS has also been linked to various possible triggers, such as infections, surgery/medical procedures, vaccinations, childbirth or strenuous exercise. One study shows 25% of PTS patients had a viral illness before

PTS symptoms occurred, and 15% of PTS patients had recently received an immunization. PTS seems to affect men at a slightly higher rate than women. One study indicates a ratio of 11:9, while another concludes that the ratio may be as high as 11:5. One unique feature of this case is the reinnervation typically occurs 6-12 months following onset. However, in our subject's case, her symptoms have lasted for over five years. **Conclusion:** Parsonage-Turner Syndrome's rare nature and lack of research and clinical studies has revealed many unknowns and unanswered questions about the disease. The prognosis for PTS varies greatly. Our subject's residual complications have lasted longer than the norm. However, newer literature suggests that these complications are more common than previously believed. PTS is a rare and often disabling problem that athletic trainers need to consider when evaluating unique upper extremity conditions. **Word Count:** 593