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Evaluation and Treatment of the Water-polo player with Anterior Glenohumeral Instability

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Background: Glenohumeral (GH) instability is a common shoulder condition with a range of characteristics from laxity within the GH joint to complete dislocation of the humerus. The GH joint is held in place by static and dynamic stabilizers that need to be functioning appropriately to center the humerus in the glenoid fossa. Acquired shoulder instability is defined as chronic stress of the humerus in an externally rotated and abducted position on the shoulder joint from repetitive overhead (OH) sports causing anterior instability of the shoulder. Diagnosing shoulder instability is reliant on the patient's history and physical examination findings during testing. Using a combination of anterior apprehension, relocation, sulcus sign, and load and shift tests are recommended in the clinical examination to effectively diagnose GH instability. Current evidence treating non-operative shoulder instability starts with restoring ROM with the use of mobilization techniques, followed by strengthening exercises targeting the serratus anterior (SA), rhomboids, deltoids, and rotator cuff to improve overall stability. The purpose of this case is to show that manual therapy followed by specific therapeutic exercise is effective in treating acquired anterior shoulder instability in an adolescent water polo player. **Patient:** The subject is a seventeen-year-old female water polo player who has been suffering from left shoulder pain for two months. Her pain is intermittent throughout the day but worsens with swimming and the late cocking phase of her throw. She has no specific mechanism of injury (MOI). She rated her pain a dull and achy 5/10 at rest and a sharp 9/10 pain while throwing during practice. Her pain starts on the anterior aspect of the

shoulder at rest and moves to the superior/posterior aspect during movement. She complains about neck stiffness with any movement along with shoulder pain. She reported no radiating symptoms down her back or arm. She reported no popping or clicking within the shoulder. She was unable to sleep on the left side and is frequently woken up due to the pain. Her goal for treatment is to learn how to manage her pain if the pain comes back after being treated. She also wants to be able to practice and participate in games pain-free. **Treatment:** Treatment consisted of manual intervention and therapeutic exercise throughout four sessions. Manual techniques performed included: soft tissue stripping of the pectoralis (pec) minor, latissimus dorsi (lats), upper trapezius (traps), and subscapularis (subscap), inferior and posterior mobilization GH mobilizations, thoracic gapping and manipulations. The goals of manual therapy was to improve the patient's ROM and postural deficits. The posterior mobilizations were used to increase flexion and internal rotation while the inferior mobilizations were utilized to increase abduction and flexion at 0-60 degrees. Therapeutic exercises targeting thoracic mobility, internal and external rotation. While strengthening and stability exercises were aimed towards the rotator cuff, deltoid, serratus anterior, and rhomboids. **Outcomes:** By the end of all four sessions every deficit was addressed. She has been able to fully participate in practices and games completely without pain. Her functionality score progressed from a 49% to a 96.3% in two weeks. All the patient's goals were completed showing increased strength and stability within the GH joint. **Conclusion** During the four-session rehabilitation program, this case showed that acquired anterior GH instability can be treated with the previous techniques to increase stability within the dynamic stabilizers of the GH joint. Clinical bottom line: The results shown in this case of a water-polo player with acquired anterior GH instability showed that manual therapy and