THE SHOULDER CLINIC
OF IDAHO P.L.L.C.

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The stiff and painful shoulder
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In the world of shoulder complaints stiffness and pain prevail. Codman originally referred to this symptom complex as "frozen shoulder", and many continue to use this nomenclature today. However, the term frozen shoulder can be non-specific and may not elucidate the root of the problem for many patients. Not all "frozen" shoulders are the same, and proper treatment may be unique. An understanding of the natural history, associated co-morbidities, and etiology is essential when designing a proper treatment plan.

The stiff and painful shoulder can be thought of as arising from two potential etiologies: Idiopathic or acquired. Idiopathic frozen shoulder has been characterized by Neviaser using the term "adhesive capsulitis" which is a distinct entity from acquired shoulder stiffness, such as that following shoulder trauma (e.g. fracture, soft tissue injury, shoulder surgery).

Adhesive capsulitis is an idiopathic condition of the shoulder manifesting as both pain and stiffness. Pain results initially from an inflammatory capsular infiltrate that then progresses to capsular restriction, thickening, fibrosis and joint volume restriction manifesting as profound loss of glenohumeral motion. This condition is most commonly seen in females between the ages of 40 and 60 years. It is more commonly seen in the non-dominant extremity, but can involve both extremities. It is a condition which is not associated with overuse or manual labor, but rather is more commonly found in workers with sedentary positions. Literature supports associations with non-shoulder surgery, immobility, and with co-morbid conditions such as diabetes, cardiovascular disease, cervical disc disease, thyroid disease, pulmonary conditions, neurological conditions and breast cancer treatment. Symptoms may last a year or more with the characteristic finding of slight residual loss of shoulder motion at resolution.

One could argue that the most successful treatment of adhesive capsulitis is time, as the natural history of this condition is thought by many to be self-limited. However, a stretching program performed multiple times a day, with or without formal physical therapy, is the mainstay of treatment and is effective in the vast majority of patients. Avoiding strengthening exercises, such as thera-bands commonly prescribed by therapists, is essential to success as strengthening an already stiff and painful shoulder serves only to exacerbate symptoms promoting further stiffness and a delayed recovery.

Palliative treatments such as medication and injections help alleviate acute symptoms but may not have a significant impact on overall outcome. Given the early inflammatory nature of this condition non-steroidal mediation, oral steroids and intra-articular steroid injections are commonly used interventions and would appear to have promise as successful treatments, however, most studies point to a transient reduction in pain, without a significant improvement in outcomes with long-term follow up.

For those patients who struggle to regain motion and relief despite compliance with a daily stretching program, surgical intervention can be considered. Manipulation under anesthesia and arthroscopic capsular release are the most commonly employed methods. Though manipulation under anesthesia is a safe alternative for adhesive capsulitis, arthroscopic treatment affords a more controlled and precise release of the capsule offering the added benefit of inspection of the glenohumeral joint in a minimally invasive fashion. Some authors have suggested improved outcomes in terms of pain relief and function following arthroscopic treatment when compared to manipulation with mid- and long-term follow up. Essential to a successful surgical treatment plan requires institution of, and compliance with, a daily stretching program post-operatively and successful management of co-morbid conditions, such as diabetes.

Cases of acquired stiffness may also find benefit from oral anti-inflammatory agents, intra-articular steroids and physical therapy. However, in the setting of refractory acquired stiffness where adhesions have developed as a result of fracture, soft tissue injury and/or prior surgery open and arthroscopic releases are preferred to manipulation under anesthesia. In the setting of prior surgery or trauma blind manipulation carries a greater risk of damage to prior surgical repairs performed (e.g. rotator cuff repair) or healing fractures (e.g. greater tuberosity). Arthroscopic or open lysis of adhesions allows one to assess the integrity of the prior surgery or healing fracture while offering a more controlled restoration of motion.

In summary, stiffness and pain about the shoulder are common complaints. Non-operative treatment for idiopathic stiffness is successful the vast majority of cases, whereas carefully controlled surgical release may be preferable for acquired refractory stiffness following trauma and/or surgery. No treatment has proved to be definitive, in fact, the literature supports many forms of treatment, both operative and non-operative. Management of comorbid treatable conditions, such as endocrinopathies, and compliance with a daily stretching program is essential to success.

About the Author: Joseph Lynch, M.D., is certified by the American Board of Orthopaedic Surgery (ABOS), possesses a Certificate of Added Qualification in Sports Medicine from the ABOS, and maintains a full-time surgical practice. Dr. Lynch is a graduate of Harvard University, finished first in his medical school class at Oregon Health Sciences University, and completed a shoulder & elbow fellowship at the University of Washington. He has published numerous peer-review articles and has spoken nationally on a variety of topics concerning orthopaedic surgery.

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