Effectiveness of an open capsular shift with rehab in reducing MDI incidence in college female athletes: A Critically Appraised Topic

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Context: Multidirectional Instability (MDI) of the shoulder is a ligamentous laxity in more than one direction, most predominantly in the inferior and anterior directions; the glenohumeral capsule having the ability to sublux/dislocate in more than one direction (Cody et al). Neer and Foster created the open capsular shift procedure in 1980 upon finding that typical unidirectional surgical techniques did not fully eliminate the incidence of re-instability. It allows precise soft tissue balancing on all sides of the glenohumeral joint (Cordasco et al). Turkel et al, reported that the open capsular shift was found to offer stability in varying functional positions, while maintaining motion. Conservative rehab for MDI consists of PRE targeted at the rotator cuff and scapular stabilizers, while also containing neuromuscular exercises (Longo et al). Lephert et al found that athletes with chronic shoulder instability have increased deficits in proprioception and surgical stabilization normalizes proprioceptive sensibility (Longo et al).

Focused Clinical Question: Is an open capsular shift combined with rehabilitation more effective in reducing re-instability than rehabilitation alone in collegiate female athletes diagnosed with MDI? Data Sources: The literature was searched for studies of Level of Evidence IV or higher that investigated the effectiveness of an open capsular shift to reduce the occurrence of re-instability. A search was conducted using databases via the Quinnipiac University online library, including: PubMed, Cochrane Library, CINAHL, SPORTSDiscuss, ScienceDirect. Additional resources obtained via reference list review and individual searches. Keywords and search limits included, MDI, female athletes, open capsular shift, conservative rehab.

Study Selection: Searches were filtered so that only articles with their full text available were shown. Evidence Appraisal: The Oxford Centre for Evidence-based medicine (CEBM) was used to grade the level of evidence presented. Search Results: Three systematic reviews looking at the effectiveness of open capsular shifts and conservative treatments options were included. A Level II Prospective Cohort Study, looking at biomechanical analysis of conservative rehabilitation was included. One additional systematic review was also considered. Data Synthesis: Longo et al found that 21% of patients undergoing rehabilitation required subsequent surgery to correct their MDI. 7.5 % of patients who underwent an open capsular shift had re-instability. Jacobson et al found 11.7% who underwent an open capsular shift had re-instability. Poor conservative rehabilitation outcomes were found in two of seven studies Warby et al investigated. Of the two studies, one found that 44% underwent surgery and the other found that 66% had poor outcomes to rehabilitation and 70% underwent surgery. Nyiri et al found that open capsular shifts normalize the muscular activity pattern of the shoulder and were maintained for at least 4 years compared to rehabilitation alone. Bak et al reviewed 26 shoulders, where 23 were scored excellent on the Rowe Score post surgery (88%). Evidence Quality: The level of evidence for this conclusion based on the CEBM was graded as a B. Conclusion: All articles considered looked at the effectiveness of an open capsular shift and conservative rehabilitation in reducing the incidence of an MDI episode. With conservative rehabilitation, normal kinematic parameters cannot be obtained, nor is there enough research to validate the effect that conservative rehab has on a shoulder diagnosed with MDI (Nyiri et al and Warby et al). According to the research, the open capsular shift remains one of the best surgical options for MDI. The surgery along with its rehabilitation has shown to help normalize kinematic parameters along with normalizing muscular activation patterns (Nyiri et al). According to the evidence reviewed, an open capsular shift is more effective than rehabilitation alone to reduce re-instability. Word Count: 587