

## A Prospective Outcome Evaluation of Humeral Avulsions of the Glenohumeral ligament (HAGL) Tears Repairs in an Active Population

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**Objectives:** Humeral Avulsions of the Glenohumeral ligament (HAGL) are an infrequent and underappreciated cause of shoulder instability and dysfunction. The purposes of this study are to prospectively evaluate the presentation, clinical history and surgical outcomes of patients with HAGL tears.

**Methods:** Over an eight-year period, patients with failed non-operative shoulder dysfunction with a confirmed HAGL tear on MR Arthrogram, who elected to undergo surgical treatment were prospectively investigated. Independent variables were patient demographics, clinical presentation, physical examination findings, and arthroscopic findings. The dependent variables assessed included return to work and activity rates, pre-operative and post-operative patient reported outcomes (ASES, SANE, WOSI scores) and independent physical examinations. Statistical analysis was via Student's t-test and significance set at  $p < .05$ .

**Results:** A total of 23 of 24 patients (96%) were evaluated at a mean of 32.1 months (Range 24-68 months). There were 11 females (48%) and 12 males (52%) at a mean age of 24.2 years (Range 18-33). Mechanism of injury was core training (cross-fit or equivalent) in 48%, pull-ups in 22%, and unknown in 30%. The primary complaint was pain in 82%; 20% of patients complained of instability symptoms. There were 12 patients with anterior HAGLs, 8 patients with reverse HAGLs and 3 with combined anterior and posterior lesions. 10 patients had both HAGL and labral tears, 13 with isolated HAGL. 9 patients underwent arthroscopic surgical repair and 14 underwent an open surgical repair. There was a clinically and statistically significant improvement in patient reported outcomes (WOSI=54%, SANE=50%) improved (WOSI=83%, SANE=87%,  $p < 0.01$ ). 21 of 23 (91%) patients returned demonstrated patient satisfaction and a return to full activity.

**Conclusion:** This study demonstrates patients with symptomatic HAGL tears present with pain and shoulder dysfunction, that anterior and reverse HAGL tears are nearly distributed equally. After surgery, patients demonstrated statistically and clinically significant improved outcomes, a predictable return to activity and patient satisfaction. Additional work is necessary to determine optimal treatments, especially with combined HAGL and labral tears.

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