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Preservation of the Comma Tissue Prevents Long-Term Supraspinatus Tear Progression After Arthroscopic Isolated Subscapularis Repair: A 10-Year MRI Follow-up Study

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Introduction and Background

Visualization during arthroscopic repair of isolated full-thickness subscapularis tears can be improved either by preserving the continuity of the subscapularis–supraspinatus margin (in-continuity technique) or by releasing the comma tissue to expose the footprint (margin-disruption technique). However, the long-term clinical and radiologic consequences of intentionally disrupting this margin remain unclear. This study evaluated whether preservation of tear margin continuity influences tendon integrity, supraspinatus tear progression, and clinical outcomes over ≥ 10 years.

Material and Method

From 2008 to 2015, 154 consecutive patients who underwent arthroscopic repair of isolated full-thickness subscapularis tears (Lafosse grade \geq II) were screened. Forty-eight patients met the criteria of (1) healed subscapularis tendon confirmed on 6-month MRI/MRA and (2) availability of ≥ 10 -year follow-up MRI. Patients were categorized into two groups based on the visualization technique used. Clinical outcomes (VAS, SSV, ASES, UCLA, ROM) were assessed preoperatively and at 1, 2, and ≥ 10 years. Tendon integrity, healing quality, fatty infiltration, supraspinatus tear progression, and osteoarthritis development were evaluated on serial MRI.

Results

At a mean follow-up of 11.9 ± 1.2 years, both techniques demonstrated comparable subscapularis healing at the 6-month MRI assessment. However, The margin-disruption group showed a higher rate of supraspinatus tear progression (45.8% vs. 8.3%, $p = 0.003$) and a greater incidence of osteoarthritis progression (37.5% vs. 12.5%, $p = 0.046$) compared with the in-continuity group. Clinical outcomes also became significantly worse in the margin-disruption group beginning at 2 years postoperatively and remained inferior through the final follow-up. Importantly, once the subscapularis tendon was confirmed as healed at 6 months, no cases of retear were observed at 10 years.

Conclusions

Preserving the subscapularis–supraspinatus margin during arthroscopic repair leads to superior long-term outcomes by reducing supraspinatus tear progression and degenerative changes. A 6-month postoperative MRI reliably predicts long-term tendon durability, and once early healing is confirmed, subscapularis structural failure is unlikely at 10 years.

