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- Abstract No. : F-0228
- Category : Shoulder
- Detail Category : Rotator cuff

MRI-based Evaluation of Patch Augmentation in Massive Rotator Cuff Tears

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Introduction and Background

Massive rotator cuff tears are associated with high rates of structural failure following repair, and patch augmentation has been introduced to support tendon healing in these lesions. However, objective evidence regarding its contribution to postoperative structural integrity remains limited. This study evaluated structural outcomes after patch-augmented arthroscopic rotator cuff repair (ARCR) using a postoperative MRI-based classification system.

Material and Method

A retrospective review was performed on patients who underwent ARCR with patch augmentation for massive rotator cuff tears and completed postoperative MRI follow-up at ≥ 3 months. The mean age was 70.3 years, and the average tear size was 5.27 cm; six patients demonstrated two-tendon involvement. The first postoperative MRI was obtained at a mean of 99.8 days. MRI findings were classified as intact repair, patch continuity with detached cuff (defined as a patch that remains attached to the footprint while maintaining continuity with a detached rotator cuff), or complete re-tear.

Results

Postoperative MRI demonstrated intact repair in 22 of 28 patients (78.6%). 5 patients (17.9%) showed patch continuity with detached cuff, and only 1 patient (3.6%) showed a complete re-tear. 8 patients underwent MRI follow-up beyond 1 year; among them, 7 maintained an intact repair, and 1 demonstrated patch continuity with detached cuff. Notably, this patient's findings showed minimal change compared with the 3-month MRI, suggesting a potential stabilizing effect of the patch.

Conclusions

At approximately 3 months postoperatively, MRI-based evaluation demonstrated intact repair in 78.6%, patch continuity with detached cuff in 17.9%, and complete re-tear in 3.6% of patients. These results compare favorably with previously reported re-tear rates for massive tears repaired without patch augmentation, which have been documented at approximately 40% or higher.



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Figure & Table 1.

Category	Criteria
Inclusion Criteria	<ul style="list-style-type: none">• Massive rotator cuff tear ($\geq 5\text{cm}$ or ≥ 2 tendons) on preoperative MRI• Underwent arthroscopic rotator cuff repair with patch augmentation• Postoperative MRI ≥ 3months follow-up
Exclusion Criteria	<ul style="list-style-type: none">• No preoperative MRI• No postoperative MRI or MRI follow-up < 3months• Small/medium sized tears• Tendon transfer procedures (ex. LDT, LTT)• Postoperative infection

Table 1 : Inclusion and Exclusion Criteria

Figure & Table 2.

MRI-based Structural Outcomes	Number	Percentage
Intact	22	78.57%
Retear but preserved patch continuity	5	17.86%
Complete retear	1	3.57%
Total	28	100%

Table 2 : MRI-based Structural Outcomes (n=28)