

Research Article**Functional Outcome Post Arthroscopic Shoulder Rotator Cuff Repair Using Double Row Technique: A Prospective Clinical Study*****Dr sakalesh Hosamani¹, Dr Aishwarya Patil², Dr. Sushal Shanthakumar³**Assistant Professor , Department of orthopedics , Raichur institute of medical sciences
Raichur karnatakaAssistant professor, Department of paediatrics , Raichur institute of medical sciences
Raichur KarnatakaM.B.B.S, M.S (Orth), Fellow ISAKOS (Germany), Fellow AGA(Germany), Consultant, Department of
Orthopedic Surgery, Manipal Hospital, Bangalore-17**Corresponding Author: Dr sakalesh Hosamani****Abstract**

Background: Rotator cuff tears represent a primary etiology for shoulder pain and functional limitation in middle-aged and elderly cohorts [cite: 9]. Although arthroscopic double-row configurations biomechanically approximate the native footprint more closely than single-row setups, intermediate-term clinical validation remains imperative [cite: 9]. This investigation assesses functional results following arthroscopic double-row rotator cuff repair over a six-month duration [cite: 9]. Methods: A prospective analysis tracked 50 patients presenting with full-thickness tears managed via arthroscopic double-row fixation [cite: 9]. Scoring utilized the Constant-Murley metric preoperatively, at 30 days, and at 180 days post-procedure, measuring pain, daily activities, motion range, and dynamometer strength [cite: 9]. Results: Mean participant age was 56.7 years, showing a 56% male distribution and 78% degenerative etiology [cite: 9]. Total Constant-Murley scores advanced significantly from 38.9 baseline to 58.5 at one month and 78.1 at six months ($p < 0.001$) [cite: 9]. Complications totaled 6%, consisting of one retear and two superficial wound issues [cite: 9].

Conclusion: Arthroscopic double-row repair yields marked, statistically reliable recovery in comfort, mobility, and power with minimal morbidity [cite: 9].

Keywords: *Rotator Cuff Tear; Arthroscopic Repair; Double Row Technique; Constant-Murley Score; Shoulder Function [cite: 9].*

Introduction

Rotator cuff tears constitute a substantial share of upper extremity ailments, responsible for roughly 35% to 50% of shoulder complaints among older adults [cite: 9]. The condition triggers chronic discomfort, muscular weakness, and restricted mobility [cite: 9]. While surgical interventions have shifted toward all-arthroscopic methods [cite: 9], maximizing footprint restoration remains a core surgical aim [cite: 9]. Biomechanical evidence indicates that double-row systems recover footprint anatomy better and withstand greater ultimate loads than single-row alternatives [cite: 9]. This prospective clinical study examines recovery metrics and safety profiles following double-row arthroscopy [cite: 9].

Methodology

Fifty patients with MRI-verified full-thickness tears satisfying study inclusion benchmarks were enrolled at a major referral center [cite: 9].

Inclusion Criteria: Adults with confirmed full-thickness tears undergoing arthroscopic management [cite: 9].

Exclusion Criteria: Prior revision procedures, neurological impairments, or advanced fatty infiltration [cite: 9].

Clinical Evaluation and Scoring: Preoperative assessments captured clinical records and

Parameter	Preoperative	1 Month Post-op	6 Months Post-op	t-value	p-value
Pain Score (/15)	6.60 ± 2.93 [cite: 9]	9.40 ± 1.64 [cite: 9]	14.2 ± 2.34 [cite: 9]	12.7 [cite: 9]	<0.001* [cite: 9]
ADL Score (/20)	3.68 ± 1.10 [cite: 9]	10.34 ± 2.61 [cite: 9]	15.9 ± 2.55 [cite: 9]	15.1 [cite: 9]	<0.001* [cite: 9]
ROM Score (/40)	25.4 ± 4.03 [cite: 9]	30.1 ± 2.94 [cite: 9]	33.1 ± 3.02 [cite: 9]	6.50 [cite: 9]	<0.001* [cite: 9]
Power Score (/25)	3.38 ± 1.05 [cite: 9]	8.76 ± 1.91 [cite: 9]	14.84 ± 3.16 [cite: 9]	14.4 [cite: 9]	<0.001* [cite: 9]
Total Constant Score (/100)	38.9 ± 5.67 [cite: 9]	58.5 ± 5.65 [cite: 9]	78.1 ± 8.44 [cite: 9]	22.0 [cite: 9]	<0.001* [cite: 9]

Aggregate Constant scores climbed significantly from 38.9 to 78.1 by six months ($p < 0.001$) [cite: 9]. All domains—pain reduction, daily function, mobility, and strength—exhibited notable gains [cite: 9]. While 100% of participants had poor metrics initially, 86% achieved good or excellent grades at final review [cite: 9]. Complications stayed low at 6% [cite: 9].

Discussion

Double-row configurations aim to maximize tendon-bone contact area and structural healing [cite: 9]. Our findings match prior literature by Arora et al. and Carbonel et al., proving that double-row repair secures dependable functional recovery [cite: 9]. Tear magnitude and patient age showed inverse relationships with final

Cofield tear grades [cite: 9]. Constant-Murley scoring gauged outcomes pre-procedure, at 30 days, and at 180 days [cite: 9]. Range of motion and dynamometer-based abduction force were documented [cite: 9].

Results

All fifty individuals completed the follow-up timeline [cite: 9]. Participant mean age registered at 56.7 years with 56% males [cite: 9]. Right shoulder involvement predominated at 84%, and degenerative tears made up 78% of instances [cite: 9]. Table 1 outlines score progression across evaluation intervals [cite: 9].

scores, consistent with biological healing principles [cite: 9]. The 6% complication frequency confirms overall safety under disciplined rehabilitation regimens [cite: 9].

Conclusion

Arthroscopic double-row fixation delivers consistent functional recovery, pain alleviation, and mobility restoration for full-thickness rotator cuff tears with minimal adverse events [cite: 9].

References

1. Yamamoto A, Takagishi K, Kawakami J, et al. Prevalence and risk factors of a rotator cuff tear in general population. J Shoulder Elbow Surg. 2010;19(1):116-120 [cite: 9].

**Dr sakalesh Hosamani et al / Functional Outcome Post Arthroscopic Shoulder Rotator Cuff Repair
Using Double Row Technique: A Prospective Clinical Study**

2. Sugaya H, Maeda K, Matsuki K, Moriishi J. Repair integrity and functional outcome after arthroscopic double-row rotator cuff repair. *J Bone Joint Surg Am.* 2007;89(5):953-960 [cite: 9].
3. Carbonel I, Martinez AA, Aldea E, Ripalda J, Herrera A. Outcome and structural integrity of rotator cuff after arthroscopic treatment of large and massive tears with double row technique. *Adv Orthop.* 2013;2013:231298 [cite: 9].
4. Arora M, Soni Y. Grade and short term functional outcome of rotator cuff repair in Indian population. *J Orthop Sports Med.* 2020;2:129-139 [cite: 9].
5. Constant CR, Murley AH. A clinical method of functional assessment of the shoulder. *Clin Orthop Relat Res.* 1987;(214):160-164 [cite: 9].
6. Vikram A, Anshuman K. Functional outcome of arthroscopic rotator cuff repair. *Int J Orthop Sci.* 2020;6(2):79-85 [cite: 9].
7. Lafosse L, Brozka R, Toussaint B, Gobezie-R. The outcome and structural integrity of arthroscopic rotator cuff repair with use of the double-row suture anchor technique. *J Bone Joint Surg Am.* 2007;89(7):1533-1541 [cite: 9].