



شبكة المعلومات الجامعية  
التوثيق الإلكتروني والميكرو فيلم

# بسم الله الرحمن الرحيم



**MONA MAGHRABY**



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التوثيق الإلكتروني والميكروفيلم



# شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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# جامعة عين شمس

## التوثيق الإلكتروني والميكروفيلم

### قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



### يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



**MONA MAGHRABY**



# **Superior Capsular Reconstruction for Massive Irreparable Cuff Tears: A Systematic Review for Clinical & Functional & Radiological Outcomes**

*A Systematic Review*

*For Partial Fulfillment of Master Degree In  
Orthopedic Surgery*

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# *List of Contents*

Title	Page No.
List of Tables .....	i
List of Figures.....	ii
List of Graphs.....	v
List of Abbreviations .....	vi
Introduction.....	1
Aim of the Work.....	4
Review of Literature .....	5
Patients and Methods .....	87
Results.....	92
Discussion.....	112
Summary .....	124
Conclusion .....	127
References .....	128
Arabic Summary.....	١

## *List of Tables*

Table No.	Title	Page No.
<b>Table (1):</b>	Dimensions of posterosuperior cuff insertions.....	10
<b>Table (2):</b>	Hamada classification .....	44
<b>Table (3):</b>	Study characteristics.....	92
<b>Table (4):</b>	The surgical procedure.....	93
<b>Table (5):</b>	Comparison between pre and postoperative VAS score .....	96
<b>Table (6):</b>	Comparison between pre and postoperative ASES score.....	98
<b>Table (7):</b>	Comparison between pre and postoperative forward extension range .....	100
<b>Table (8):</b>	Comparison between pre and postoperative forward external rotation.....	102
<b>Table (9):</b>	Comparison between pre and postoperative internal rotation .....	104
<b>Table (10):</b>	Comparison between pre and postoperative acromiohumeral distance.....	106
<b>Table (11):</b>	Percentage of graft failure .....	108
<b>Table (12):</b>	Percentage of complication .....	110
<b>Table (13):</b>	Percentage of reoperation .....	111



# *List of Figures*

Fig. No.	Title	Page No.
<b>Figure (1):</b>	Anatomy of shoulder joint.....	5
<b>Figure (2):</b>	a) the angle of inclination b) angle of retroversion of humeral head.....	7
<b>Figure (3):</b>	A) pear shaped glenoid with a wider B) Scapular and glenoid version. C) Glenoid fossa's retroversion D) Glenoid fossa's superior tilt .....	8
<b>Figure (4):</b>	Rotator cuff muscles .....	8
<b>Figure (5):</b>	Dissection into the central portion of the supraspinatus tendon revealing its broad footprint .....	10
<b>Figure (6):</b>	Posterior view of a cadaver showing infraspinatus and teres minor .....	11
<b>Figure (7):</b>	A) The supraspinatus is shown to insert into the superior facet and the infraspinatus. B) The infraspinatus occupies about half of the superior and all of the middle facet of the greater tuberosity .....	11
<b>Figure (8):</b>	Nerve supply of rotator cuff muscles .....	12
<b>Figure (9):</b>	Balanced force couples in coronal and transverse planes .....	14
<b>Figure (10):</b>	Soft tissue stabilizers including the glenoid labrum, glenohumeral ligaments, and the glenohumeral joint capsule.....	15
<b>Figure (11):</b>	Glenoid labrum and glenohumeral ligaments.....	16
<b>Figure (12):</b>	Coracohumeral ligament.....	17
<b>Figure (13):</b>	A) intact superior capsule B)detached superior capsule.....	20
<b>Figure (14):</b>	a) superior view b) posterior view of rotator cable complex.....	22
<b>Figure (15):</b>	A) rotator cuff tear can be modeled after a suspension bridge. (B) The free margin corresponds to the cable, and the anterior and posterior attachments of the tear correspond to the supports at each end of the cable's span.....	22



## *List of Figures (Cont...)*

Fig. No.	Title	Page No.
<b>Figure (16):</b>	A) The superior stability of the glenohumeral joint with an intact superior capsule B) Significant superior translation of the humeral head after the superior capsule is resected.....	23
<b>Figure (17):</b>	Arthroscopic view of the rotator interval via posterior portal .....	24
<b>Figure (18):</b>	Acromial morphologies .....	25
<b>Figure (19):</b>	Os-acromiale .....	26
<b>Figure (20):</b>	Collin classification .....	29
<b>Figure (21):</b>	Topography of tears in sagittal planes.....	30
<b>Figure (22):</b>	Rotator cuff tear pattern .....	31
<b>Figure (23):</b>	External lag test.....	36
<b>Figure (24):</b>	Hornblower test.....	36
<b>Figure (25):</b>	Lift off test. ....	38
<b>Figure (26):</b>	Belly press test .....	38
<b>Figure (27):</b>	Bear hug test.....	39
<b>Figure (28):</b>	American shoulder elbow surgeon score.....	40
<b>Figure (29):</b>	Visual analogue scale.....	42
<b>Figure (30):</b>	Normal AHD measured as the smallest distance from the inferior surface of the acromion to the superior aspect of the humerus .....	43
<b>Figure (31):</b>	Hamada classification.....	45
<b>Figure (32):</b>	Patte classification.....	46
<b>Figure (33):</b>	Goutallier classification.....	47
<b>Figure (34):</b>	Full thickness rotator cuff tear .....	48
<b>Figure (35):</b>	Partial repair of MIRCT by margin convergence sutures.....	52
<b>Figure (36):</b>	Subacromial balloon spacer arthroplasty .....	53
<b>Figure (37):</b>	LD tendon transfer .....	55
<b>Figure (38):</b>	Pectoralis major tendon transfer.....	56
<b>Figure (39):</b>	Lower trapezius transfer.....	57
<b>Figure (40):</b>	Patch augmentation rotator cuff repair .....	59

## *List of Figures (Cont...)*

Fig. No.	Title	Page No.
<b>Figure (41):</b>	Reversed total shoulder arthroplasty .....	60
<b>Figure (42):</b>	Superior capsular reconstruction .....	63
<b>Figure (43):</b>	A) Lateral decubitus B) Beach -chair .....	64
<b>Figure (44):</b>	The viewing portals .....	65
<b>Figure (45):</b>	Double interval slide technique repair of a massive, contracted, immobile crescent rotator cuff tear. ....	68
<b>Figure (46):</b>	Load sharing rip stop construct for repair .....	68
<b>Figure (47):</b>	A) glenoid preparation. B) greater tuberosity preparation .....	69
<b>Figure (48):</b>	Trajectory of anchors by 3 spinal needles.....	70
<b>Figure (49):</b>	Medial glenoid anchoring with monk hood effect .....	71
<b>Figure (50):</b>	Deltopectoral approach.....	72
<b>Figure (51):</b>	Medial row of suture anchors are placed on the humeral head. ....	72
<b>Figure (52):</b>	Fascia lata harvesting .....	73
<b>Figure (53):</b>	Measurement of graft size .....	74
<b>Figure (54):</b>	Dermal allograft.....	75
<b>Figure (55):</b>	The flexible cannula .....	75
<b>Figure (56):</b>	Introduction of graft through cannula .....	76
<b>Figure (57):</b>	A) double pulley technique. B) Zipline pushing instrument.....	77
<b>Figure (58):</b>	A medial double-pulley construct.....	78
<b>Figure (59):</b>	Side to side posterior suture between infraspinatus and graft.....	79
<b>Figure (60):</b>	Additional layer of (A) polypropylene mesh being fashioned inside (B) the folded fascia lata .....	82
<b>Figure (61):</b>	PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analysis) flow diagram for study selection .....	90

## *List of Graphs*

<b>Graph No.</b>	<b>Title</b>	<b>Page No.</b>
<b>Graph (1):</b>	Pre and postoperative VAS score.....	97
<b>Graph (2):</b>	Pre and postoperative ASES score .....	99
<b>Graph (3):</b>	Pre and postoperative forward extension .....	101
<b>Graph (4):</b>	Pre and postoperative external rotation .....	103
<b>Graph (5):</b>	Pre and postoperative internal rotation.....	105
<b>Graph (6):</b>	pre and postoperative AHD.....	107
<b>Graph (7):</b>	Graft integrity .....	109
<b>Graph (8):</b>	Complication rate .....	110
<b>Graph (9):</b>	Reoperation rate .....	111

## *List of Abbreviations*

<b>Abb.</b>	<b>Full term</b>
<i>AHD</i> .....	<i>Acromiohumeral distance</i>
<i>ASES</i> .....	<i>American Shoulder and Elbow Surgeons</i>
<i>CHL</i> .....	<i>Coracohumeral ligament</i>
<i>GFDI</i> .....	<i>Global fatty degeneration index</i>
<i>HDA</i> .....	<i>Human dermal allograft</i>
<i>IGHL</i> .....	<i>Inferior glenohumeral ligament</i>
<i>IRCT</i> .....	<i>Irreparable rotator cuff tears</i>
<i>IS</i> .....	<i>Infraspinatus</i>
<i>LD</i> .....	<i>Latissimus dorsi</i>
<i>MCID</i> .....	<i>Minimally Clinically Important Difference</i>
<i>MRCT</i> .....	<i>Assive rot ator cuff muscle tears</i>
<i>RI</i> .....	<i>Rotator interval</i>
<i>ROC</i> .....	<i>Receiver operating characteristics</i>
<i>SCR</i> .....	<i>Superior capsular reconstruction</i>
<i>SS</i> .....	<i>Supraspinatus</i>
<i>Sub</i> .....	<i>Subscapularis</i>
<i>VAS</i> .....	<i>Visual analogue score</i>

## INTRODUCTION

**M**assive rotator cuff muscle tears (MRCT) are defined as a full thickness tear of at least two tendons or a tear measuring greater than five centimeters in the coronal plane<sup>1</sup>. They are estimated to comprise approximately 20% of all rotator cuff tears and 80% of recurrent tears<sup>2</sup>.

In rotator cuff surgery, the term “irreparable” has had an inconsistent definition during the past few decades. In the past, they used the term “irreparable” to mean “operatively irreparable”; indicating that an operative repair had been attempted and no or only partial repair was possible<sup>3</sup>. Before the year 2000, a rotator cuff that was either (A) predicted to be irreparable based on preoperative characteristics or (B) predicted to have a poor outcome from rotator cuff surgery; regardless of the possibility of achieving actual intraoperative repair<sup>4</sup>. Many surgeons found that many seemingly irreparable tears turn out to be easily repairable with the right combination of reduction and/ or mobilization techniques. So, the surgeons should avoid the term “irreparable” unless this determination has been made intraoperatively<sup>5</sup>.

The development of tendon retraction with inelasticity, muscle atrophy and fatty infiltration with MRCT make the repair very challenging. These findings are detected by MRI

and X-rays. The findings are evaluated by the grading system of Goutallier et al and Hamada classification.<sup>6</sup>

Various surgical treatments have been developed, including debridement and subacromial decompression<sup>7,8,9</sup>, partial repair<sup>7,8,9</sup>, transposition of the subscapularis tendon<sup>7,8,9</sup>, transplantation of the teres major muscle<sup>7,8,9</sup>, supraspinatus muscle advancement<sup>7,8,9</sup>, deltoid flap reconstruction<sup>7,8,9</sup>, latissimus dorsi transfer<sup>7,8,9</sup>, pectoralis major transfer<sup>7,8,9</sup>, grafting to the torn tendon<sup>7,8,9</sup> and reverse total shoulder arthroplasty<sup>7,8,9</sup>.

Currently there appears to be no consensus regarding the best option for treating the MIRCT<sup>10</sup>.

For elderly patients with MIRCT, reverse shoulder arthroplasty is a reliable surgical option for improving active shoulder elevation above shoulder level with pain relief; and accordingly improving daily function and return to low-intensity activities<sup>11</sup>.

However, reverse shoulder arthroplasty is thought, by some surgeons, to be suboptimal for young and/or active patient due to the high complication rates that have been reported<sup>12</sup>.

A new surgical technique “superior capsular reconstruction” (SCR) has been developed; which is based on the idea that patients with MIRCT have a defect of the superior

capsule<sup>7</sup>. This results in loss of superior stability of glenohumeral joint and manifests as pain from subacromial impingement, muscle weakness in the shoulder joint and limitation of arm elevation<sup>13,14</sup>. The superior capsular reconstruction provides a passive biological constraint to superior humeral head.

In this technique, either “a fascia lata autograft”<sup>15</sup> or “dermal allograft”<sup>16</sup> are used to be attached medially to the glenoid superior tubercle and laterally to the greater tuberosity. Graft healing is the key to improve shoulder function and relieve pain after SCR<sup>15,16</sup>.