بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

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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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Andrew Magdy Youssef

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

INTRODUCTION

Massive 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[1]. They are estimated to comprise approximately 20% of all rotator cuff tears and 80% of recurrent tears[2].

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[3]. 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[4]. Many surgeons found that many seemingly irreparable tears turn out to be easily reparable 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[5].

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.[6]

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

Currently there appears to be no consensus regarding the best option for treating the MIRCT[10].

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[11].

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[12].

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[7]. 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[13,14]. The superior capsular reconstruction provides a passive biological constraint to superior humeral head.

In this technique, either "a fascia lata autograft"[15] or "dermal allograft[16]" 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[15,16].