بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

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Comparison between Fracture Head Radius Fixation versus Excision

A Systematic review and meta-analysis For Partial Fulfillment of Master Degree in Orthopedic Surgery

By

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List of Abbreviations

Abb.	Full term
3D CT	Three dimension computerized tomography
A-MCL	Anterior bundle of medial collateral ligament
DIP	Distal interphalangeal
IOM	Interosseous membrane
PIN	Posterior interosseous nerve
PIP	Proximal interphalangeal
P-MCL	Posterior bundle of medial collateral ligament
RCL	Radial collateral ligament

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INTRODUCTION

Fractures of radial head constitutes almost 2-4% of all the fractures. It is the most common type of elbow fractures. It usually occurs following a trauma or fall on the outstretched hand where the force of impact is transmitted to radial head through forearm where the radial head is forced into the humeral capitellum. Radial head fractures ranges from non-displaced or minimally displaced (Type I), displaced or angulated (Type II), comminuted and displace (Type III), radial head fracture with elbow dislocation (Type IV) [(1)].

The diagnosis is usually done by Plain X-rays. 3D CT may also be done for better evaluation and further delineation of fragment in comminuted fractures. It can also identify associated injuries in cases of complex fractures involving multiple bones. Complications associated with these fractures may include compartment syndrome, wound infection, persistent pain due to intra articular injuries and arthritis and restricted movements [(3)].

Treatment of radial head fractures depends upon the factors like age of the patient, type of fracture and associated complications if present [(3)]. According to mason classification, the undisplaced fractures (type I) are usually treated by arm sling or immobilization in plaster cast followed by mobilization and physiotherapy. The management of displace or angulated (type II) fractures is controversial and there is no consensus on

the best treatment protocol. Many researchers have come up with the studies reporting good results following surgical as well as conservative management of isolated, displaced but stable radial head fractures [4].For management of comminuted fractures of radial head (Type III) the treatment options available include screw fixation of individual fragments or excision of radial head in cases where repair is not possible [5,6].

Excision of the head of the radius is commonly performed in patients with comminuted fractures of the radial head. Many authors have, however, reported a high complication rate, including pain and instability of the elbow, new bone formation at the site of resection, proximal radial migration and cubitus valgus. Significant wrist symptoms are associated with subluxation of the inferior radioulnar joint [2].

Once popular isolated radial head excision was later found to be associated with elbow instability and hence it was initially treated by excision followed by silicone implants but these implants were associated with several implant related complication so, researchers were again more inclined towards open reduction and internal fixation of comminuted fracture of radial head. Open reduction and internal fixation though was satisfactory for 2 or 3 simple fragments it gave very unsatisfactory results in cases of comminuted fractures of radial head where there were more than 3 fragments [6].

Many researchers came up with the options of silicone, polyethylene and various metal implants but all these implants though gave satisfactory results in short time they were associated with the complications like loosening and wear requiring a revision surgery in long term follow up [7].