

Old un reduced posteromedial elbow dislocation: A rare case report

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Abstract

Posteromedial elbow dislocation is a rare injury when compared to posterolateral elbow dislocations. In developing countries like India old unreduced dislocations are not uncommon due to lack of medical facilities in villages. When elbow dislocation are old, management options include conservative, closed or open reduction, arthrodesis, excision arthroplasty and total elbow replacement. Treatment option depends mainly duration of injury, available functional range of movement and nature of articular surfaces. This is a case report of such old unreduced elbow dislocation which was posteromedial in 49 year old female who initially got treated with traditional bonesetter resulting in stiffness and pain. We managed patient with open reduction of elbow through posterior approach and strict postoperative rehabilitation. Functional assessment with Mayo Elbow Performance Score showed excellent results.

Introduction

Elbow dislocations are common injuries in adults. They are usually posterior. Among them posterolateral dislocations comprise major part of dislocations (80%) [1]. Posteromedial elbow dislocations are rare when compared to posterolateral dislocations. Posterior elbow dislocations can be associated with fractures around elbow which are called 'complex dislocations' or can be 'simpler dislocations' without any fractures [2]. Most common associated fractures with elbow dislocations among adults are epicondylar fractures which could be either medial or lateral epicondyle fractures, radial head fractures or coronoid fractures [3]. Most of the elbow dislocations are stable injuries unless associated with concurrent fractures no matter how small they are which makes them inherently unstable like in terrible triad of elbow [4]. Management wise too, elbow dislocations are easily reducible in cases of simple dislocations under sedation or general anaesthesia unless there are soft tissue interpositions or entrapment of fractured bony fragments in the joint. However, all these medical treatment would be possible in hospital setup with all available facilities

and trained medical faculty. Most places of developing countries like India, major bony injuries are treated with traditional bonesetters in village areas due to lack of easily accessible medical facilities. Hence most of injuries are improperly treated resulting in hazardous complications. In this article, we report about such case of unreduced posteromedial elbow dislocation which was of six month old without fracture around elbow which is rare injury and how we managed it surgically to get good anatomical reduction and functional outcome as assessed by Mayo Elbow Performance Score.

Case report

49 year old female came to our institute Sri Lakshmi Narayan Institute of Medical Science, in July 2014 with a history of injury around left elbow around six months back. On proper history elicitation we found mode of injury was fall on outstretched hand in a bathroom. Immediately after the injury patient underwent treatment with traditional bonesetters where bandages were applied for a period a month. She later continued to have pain and stiffness which brought her to our institute after six months post trauma. On examination there was swelling and deformity with tenderness at elbow joint. Three point bony relations between tip of olecranon, lateral and medial epicondyle were altered. There was 30° of flexion deformity with further flexion upto 60°. Supination-pronation movements were 20° each. Skin condition around elbow appeared good and there was no distal neurovascular deficit. X-ray showed posteromedial dislocation of elbow joint (Figure 1). Computed tomography (CT) scan (Figure 2) showed no features of old malunited fracture. Patient was posted for open reduction after thorough preoperative workup. Posterior approach to elbow was applied. Without triceps splitting elbow joint was approached from medial and lateral side of triceps. Ulnar nerve was isolated. Coronoid, radial and olecranon fossae were filled up with fibrous tissues and were removed. There was no articular irregularities. We were able to achieve congruent open reduction without triceps lengthening. To achieve stability thick radiocapitellar Kirschner-wire was passed. Limb was immobilized for three weeks postoperatively with plaster of paris. Mobilization was started at three

weeks after Kirschner-wire removal. Patient was put on vigorous active and active assisted range of movement exercises. Functional assessment with Mayo Elbow Performance score at six months showed a score of 95(excellent)(Figure 3). Radiological assessment at 4, 12 and 36 weeks showed no signs of resubluxation of joint or myositis ossificans (Figure 4).

Discussion

Elbow joint is second most commonly dislocated joint after shoulder[5,6]. Elbow dislocations are classified as posterior, anterior, lateral, medial or divergent depending on ulnar relation to distal humerus. Posteromedial elbow are very rare compared to posterolateral dislocations. That too old unreduced posteromedial dislocations are less reported. Elbow dislocations are also classified as simple or complex injuries depending on associated fractures around elbow[2]. Associated fractures become increasingly important for management since they increase instability. 'Terrible triad' involves a radial head fracture, a coronoid tip fracture and a dislocation of the elbow and that's when elbow will be highly unstable[4]. Mechanism of injury involves fall on outstretched hand when a combination of axial loading supination/external rotation of the forearm with posterolateral based valgus force results in elbow dislocation which is commonly seen in posterolateral elbow dislocation. In case of posteromedial elbow dislocation, a varus posteromedial force is responsible. In our case too patient fell on her outstretched hand in a bathroom with probable varus posteromedial force which resulted in posteromedial elbow dislocation.

Neglected and unreduced elbow dislocations are not uncommon in developing countries like India[7,8]. There is a habit of people approaching to traditional bone setters immediately after trauma because of easy accessibility of those in villages and lack of education on health issues. In our case too patient approached to local bone setter immediately after trauma and continued treatment there for a month. In fresh fractures CT is useful investigation especially to identify minute fractures which will be missed in plain radiographs. In older dislocations too, CT plays important role in identifying malunited fractures and to know articular irregularities. In our case, there were no such findings. Treatment options for old unreduced elbow dislocation depends mainly on duration of injury, available range of movements and nature of articular surfaces[9,10,11,12,13]. Treatment options include conservative management, closed or open reduction,

arthrodesis, excisional arthroplasty or total elbow replacement. Conservative management can be tried if patient has got functional range of movements from 30°-130° with an arc of 100°[11]. Our patient had flexion deformity of 30° with further flexion up to 60°(arc of only 30°). Hence we decided for surgical management. Closed reduction is generally indicated till three weeks post trauma. After 3 weeks, closed reduction will be difficult due to surrounding soft tissue contractures and also has increased chance of fracture while manipulation due to juxtaarticular osteoporosis. Hence open reduction is advised in such cases[9,10]. Most studies suggest open reduction for elbow dislocation up to 3 months and other studies show that it can be done till two years[14,15]. In older dislocation with damaged articular surfaces other surgical options have to be considered like elbow arthroplasty, excisional arthroplasty, or arthrodesis[9,11,12,13]. Total elbow arthroplasty is to be considered in elderly patients since it has limited life span and is cost-prohibitive. Excision arthroplasty is easy option but it will give highly unstable elbow and hence discouraged now a days. In our patient duration of injury was six months and intraoperatively we found out articular surfaces to be in good condition and hence we decided to go ahead with open reduction procedure.

Different surgical approaches have been described for open reduction of elbow in case of old dislocations. Most commonly used is Speed's posterior approach with triceps lengthening procedures like V-Y plasty to facilitate reduction[16]. Krishnamoorthy et al[17] showed combined medial and lateral approach without triceps lengthening is better alternative to posterior approach. We used posterior approach without triceps lengthening since it was not required for us to facilitate reduction. We opened both medial and lateral side of the joint with aggressive dissection without triceps splitting since studies show that triceps splitting approach may cause fibrosis in the muscle restricting flexion in the future.

Conclusion

Posteromedial elbow dislocation is one rare injury. Old unreduced posteromedial elbow dislocation when properly managed with open reduction and strict postoperative physiotherapy protocol it is possible to achieve good functional elbow. This case report also highlights lack of knowledge on health issues and poor availability of medical facilities in developing countries like India which will cause increase in morbidities among patients and also give tougher challenges to

surgeons dealing with them later.

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Illustrations

Illustration 1

Figures 1

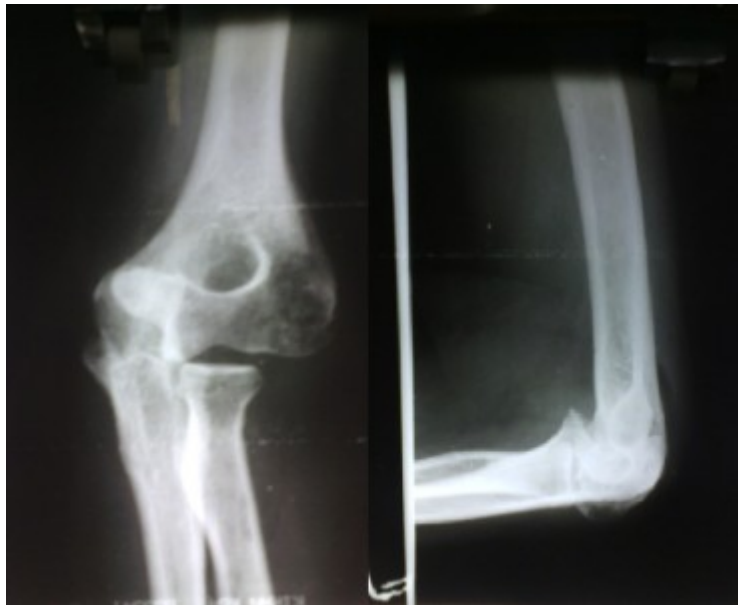


Illustration 2

Figure 2



Illustration 3

Figure 3



Illustration 4

Figure 4



Reviews

Review 1

Review Title: [Old unreduced posteromedial elbow dislocation: A rare case report](#)

Posted by Dr. Ameet Pispati on 17 Mar 2015 06:19:21 AM GMT

1	Is the subject of the article within the scope of the subject category?	
2	Are the interpretations / conclusions sound and justified by the data?	
3	Is this a new and original contribution?	
4	Does this paper exemplify an awareness of other research on the topic?	
5	Are structure and length satisfactory?	
6	Can you suggest brief additions or amendments or an introductory statement that will increase the value of this paper for an international audience?	
7	Can you suggest any reductions in the paper, or deletions of parts?	
8	Is the quality of the diction satisfactory?	
9	Are the illustrations and tables necessary and acceptable?	
10	Are the references adequate and are they all necessary?	
11	Are the keywords and abstract or summary informative?	

Rating: 8

Comment:

Indeed a rare injury and well presented.

Invited by the author to make a review on this article? : Yes

Experience and credentials in the specific area of science:

Yes, I regularly publish and am an experienced Orthopaedic surgeon.

Publications in the same or a related area of science: No

How to cite: Pispati A.Old unreduced posteromedial elbow dislocation: A rare case report[Review of the article 'Old un reduced posteromedial elbow dislocation: A rare case report ' by Kembhavi R].WebmedCentral Orthopaedics 1970;6(3):WMCRW003194

Review 2

Review Title: [A rare case of old unreduced posteromedial elbow dislocation](#)

Posted by Dr. Sanjay S Deo on 26 Feb 2015 06:38:04 PM GMT

1	Is the subject of the article within the scope of the subject category?	
2	Are the interpretations / conclusions sound and justified by the data?	
3	Is this a new and original contribution?	
4	Does this paper exemplify an awareness of other research on the topic?	
5	Are structure and length satisfactory?	
6	Can you suggest brief additions or amendments or an introductory statement that will increase the value of this paper for an international audience?	
7	Can you suggest any reductions in the paper, or deletions of parts?	
8	Is the quality of the diction satisfactory?	
9	Are the illustrations and tables necessary and acceptable?	
10	Are the references adequate and are they all necessary?	
11	Are the keywords and abstract or summary informative?	

Rating: 6

Comment:

The case report is worth considering for publication as it gives good insight in management of such cases especially in Indian conditions. However it also highlightes poor primary management of such cases in this part of world if such case would have reported in tertiary care hospital immediatly after trauma then it would have not been worth reporting.

Invited by the author to make a review on this article? : Yes

Experience and credentials in the specific area of science:

yes I have been operating on such cases since last 22 years.

Publications in the same or a related area of science: No

How to cite: Deo S.A rare case of old unreduced posteromedial elbow dislocation[Review of the article 'Old unreduced posteromedial elbow dislocation: A rare case report ' by Kembhavi R].WebmedCentral Orthopaedics 1970;6(2):WMCRW003186