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Shoulder Dislocation and Non Displaced Humerus Head Fracture Due to Epileptic Attack

Epilepsi Nöbeti Sırasında Oluşan Omuz Çıkığı ve Non Deplase Humerus Başı Fraktürü

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ABSTRACT

The majority of proximal edge fractures of the humerus are either non-displaced or minimally displaced. Sometimes these fractures are accompanied by humerus head dislocations. These fractures and dislocations can be treated conservatively methods and some cases can be treated with surgery. The method which will be least harmful to the surrounding soft tissues should be preferred. In 25% of shoulder dislocations, a positive family history can be found. The majority of shoulder dislocations are anterior dislocations. As in our cases, some chronic diseases such as epilepsy can form bases for shoulder fracture and dislocations. If the interventions of these cases are performed more diligently, we consider that the patients can be treated more effectively with simpler methods.

Keywords: *Epilepsy, humerus, fracture, dislocation, complication*

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ÖZET

Humerus proksimal uç kırıklarının çoğunluğu ya nondeplasedir ya da minimal deplasedir. Bazen de bu kırıklara humerus başı çıkıkları eşlik edebilir. Bu kırık ve çıkıklar genellikle konservatif tedavi yöntemleri ile bazı vakalar ise cerrahi yöntemlerle tedavi edilebilir. Çevre yumuşak dokulara en az zarar verecek yöntem tercih edilmelidir. Omuz çıkığı olan olguların %25'inde aile hikayesi görülebilmektedir. Omuz çıkılarının çoğunluğu öne çıkık şeklindedir. Bizim olgularımızda da olduğu gibi epilepsi gibi bazı kronik hastalıklar omuz kırık ve çıkıklarına zemin oluşturabilir. Bu tür vakaların müdahalelerinde daha özenli davranılırsa hastaların daha basit yöntemlerle daha etkin tedavi edilebileceklerini düşünmekteyiz.

Anahtar Kelimeler: *Epilepsi, humerus, kırık, çıkık, komplikasyon*

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INTRODUCTION

The disruption of the anatomical integrity of bone with the forces impacting exteriorly or interiorly is called a fracture. It can vary from a small crack (fissure), fragmental fracture, to fractured-dislocation.

Proximal humeral fractures constitute approximately 3% of upper extremity fractures (1). Generally they are more frequently observed over the age of 60 years (2). It is observed in women three times more frequently than in men. As the proximal humeral region is in the metaphysis bone structure, it can easily be fractured in small traumas. In the treatment of proximal humeral fractures, the method which will give least harm to the surrounding soft tissues should be preferred. The selected method should allow the patient to return to daily activities quickly (1). In non-displaced and minimally displaced stable fractures, conservative treatment methods are preferred. For multiple, displaced (having an angle of more than 1 cm and 45 degrees) and instable fractures, the surgical treatment methods are preferred (1).

The fractures that the emergency physicians most frequently encounter are anterior fractures of the shoulder joint (3). The mechanism which causes anterior shoulder dislocations in adults is falling over on the palms while the hands are open and the elbows are extended. These dislocations can cause serious complications such as humerus tuberculum majus fracture and plexus brachialis injury (3). In 25% of the shoulder dislocations, a family history can be observed (4).

The shoulder dislocations can develop after strong electric shocks, epilepsy attacks (especially grandmal attacks), diabetic nocturnal hypoglycaemia, trauma and during sporting activities. The epileptic contraction can cause dislocation and instability in the glenohumeral joint and at the humeral head, and wide bone defects can be observed. The reconstruction of defects in these patients is difficult and no valid method has yet been found (5).

We have tried to emphasize the need for adequate sedation and analgesia as well as gentle reduction in the non-displaced fractured dislocations at the shoulder during the epilepsy attack.

CASES

Our first case is a 37-year-old male patient, having a20 year history of epilepsy, and our second case is a 18-year-old male patient having a 5 year history of epilepsy. Both patients were taking their medicines regularly. In spite of this, they had 1-2 attacks per year. Both patients came to the emergency service at different times with complaints of pain in the left shoulder and motion restrictions. Both of the patients had a Glasgow coma scale score of 15 and their vital findings were within normal limits. The first patient was admitted to ED after 80 minutes of generalized tonic-clonic convulsion that lasted for approximately three minutes. The second patient came to the ED after about 35 minutes of a generalized Grand mal epileptic attack that lasted two minutes. There were no diseases other than epilepsy in their history and the patients and their relatives denied any additional trauma history to the patients' shoulders. Before their admittance to our ED, there were no histories of reduction attempts. In their examinations in our emergency department, each patient's left arm was in slight abduction and exterior rotation. In the physical examination, in the left shoulder of both patients, sensitivity with palpation, motion restriction, epaulette finding and minimal swelling were seen. There were no vein or nerve injuries. In the radiological evaluation, dislocations were observed t in the left humeral heads of both patients and non-displaced fractures were observed in the tuberculum majus (Figure 1). Both of the patients' histories revealed no previous history of humeral dislocation. Orthopedic consultations were requested. Although both patients' treatments were planned conventionally, while reduction of the dislocated shoulders was attempted, the fractures at the tuberculum majus were displaced (Figure 2). The patients were hospitalized in the orthopedics clinic and their treatments were carried out surgically (Figure 3). They were both discharged on recovery.

DISCUSSION

The shoulder joint movements occur with the help of the muscle mass surrounding the humerus. While the bone fragments

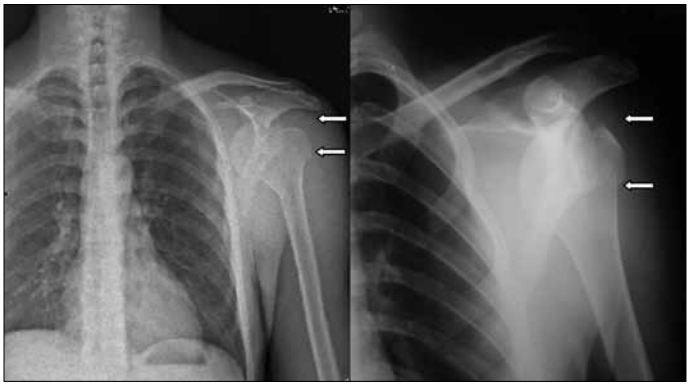

Figure 1. Humeral head dislocation and non-displaced fractures of tuberculum majus in 2 cases

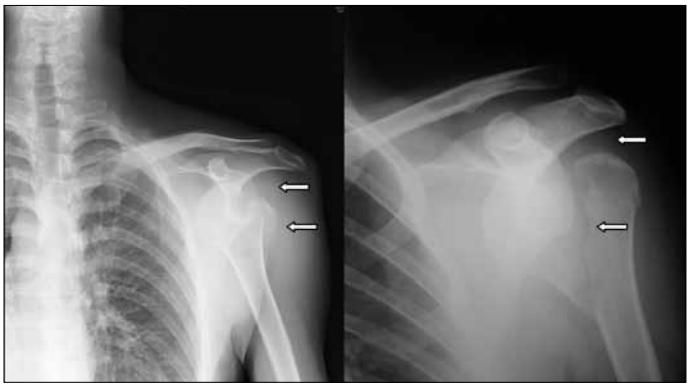

Figure 2. Displaced fractures in the tuberculum majus due to reduction

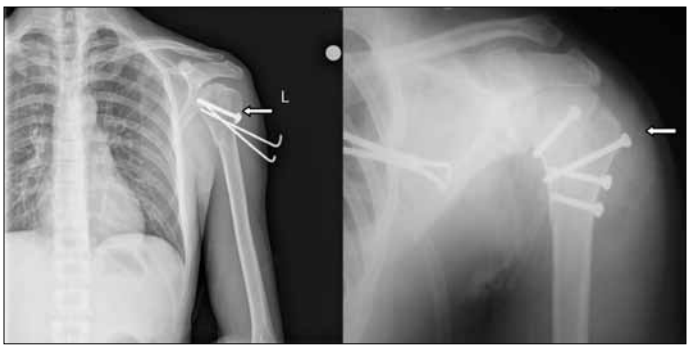

Figure 3. Images of cases after surgery

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are treated in the proximal humeral fracture, the activity of the surrounding soft tissues should be protected (6). The more the surrounding soft tissues are damaged, the greater the need for internal determination and early functional treatment.

Eighty five percentages of the humeral proximal edge fractures are either non-displaced or minimally displaced. These fractures can be treated with conservative methods. Generally accepted surgery indications are as follows: fractures having vessel and/or nerve injury, fractures near the proximal and distal edge and related to the joint, polytraumatic patients, bilateral humerus apparatus fracture, multiple part or segmentary fractures, open fractures, fractures which are not treated conservatively, cases in which radial nerve paralysis develops after treatment by manipulation or a conservative method, pathological fractures, fractures in patients having diseases such as Parkinson and epilepsy (7). Marie-Jeanne and et. al. applied a 4-6 weeks shoulder strap and six weeks physical therapy program in the 99-patient proximal humerus fractures working group that they treated conservatively. We also planned conventional treatment initially in our patients, but when the fractures at the humeral head were displaced during the reduction of the shoulder dislocations, we carried out surgical treatment.

Shoulder dislocations can happen with direct or indirect traumas to the shoulder. The glenoid is shallow and makes a joint with the large humeral head. Therefore, it is the least stable joint of the body (4). The shoulder dislocations are separated into four parts as anterior, posterior, inferior and superior according to the region in which the humerl head is located. Shoulder dislocations form 45% of all dislocations and 96% of them are anterior shoulder dislocations, 3% are backward, and 0.5% are downward shoulder dislocations (8). The anterior shoulder dislocation is observed in the elderly and are generally the result of falls on the open arm while the arm is in abduction and extension. Together with the dislocation, soft tissue, bone, neurological and vascular pathology can also be observed. Mallon determined tuberculum majus fracture or rotator cuff tear in 80% of 80 cases. The neurological problems have been observed at a rate of 60% and the vascular pathology at a rate of 3.3% (9). As for vascular pathology, the axillary artery and vein are affected most frequently. Although the vascular pathology generally disappears after the dislocation reduction, the saphena bypass requirements, depending on the axillary artery occlusions, were defined in two patients (10). The treatment is generally accomplished with closed reduction methods. Rarely it is necessary to reduce under general anaesthesia to provide relaxation of the muscles (4). Both of our cases were anterior shoulder dislocations and in both, humeral head non-displaced fractures accompanied the dislocations. We treated the dislocations conventionally with the Modified Hippocrates Method, but the fractures were treated surgically. In both patients, vessel and/or nerve injuries did not develop.

Epileptic contractions can cause dislocation at the glenohumeral joint as a result of the trauma, depending on falling or irregular and strong muscle spasms. After epileptic contractions the humeral head is generally displaced posteriorly. These dislocations are prone to repetition due to the wide defects that can be seen at the humeral head or at the glenoid (6). An epilepsy-specific lesion or instability type has not been defined yet. In the epileptic patients having Buhler and Gerber anterior instability, t the existence of wide Hill Sachs lesion was found 12 times more frequently than in the normal population and glenoid fracture frequency five times more frequently. In our findings, during the epilepsy attack, humeral head dislocations and fractures were present. In both, humeral heads were displaced anteriorly.

In conclusion, in the patients having a disease such as epilepsy, which may predispose to fractures, reduction should be applied with careful and gentle maneuvers following general anesthesia or sedoanalgesia. As a result, the patients may be able to be treated with conventional methods without surgery.

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