

Arthroscopic reduction and internal fixation for displaced anterior glenoid rim and greater tuberosity fractures

Yee-Suk Kim · Bong Gun Lee · Yong Girl Rhee ·
Chang-Hun Lee

Received: 15 March 2012 / Accepted: 24 August 2012
© The Japanese Orthopaedic Association 2012

Introduction

Concomitant fractures of the greater tuberosity and anterior glenoid rim are rare in cases of traumatic anterior dislocation of the shoulder. In such cases, open reduction and internal fixation for both fractures have been tried. However, the extensive dissection required to visualize fracture fragments may contribute to postoperative shoulder stiffness and morbidity. Recent advancements in arthroscopy suggest that the arthroscopic treatment of these fractures appears to be a feasible and attractive challenge. For anterior glenoid rim fractures, techniques described include arthroscopic screw fixation and the Bankart repair technique with suture anchors [1–3]. Recently, a double bony row technique and a bridge technique were developed to increase the primary stability of arthroscopic fixation [4]. For greater tuberosity fractures, techniques described also include arthroscopic screw fixation and suture anchor fixation [5, 6], and techniques for arthroscopic internal reduction and fixation of greater tuberosity fractures using double-row or suture-bridge techniques have recently been described [7, 8].

We present a rare case of anterior dislocation of the shoulder with displaced anterior glenoid rim and greater tuberosity fractures. Few reports have been issued on the

simultaneous treatment of both fractures using arthroscopic techniques. In fact, to our knowledge, this is the first case in which both glenoid and tuberosity fractures were repaired using arthroscopic techniques and cannulated screws. The patient provided consent for his case to be submitted for publication.

Case report

A right-hand-dominant, 25-year-old man injured his left shoulder in a bicycle accident. Plain radiographs revealed anterior dislocation of the left shoulder accompanying an anterior glenoid rim fracture and greater tuberosity fracture. After closed reduction of the dislocated shoulder, computed tomography (CT) demonstrated anteroinferior displacement of the glenoid rim fracture (Ideberg 1a). The size of the fragment was 23 % of the anteroposterior diameter and 44 % of the superoinferior diameter of the glenoid, and the actual width of the glenoid fragment was 6–8 mm. The greater tuberosity was displaced minimally but comminuted (Fig. 1). There was an articular surface depression in the posterosuperior surface of the humeral head (Hill–Sachs lesion) (Fig. 1d).

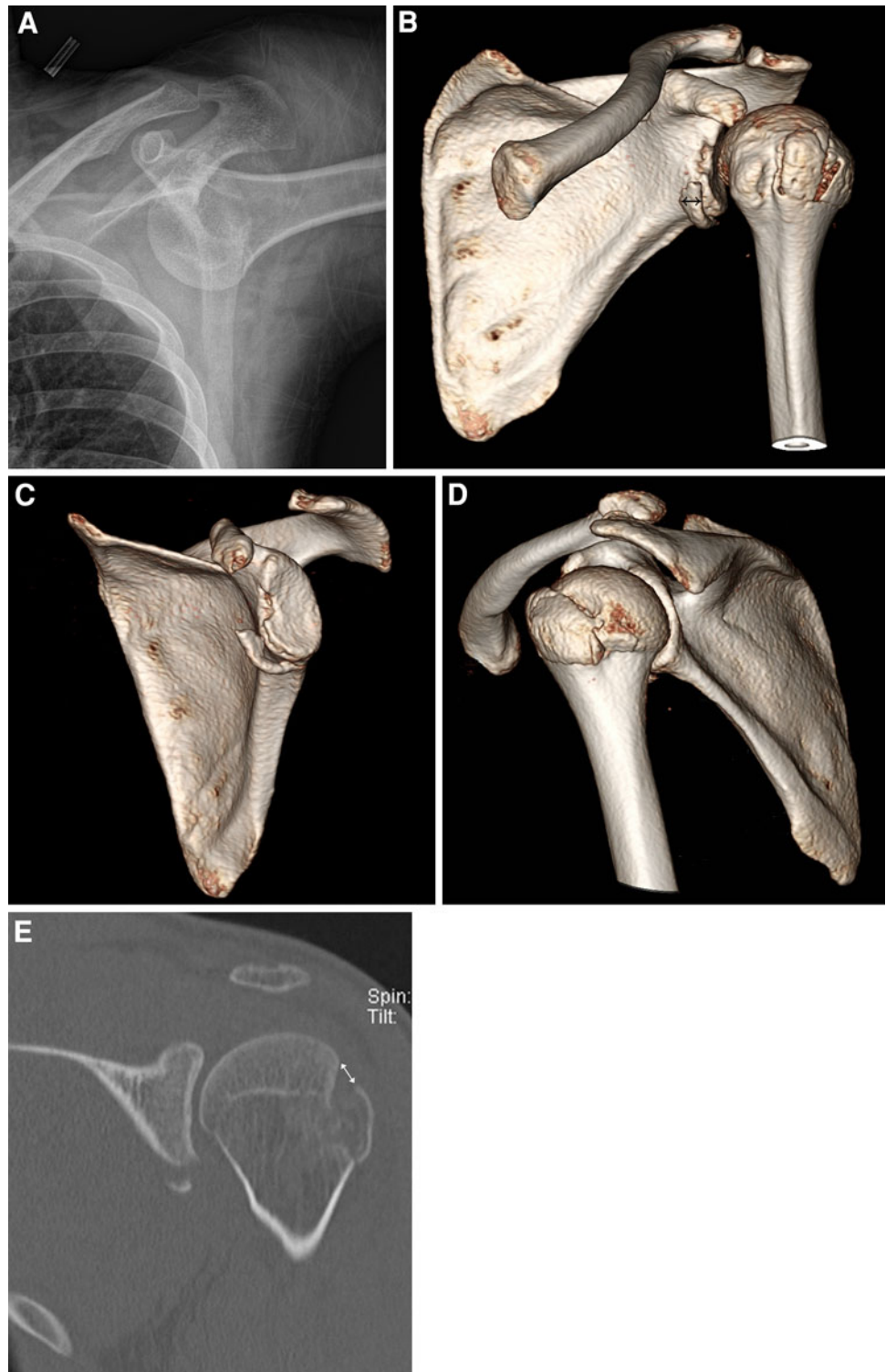
Under general anesthesia, the patient was placed in the sitting position on a beach chair, and the left arm was draped. The left shoulder was so unstable that anterior dislocation was evoked by a minimal anterior drawer force. A standard posterior portal was established and an arthroscope was introduced into the glenohumeral joint. The arthroscope was pushed through the joint between the humeral head and the glenoid at the level of the anterior band of the inferior glenohumeral ligament without resistance; thus the drive-through sign was positive [9]. Diagnostic arthroscopy revealed an anteroinferiorly displaced glenoid fracture with

Y.-S. Kim · B. G. Lee
Department of Orthopaedic Surgery, College of Medicine,
Hanyang University, Seoul, Korea

Y. G. Rhee
Department of Orthopaedic Surgery, College of Medicine,
Kyung Hee University, Seoul, Korea

C.-H. Lee (✉)
Department of Orthopaedic Surgery, Hanil General Hospital,
388-1 Ssangmoon 3-dong, Dobong-gu, Seoul 132-703, Korea
e-mail: drlch@hotmail.co.kr

Fig. 1 **a** Plain radiograph shows an anterior dislocation of the glenohumeral joint. **b, c** 3D CT shows a displaced anterior glenoid rim fracture and a comminuted greater tuberosity fracture. The widest width of the glenoid rim fragment (*black arrow*) was 8 mm. **d** Greater tuberosity was comminuted. However, the main posterior fragment was large enough to consider screw fixation (27 mm × 25 mm in size). There was an articular surface depression in the posterosuperior area of the humeral head. **e** Coronal reconstruction shows the depression of the humeral head and minimal displacement of the fragment (*white arrow*)



a torn capsulolabral ring (Fig. 2) and a comminuted greater tuberosity fracture with a Hill–Sachs lesion (Fig. 3). An anterior working portal was created through the rotator interval. Whereas the pattern of the glenoid fracture was simple, the displaced fragment was so long and slender that direct reduction was difficult. Initially, a bioabsorbable

suture anchor (3.0 mm Bio Mini-Revo, Linvatec) was placed at 2 o'clock at the upper margin of the fracture site. A suture hook loaded with No. 2 polydioxanone was then passed through the capsulolabral ring attached to the glenoid fragment, and a shuttle relay was then used to load the suture limbs into the capsulolabral ring. Reduction was performed

Download English Version:

<https://daneshyari.com/en/article/10175046>

Download Persian Version:

<https://daneshyari.com/article/10175046>

[Daneshyari.com](https://daneshyari.com)