According to Neer, fracture-dislocations of the shoulder can be classified according to the direction of the humeral head relative to the glenoid as well as the number of significantly displaced fracture fragments—two-, three-, or four-part.

Central to Neer’s classification is the status of the blood supply to the humeral head, which is related to the number of significantly displaced fracture fragments. Depending on the patient and fracture type, this injury can be treated with closed methods or operative intervention. Whatever treatment is chosen, reduction of the humeral head within the glenoid is essential to normal function. Reducing the humeral head within the glenoid when dealing with a fracture-dislocation of the shoulder can be difficult. This article presents a technique for reducing this injury with a small percutaneous incision.

**TECHNIQUE**

A 49-year-old man injured his left shoulder while holding on to a trapeze. His niece then pulled on his shoulder causing

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A technique using a cannulated tap in a percutaneous manner allows for easy reduction of the dislocated humeral head with minimal soft-tissue trauma and presents a useful alternative to repeated attempts at open or closed reduction.
extreme pain in his arm and the inability to raise it. On presentation to the emergency room, subsequent radiographs revealed a three-part fracture-dislocation of the shoulder, which was confirmed by computed tomography (Figures 1 and 2).

General anesthesia was administered and closed reduction was attempted without success. Through a small percutaneous incision over the anterior aspect of the deltoid, a threaded tip guide pin from the 7.3-mm Synthes cannulated hip screw instruments (Paoli, Pa) was placed under fluoroscopy into the humeral head, with the entry point in the surface of the fractured fragment (Figure 3). Care was taken to bluntly spread the soft tissue and to drill through a drill guide to minimize damage to any neurovascular structures, particularly the axillary nerve.

To gain better control of the dislocated humeral head, a cannulated tap was passed over the guide wire into the humeral head under fluoroscopic image (Figure 4). The humeral head was gently reduced into the glenoid using the cannulated tap as a “joystick.” Fluoroscopic image confirmed the reduction (Figure 5).

The patient was treated with a sling and swathe. Postoperatively, the fracture healed; however, the patient was lost to subsequent follow-up.

**DISCUSSION**

Fracture-dislocation of the shoulder is a relatively uncommon injury. It is important to reduce the humeral head within the glenoid in a timely manner to prevent further injury to the humeral head, nerve, or vascular structure and to alleviate the patient’s discomfort. In addition, increased swelling and soft-tissue contracture occur around the joint with time, making reduction more difficult.

Various treatments have been described to reduce this type of injury including open and closed techniques. One report described using a Steinmann pin to assist in successful reduction of a shoulder fracture-dislocation after failing with closed traction. We have used our technique successfully in three patients without any complications. We find greater control of the dislocated humeral head using the cannulated hip tap, especially in osteoporotic bone, to assist in reducing the shoulder. The other advantage of this technique is that it eliminates conversion to open reduction to reduce the humeral head thereby potentially preserving the soft-tissue envelope and blood supply to the humeral head. This technique is also useful in patients with polytrauma who can have the shoulder reduced in a timely fashion without subjecting them to more invasive surgery, especially if more life-threatening injuries must be dealt with initially.

**REFERENCES**