

CASE STUDY

ORIF of displaced lateral clavicle fracture with the APTUS 2.8 Clavicle System

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Stable fixation of displaced lateral clavicle fractures remains challenging due to the soft bone structure in this area. While vertical instability can be sufficiently addressed by the use of a hook plate or a tight-rope technique, horizontal stability is difficult to obtain – especially with small lateral fragments. The following case study shows the value of the innovative APTUS 2.8 Clavicle System when dealing with these injuries.

The Case

Patient Profile

A physically active, 56 year old female with no relevant comorbidities presented to our emergency department due to pain in her left shoulder following a direct fall onto the shoulder.

Clinical Findings/Preoperative analysis

Swelling and bruising over the left lateral clavicle was noticeable. Active and passive range of motion of the left shoulder was restricted due to pain. Plain radiographs revealed a displaced lateral clavicle fracture, Neer type 1 (Figure 1).



Figure 1

The patient was immobilized in a sling and she came back for a follow-up appointment two days following the injury. The clinical examination revealed significant horizontal instability and a CT scan showed pronounced posterior displacement of the medial fragment (Figure 2). Therefore, we opted for open reduction and internal fixation (ORIF) rather than conservative treatment.

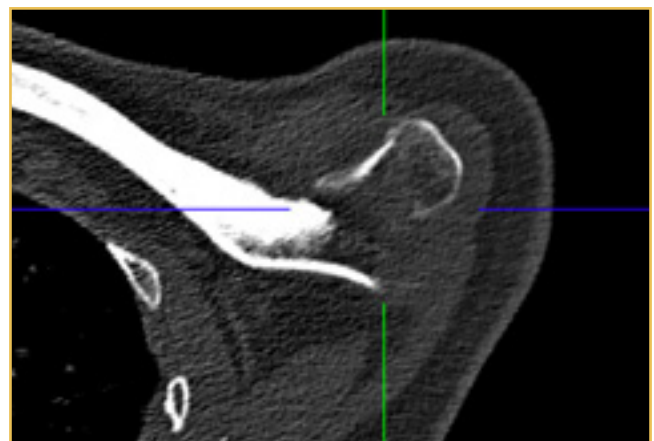


Figure 2

Surgical treatment

With the patient in a beach-chair position, ORIF was performed through a skin incision in line with the lateral clavicle three days following trauma. After anatomic reduction and temporary fixation with a reduction clamp and a 1.6 mm Kirschner wire, definitive fixation was obtained using a 12-hole 2.8 TriLock Superior Lateral Clavicle Plate. First, the plate was secured to the shaft with a bicortical non-locking screw in the oblong hole of the plate. Then, seven locking screws were placed in two planes in the lateral fragment and two bicortical locking screws were placed in the medial fragment to achieve stable fixation (Figure 3).



Figure 3

Intraoperative findings

While no vertical instability was present, pronounced horizontal instability was noted intraoperatively. This difficult instability pattern could be superbly addressed by the unique features of the Superior Lateral Clavicle Plate. This plate not only allows for placement of screws in a superior-to-inferior direction, but it also has two anterior flaps which facilitate placement of screws in a second plane in an anterior-to-posterior direction.

Postoperative treatment

The patient was placed in a sling for comfort. Active range of motion exercises were introduced at the second week following surgery. Weightbearing was introduced at 6 weeks. At her latest follow-up three months after surgery, the patient was pain-free, had regained full function of her shoulder and had already returned to the same level of physical activity as prior to the injury. Follow-up radiographs revealed anatomic fracture union (Figure 4).



Figure 4

Conclusion

The APTUS 2.8 Clavicle System provides excellent fixation of lateral clavicle fractures. Due to its unique design, it can effectively counteract both horizontal and vertical instability patterns and is of great benefit especially in case of small lateral fragments.

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