

Introduction

Fractures of the medial third of the clavicle are rare (only 2-4% of clavicle fractures). This type of fracture is due to high-energy trauma associated with multiple organ damage and a high mortality rate. In the case of posterior dislocation of the clavicle, serious complications can occur: compression/injury of vascular and nerve structures, trachea, esophagus, and pneumothorax. In young patients, epiphysiolysis is more common than fracture. Indeed, the physis does not close until the age of 20-25 years. In case of posterior dislocation or relevant instability, the treatment of the lesion may be surgical. Here we report a rare case of simultaneous epiphysiolysis and medial clavicle fracture treated surgically.

Case report

A 17-year-old patient fell from his bicycle onto his right shoulder, complaining of pain not only in the shoulder but also in the sternal area. He had no skin lesion, dysphagia, dyspnea, or sensory-motor deficits, and vital signs were normal. Standard radiogram and angio-CT (Fig 1 and 2) demonstrated a posteriorly displaced medial clavicle fracture with a dislocation of the sternal clavicle joint, with compression of residual thymic tissue. We proposed open reduction and internal fixation of the fracture to the patient.

Under general anesthesia was inducted in dorsal decubitus. A transverse incision centered on the fracture was made. After the fragment was released and anatomic reduction was achieved, a grind locking plate (1.0 mm) was attached. Intraoperative imaging after fixation, the clavicle remained elevated with respect to the contralateral, due to epiphysiolysis found after further exploration of the intact periosteum. We reduced the epiphysiolysis by reducing the clavicle in its periosteal sleeve and fixed with transosseous sutures. The clavicles are symmetrical (Fig 3), and the patient has resumed a complete and symmetrical mobilization without pain.

The Oxford Shoulder Score at 5 months post-operative was 47/60, and at 8 months post-operative 48/60. The radiological result was satisfactory without signs of displacement (Fig 4 and 5).

Conclusion

Medial clavicle fracture-dislocations are rare but potentially serious injuries. Posterior dislocation always requires surgical intervention. In our particular case, surgical treatment allowed us to diagnose epiphysiolysis. Even in the case of a confirmed fracture, the suspicion of a clavicle physis injury should be considered, in order to avoid malunion and functional disability.

References

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Fig 1 : Pre-operative radiogram of the right clavicle

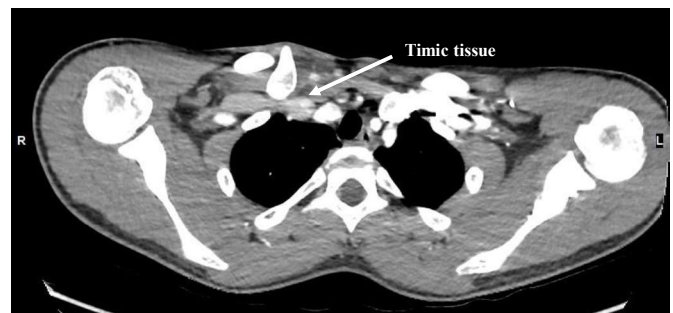


Fig 2 : Pre-operative angio-CT scan axial posterior medial clavicle fracture displacement and compression of residual thymic tissue

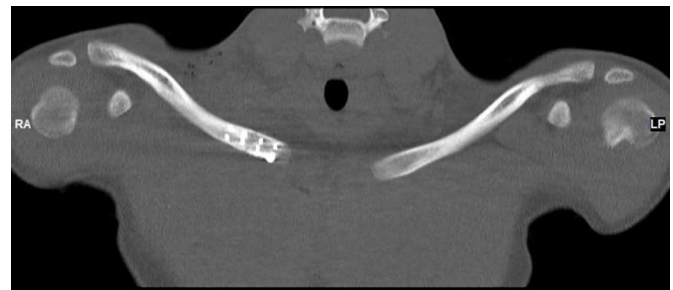


Fig 3 : Post-operative CT scan coronal, the grind locking plate is stabilizing the fracture



Fig 4 : Radiogram control at 6 weeks post-operative



Fig 5 : Radiogram control at 8 months post-operative