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Fracture of the Right Scapular Girdle Complicated By Deep Vein Thrombosis of the Left Upper Limb

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Abstract **Case Report**

We report the case of a footballer who developed thrombosis of the vein under left keyboard following a fracture of the clavicle associated with an acromioclavicular and sternoclavicular dislocation. An internal osteosynthesis by anatomical plate (figure 4) for the fracture of the clavicle then a tension band wiring for the acromioclavicular dislocation while the strenoclavicular dislocation was stable after reduction by external maneuver, complicated 3 days after by an occlusion of the subclavian vein.

Keywords: Clavicle; dislocation, acromioclavicular, sternoclavicular, Deep vein thrombosis; Fracture; Upper extremity.

INTRODUCTION

Deep vein thrombosis (DVT) of the upper limb is a rare clinical entity. Its occurrence after a bone fracture is exceptional and its complications fatal. We report the case of a footballer who developed thrombosis of the vein under left keyboard following a fracture of the clavicle associated with an acromioclavicular and sternoclavicular dislocation. The diagnosis was suspected by the clinic and confirmed by ultrasound-Doppler and in particular a phlebography +++ medically treated with anticoagulants, the evolution was good.

OBSERVATION

This is a 27-year-old amateur footballer who, during a training session, had a fall on the left shoulder stump resulting in severe pain and functional impotence (figure 1). X-ray antero posterior and scan was performed in the emergency department reported a diaphyseal fracture of the middle third of the leftclavicle (Fig.2 and 3) associated with ipsilateral acromioclavicular dislocation and bilateral sternoclavicular dislocation (figure 2,3). An internal osteosynthesis by anatomical plate (figure 4) for the fracture of the clavicle then a tension band wiring for the acromioclavicular dislocation while the strenoclavicular dislocation was stable after reduction by external maneuver. Beside these lesions, the patient presented a posterior dislocation of the left hip, reduced under general anesthesia (figure 5, 6), and which seems stable in flexion extension. Three days later, the patient presented at the level of his upper left limb: tense cyanic aspect with pain, increased volume, compared to the opposite side, distal pulses were present and symmetrical. The Doppler-coupled ultrasound associated with phlebography detected an occlusion of the subclavian vein at the point where it entered the innominate trunk (brachiocephalic) (figure 7). The patient received a recanalization at the vascular surgery department. Ultrasonography also eliminated a compressive hematoma or post-traumatic aneurysm of the subclavian artery; the patient was placed on low molecular weight heparin with a healed curative dose and then relayed by the antivitamin K. was limited to the thrombophilia balance sheet, which turned out to be negative. The evolution was favorable: the fracture consolidated after six weeks and the clinical signs of DVT disappeared in a few days. Treatment with Vitamin K was maintained for 6 weeks.

Fig-1: Severe pain and functional impotence of the left shoulder

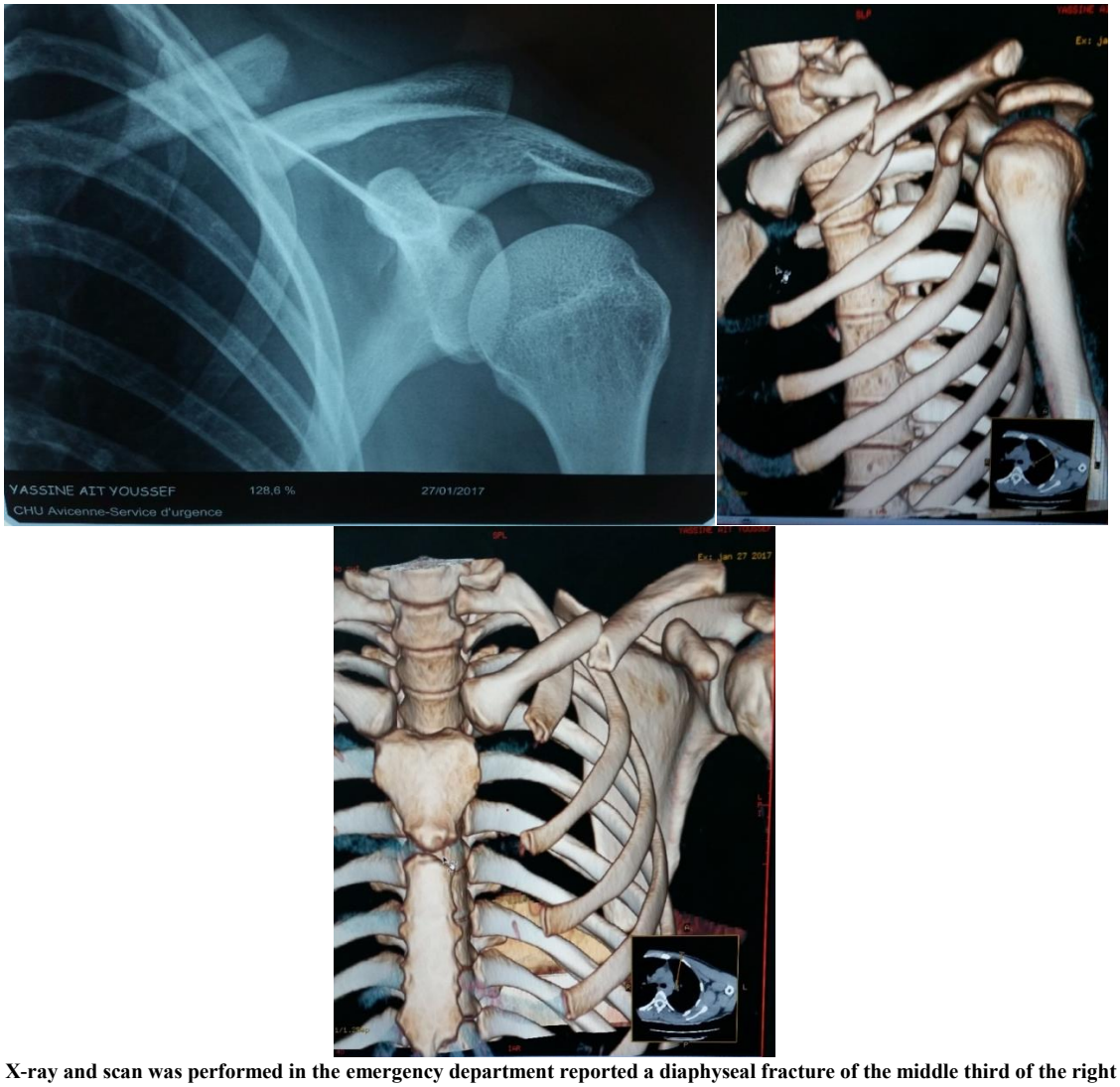

Fig-2, 3: X-ray and scan was performed in the emergency department reported a diaphyseal fracture of the middle third of the right clavicle associated with ipsilateral acromioclavicular dislocation and bilateral sternoclavicular dislocation

Beach chair position

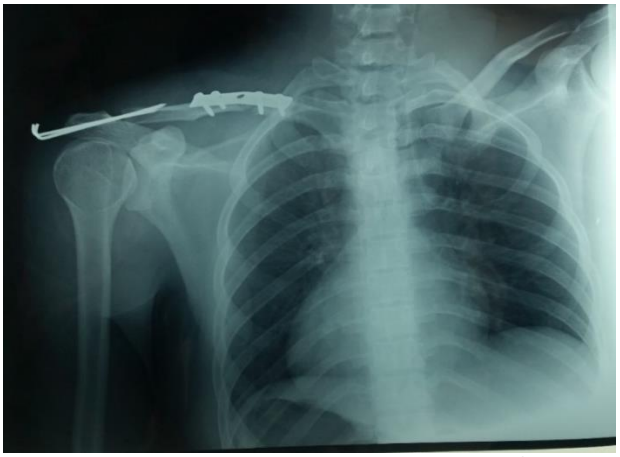

Fig-4: An internal osteosynthesis by anatomical plate for the fracture of the clavicle then a tension band wiring for the acromioclavicular dislocation while the strenoclavicular dislocation was stable after reduction by external maneuver

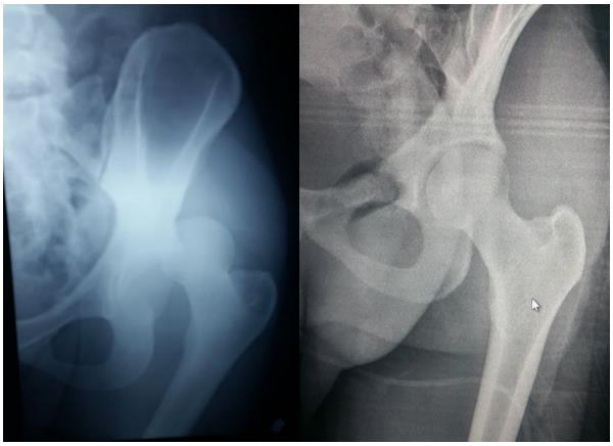

Fig-5, 6: Posterior dislocation of the left hip, reduced under general anesthesia

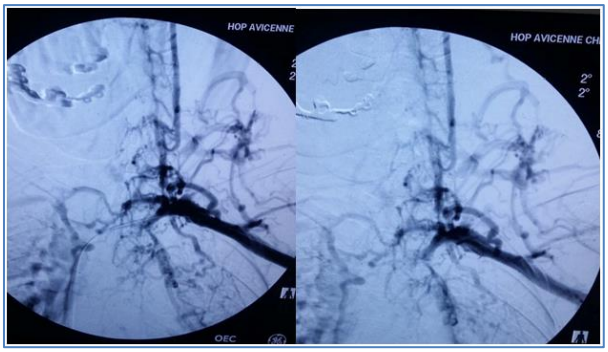

Fig-7: phlebography detected an occlusion of the subclavian vein at the point where it entered the innominate trunk (brachiocephalic)

DISCUSSION

DVT of the upper limb is rare and accounts for 2-4% of all DVT [1]. Their frequency has increased, however, since the increasing use of central venous catheters [2]. Other local etiologies are represented by pacemaker probes, tumor compressions and thoracobrachial paracentesis [3, 4]; the general causes are mainly thrombophilias, paraneoplastic syndromes and systemic diseases [5, 6]. The occurrence of a DVT following a fracture of the upper limb is exceptional. Only a few sporadic cases have been reported in the literature [7, 8]. Clinically, DVT of the upper limb is manifested by: edema that begins at the level of the hand and extends to the forearm and arm; a pain; collateral cutaneous circulation; a filling of the supraclavicular fossa. Palpation of the axillary fossa may perceive a painful cord [9]. Angio-Scanner clarifies the diagnosis and extension of thrombosis. The treatment is based on anticoagulants and on the excision of a possible cause: removal of the catheter or the implantable chamber, surgery of a cervical rib, etc. DVTs of the upper limbs were classically considered as not very emboligene and of good prognosis. In fact, they can be complicated by pulmonary embolism in 9 to 36% of cases [10].Other complications are represented by the superior cave syndrome (following extension of the thrombus to the internal jugular and superior vena cava veins) and post-phlebitic syndrome. In our patient, the most likely mechanism of occurrence of thrombosis is the consequent blood stasis of a venous return gene in the right upper limb. The vascular lesion hypothesis is also to be discussed, especially since it was a trauma, but the clinical examination found neither an obvious point of bruising nor a bruise at the point of impact. The state of hypercoagulability was excluded by a negative thrombophilia balance. In this traumatic context, the phenomenon of vascular stasis may be due to compression of the subclavian vein by a post-traumatic hematoma of the region. This possibility has been eliminated by thoracic angioscanter; of a stress phlebitis still called Paget-Schroetter syndrome. It is a syndrome specific to the young athlete subject closely related to the static and dynamic anatomy of the thoracobrachial parade [11].

CONCLUSION

Deep vein thrombosis is an exceptional complication of clavicle fractures. In view of its dramatic consequences, we must prevent its occurrence by avoiding restraints too tight, prefer the scarves clavicular rings in eight and discuss the surgical treatment especially in the young sports subject.

Conflicts of interest

The authors do not declare any conflict of interest.

Contributions of the authors

All authors have read and approved the final version of the manuscript

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