A Rare Case of Multiple Clavicular Exostoses Following a Shoulder Injury

Zakir Haider*, Akash Patel and Francis Lam

Trauma & Orthopaedics, Hillingdon Hospital, England

*Corresponding Author: Zakir Haider, Trauma & Orthopaedics, Hillingdon Hospital, Pield Heath Road, UB8 3NN, Uxbirdge, England.

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Abstract

A rare case report on a 19 year old gentleman who presented with bony swelling, reduced range of motion and a crunching sensation on movement, 3 years after a right shoulder injury. Imaging and surgical exploration revealed two large clavicular exostoses secondary to non-union of an undiagnosed fracture. Exostosis at this site is exceptionally unusual.

Keywords: Exostosis; Exostoses; shoulder injury; clavicular injury; mal-union; orthopaedics; trauma

Introduction

A 19 year old gentleman presented to our orthopaedic clinic complaining of increasing bony swelling over the superior aspect of his right shoulder and a crunching sensation on movement. Four years previously, whilst playing rugby, he sustained a right shoulder injury and had been told there was no fracture.

On examination he had a large bony swelling at the acromio-clavicular joint with reduced range of movement in shoulder flexion and abduction.

Investigations included radiographs of the right shoulder revealing two bony spurs protruding from the right lateral clavicle (Figure 1). A CT scan confirmed exostoses with further delineation of their anatomy (Figure 2 and 3).

Figure 1: Plain radiograph of the right shoulder revealing two bony spurs from the superior aspect of the right lateral clavicle.
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Treatment involved surgery for excision of exostoses. Exploration revealed a fracture of the lateral clavicle in non-union with development of callus on either end of the fracture site producing the exostoses. At the time, the lateral clavicular exostosis fragment was not entirely removed as a substantial gap would have been left at the acromio-clavicular joint causing an articulation defect.

The patient was reviewed 2 months later and found to have full range of movement in his shoulder. Exostoses are hamartomas derived from physical cartilage which mature following endochondral ossification [1]. Pathophysiology of this lesion is not fully understood but is thought to be secondary to abnormality/injury to the peripheral epiphysis plate [1]. Exostosis occurs commonly at the femur, tibia and proximal humerus [2]. However, it is very rare for exostoses to present in the clavicle [3] especially the lateral clavicle as in this case. Exostoses should arouse suspicion of bony fracture with subsequent non-union or mal-union as part of a differential diagnosis. Additionally, asymptomatic benign exostoses do not require surgery.

Figure 2: A CT image with bone windows in axial view confirming an exostosis from the superior margin of the right lateral clavicle.

Figure 3: A CT image with bone windows in coronal view confirming a second exostosis extending anteriorly and superiorly from the lateral clavicle with a fracture at its base. Both exostoses demonstrate normal bone texture with no sinister pathology.

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