Case Presentation

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Shoulder Trauma in an Adolescent Patient

ABSTRACT
Differentiating normal ossification variants from fractures in children and adolescents with shoulder trauma is a common diagnostic challenge. We report the case of a 14-year-old male who, after a sports-related injury, was initially diagnosed with a glenoid fracture based on radiographs and computed tomography (CT). Subsequent evaluation, including a detailed physical examination and contralateral shoulder radiographs, showed that the suspected fracture represented normal ossification of the scapular growth centers. This case underscores the importance of a solid understanding of developmental anatomy, a thorough clinical examination, and the use of comparative imaging to avoid misdiagnosis and unnecessary treatment in this population.
Keywords: Ossification; fracture; pediatrics; shoulder; diagnosis.
Level of Evidence: IV

Traumatismo de hombro en un adolescente

RESUMEN
La diferenciación entre las variantes normales de la osificación y las fracturas en pacientes pediátricos y adolescentes con traumatismos de hombro es un desafío diagnóstico común. Presentamos el caso de un varón de 14 años que, tras un traumatismo deportivo, fue inicialmente diagnosticado con una fractura glenoidea sobre la base de estudios radiográficos y tomográficos. Una evaluación posterior, que incluyó un examen físico detallado y radiografías contralaterales, reveló que la supuesta fractura correspondía a la osificación normal de los centros de crecimiento escapulares. Este caso subraya la importancia de un conocimiento profundo de la anatomía del desarrollo, un examen clínico exhaustivo y el uso de estudios comparativos para evitar diagnósticos erróneos y tratamientos innecesarios en esta población.
Palabras clave: Osificación; fractura; pediatría; hombro; diagnóstico.
Nivel de Evidencia: IV

INTRODUCTION

A 14-year-old boy (14 years 11 months) presented to the Department of Orthopedics and Traumatology with a sling on the right arm and a prior diagnosis of glenoid cavity fracture. The injury followed a ground-level fall while playing rugby. At the initial Emergency Department evaluation, shoulder radiographs (Figure 1) and multidetector CT with multiplanar reformats and 3-D reconstructions (Figure 2) were obtained.

FINDINGS AND INTERPRETATION OF THE IMAGING STUDIES.

The CT report stated: “A glenoid fracture is observed in the superior region extending toward the base of the coracoid process,” and the patient was prescribed immobilization, analgesics, and specialist follow-up.

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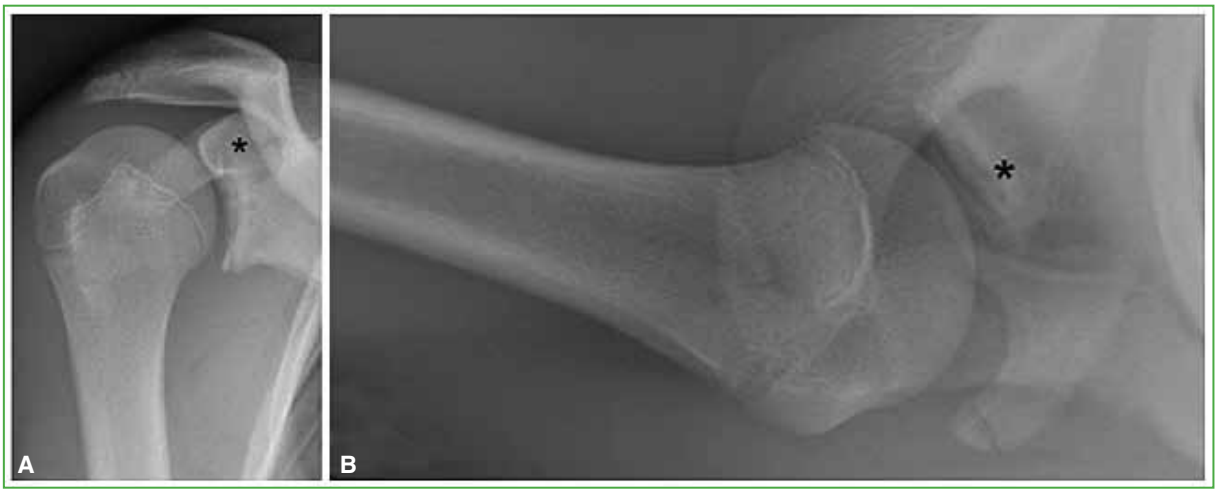

Figure 1. Shoulder radiographs, anteroposterior (**A**) and axial (**B**) views. Linear lucency at the superior glenoid articular surface (*) compatible with a fracture line. Joint spaces preserved.

Figure 2. CT of the right shoulder. Although initially reported as a fracture of the glenoid surface extending into the coracoid ossification center, the images are consistent with the normal secondary ossification centers of the coracoid and the inferior glenoid in a 14-year-old boy, shown on axial (**A**), coronal (**B**), and 3-D reconstruction (**C**).

At 48 hours post-injury, he was assessed by a sports shoulder specialist. Examination showed mild swelling in the anterior shoulder, localized tenderness on palpation (VAS 3/10), and full range of motion without meaningful asymmetry compared with the contralateral side.

Clinical questions. Given the preliminary diagnosis and these initial findings, is the information sufficient to establish a definitive diagnosis and treatment plan? What additional studies would you obtain and why?

To corroborate the suspected glenoid fracture and identify any associated injuries, a shoulder MRI was requested.

Conflicts of interest: The authors declare no conflicts of interest.

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