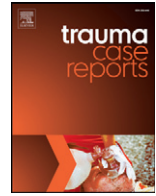




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Case Report

Fracture of a persistent olecranon physis in an adult

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ABSTRACT

A persistent olecranon physis is relatively rare; a fracture through the persistent olecranon physis in an adult is particularly rare. Little is known about the pathology of this disease. We report a case of a 36-year-old man presenting with right elbow pain after he had slipped and hit his elbow, with a history of a persistent symptomatic olecranon physis when he was a junior high school baseball player. He had been diagnosed with a fracture through a persistent olecranon physis by another doctor. Ten weeks after the injury, an iliac autograft was inserted and internal fixation was achieved with Kirschner wires and a figure-of-eight tension band in our hospital. Histologically, a fracture passed through the persistent physis cartilage and degeneration of the remnant of the physis was observed. The remnant of the physis at the olecranon side had not been replaced by new bone, though the physis at the distal ulnar was nearly replaced by new bone. The patient returned to work without experiencing pain or limitation in the range of motion 6 months after the operation. Radiographic evidence of bone union was seen after removal of internal fixation at the 13-month follow-up.

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Introduction

Reports of fracture of a persistent olecranon physis in an adult are rare [1–4], compared with those in adolescence where treatment has been established [5]. Matsuura et al. reported the value of radiographic criteria in the treatment of persistent symptomatic olecranon physis in adolescent throwing athletes [6]. Little is known about the pathology of this disease in adults. Our review of the published literature identified four

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cases of a fracture through a persistent olecranon physis in adults [1–4], of which two had a growth plate remnant evident on histology [1,2]. In one report, the fracture was presumably represented by the line of clefts in a specimen of persistent olecranon physis [1]. Physeal separation was evident through the middle of the growth plate rather than hypertrophic zone but typical physeal fractures tend to pass through the hypertrophic zone [7]. Here, we present a rare case of a fracture through a persistent olecranon physis and the histological findings.

Case report

A 36-year-old man, with a history of a persistent symptomatic olecranon physis when he was a junior high school baseball player, felt pain in his right elbow after he had slipped and hit his elbow. He was diagnosed with an olecranon fracture by a doctor and later consulted our clinic. Physical examination revealed tenderness around the olecranon physis with a limitation of elbow extension of 20°. Lateral radiographs showed a displaced olecranon fragment with a sclerotic margin (Fig. 1A, B). An operation was performed 10 weeks after the injury. The fracture site was partially removed for histological examination. An iliac autograft and internal fixation of the persistent physis was achieved with Kirschner wires and a figure-of-eight tension band (Fig. 1C). Six months after the operation, the patient had full range of motion and was able to return to work



Fig. 1. Anteroposterior and lateral radiographs of the elbow (A, B). A transverse, irregular radiolucent line with a sclerotic border was found at the proximal physis of the olecranon. After iliac autograft and internal fixation with tension band wiring (C). After removal of internal fixation (D).

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