Case Report

Incidental Finding of Asymptomatic Supracondylar Process of the Humerus: A Case Series

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Abstract

The supracondylar process is an uncommon anomaly that presents as a beak-like bony projection from the anteromedial aspect of the humerus. Many of these occurrences are reported as sporadic case reports or small series. While the true incidence cannot be assessed as very few of these have clinical problems like neurovascular compression (brachial artery or median nerve entrapment) due to ligament of Struther's attached to it. Incidentally, these lesions can be noted in clinical settings while treating some other conditions. We describe a series of four cases that were incidentally seen in our center when radiographs were done for various reasons.

Keywords: Anomaly, humerus, Struthers' ligament, supracondylar process

Introduction

The supracondylar process or spur is an anatomic variant that is uncommon with reported incidence of 0.8%–2.7% in the general population and this congenital anatomical structure is located proximal to the medial epicondyle within an average distance of 5 cm.[1] The projected or prominence of the structures is asymptomatic unless fracture or neuromuscular compression results from the Struthers' ligament (SL), which connects the bony spur to the medial epicondyle.[2] The fibro-osseous tunnel created by this arrangement causes the brachial artery (claudication) or median nerve (parasthesia, numbness, or weakness) to be compromised, which then is referred to as supracondylar process syndrome.[3] The differentiating feature of the process from closely resembling osteochondroma is that the supracondylar process points toward the elbow joint in contrast to an osteochondroma that points away from the adjacent elbow joint. The study of this anatomic variant has been found to be of interest even to anthropologists studying the human origin and its relationship with other species and races of European descent are reported to have more incidence.[4]

Although the incidence of neuropathies due to SL is rare, the true incidence of the supracondylar process is difficult to study. An attempt to share our experience of four cases from a single center is an attempt to enrich the literature in this regard.

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Case Reports

A very succinct and relevant features of cases are presented here and the detailed description is avoided as the context is not their management but the presence of the skeletal anomaly.

Case 1

A 45-year-old female patient presented to us with complaints of injury to her right elbow following fall from the height. There was swelling and pain and she could not use her right upper extremity following the injury and was given first aid at local dispensary before coming to us. There was no other injury and the distal neuromuscular deficit was intact. Radiograph of the elbow showed olecranon fracture and surgery was planned. There was a bony prominence noted at the anteromedial aspect of the humerus in the radiograph and the diagnosis of the supracondylar process was made on the basis of characteristic morphology and location [Figure 1].

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Case 2

A 44-year-old male patient presented to us with a history of injury to his right arm in a road traffic accident following which he noted pain, deformity, and disability in using his left arm. This was isolated injury and no distal neuromuscular problems were seen. The radiograph showed fracture of the mid-shaft of the humerus and the surgery was planned. A bony prominence pointing outside from the medial aspect of the humerus was seen on radiograph that resembled supracondylar process [Figure 2]. There was no problem with that anomaly in the history before the incident.

Case 3

A 2-year-old male child had a history of elbow injury following fall on ground with outstretched hand. There was swelling and pain and radiographs were advised to rule out fractures such as supracondylar or unicondylar fractures. There was no distal neuromuscular deficit and other injuries. There was no obvious underlying bony fracture noted but a plaster splint was advised for supportive and symptomatic relief. A pointed bony prominence was, however, noted at the anteromedial aspect of the humerus [Figure 3]. The bony prominence was a supracondylar process on account of characteristic location and anatomy. The child is asked to review annually for assessment of the lesion.

Case 4

A 42-year-old male presented to us with a history of right elbow injury following fall from a vehicle, leading to pain, swelling, and disability in using the right upper limb. There was no history of other injury or distal neuromuscular deficit. The elbow radiograph revealed no bony injury, but plaster splint for soft-tissue healing was advised along with pain medications. There was a beak-like bony prominence noted over the distal aspect of the humerus with the characteristic feature of the supracondylar process [Figure 4]. Further radiographs were refused by the patient and he was after few months lost to follow-up.

Figure 1: The elbow radiograph showing an incidental finding of a beak-like projection from the anteromedial aspect of the distal humerus along with the olecranon fracture. The projected structure is supracondylar process

Discussion

The supracondylar process (with accompanying SL) is an uncommon anatomical anomaly and in a recent meta-analysis including pooled samples from 513 arms, only six cases (1.8%) were noted with SL.[5] A series from India presented five cases (three males and two females) of incidental findings of supracondylar process in three and history of paresthesia in two cases.[6] All cases were managed surgically to good outcomes. In another series of four cases, three cases had pain and one had symptomatic median nerve compression.[7] One case in this series interestingly had an osteochondroma in the contralateral supracondylar region. The female preponderance and left side involvement have been noted more frequently in a recent meta-analysis.[8] Our series, however, had male preponderance and right-side involvement. Usually, the median nerve is associated with compression neuropathy, but the ulnar nerve is not an exception.[9] Our cases had no nerve entrapment complaints before and after injury. Fracture of the process is rarely reported following injury and presents with pain and limitation of movement.[10] Although all our cases presented following traumatic accidents, none had a fracture of the process. This small series has one shortcoming that radiograph of the contralateral side for better documentation was not done in all cases. A proper record of such anatomical anomaly should require information on bilateral afflictions and other imaging like computerized tomograms in selected cases. This, however, does not dilute our attempt to register this rare anomaly and enrich the literature. A registry type of record-keeping is warranted to know the detailed incidence of the supracondylar process in a particular geographic region or ethnic population.

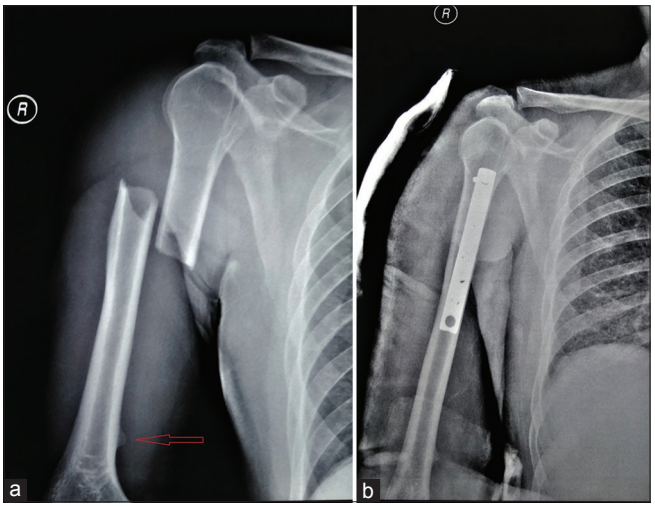

Figure 2: The radiograph of humerus shaft fracture (a) also revealed incidental anatomical projection of the supracondylar process (denoted by arrow). (b) The process was asymptomatic while the fracture was undergone surgical fixation

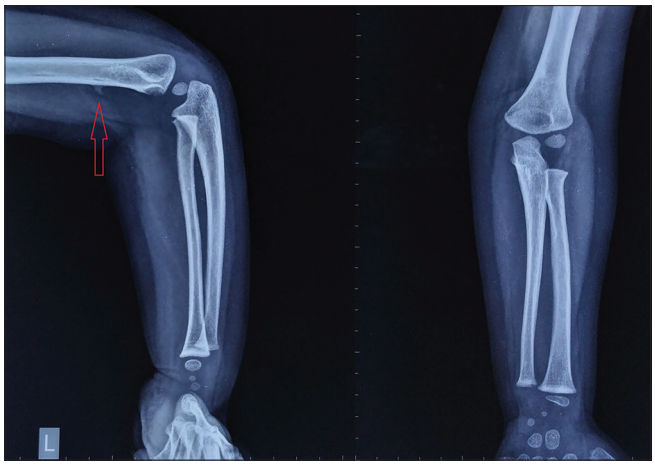

Figure 3: The radiograph of a child showing a downward projecting projection from distal humerus on lateral view (denoted by arrow), the peculiar features of which suggest it to be a supracondylar process

Figure 4: The elbow radiograph showing an anteromedial structure projecting proximal to medial epicondyle that was a supracondylar process

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the parents have given their consent for images and other clinical information to be reported in the journal. The parents understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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