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Case report

Bony projection from the olecranon process of ulna

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ABSTRACT

During examination of ulna in the osteology lab in the department of anatomy, CSMMU, Lucknow, UP, India, author found four ulnae showing new bony projections from the posterior part of olecranon processes. Incidence of this bony projection is 4%. The average length, breadth and thickness were 9 mm, 1.2 mm and 4 mm respectively. These bony projections may impinge on the triceps muscle and surrounding structures causing spasm of muscle and compression of structures leading to pain during biomechanical movements of the shoulder joint, elbow and hand. The bony projection may cause misinterpretation of radiographs. Thus knowledge of this bony projection is of paramount importance to clinicians, radiologists and anatomists.

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1. Introduction

Ulna is the medial bone of the forearm and homologous with the fibula of the lower limb. Upper end of ulna consists of coronoid process, trochlea, radial notch and olecranon process. Olecranon process projects upwards from the shaft of ulna. It has superior, anterior, posterior, medial and lateral surfaces. Posterior part of the superior surface of the olecranon process gives insertion to the triceps brachi and anterior part of the surface is covered by bursa [1].

A bony projection was observed arising from the posterior part of the superior surface of olecranon process of the ulna. This bony out growth may create bundle of complications in biomechanical movements restricting the activities. Therefore to comprehend the clinical implications and their solutions for this new variant, the case is reported.

2. Case repor

During routine observation of ulna in the osteology lab of department of anatomy, CSM Medical University, Lucknow, UP, India, four ulnae out of 100 ulnae were observed to have abnormal bony projections from the posterior part of superior surface of the olecranon process. The incidence of this bony projection is 4%. The average length, width and thickness were 9 mm, 1.2 mm and 4 mm respectively. There was no other abnormality in these samples.

3. Discussion

Bone spurs are bony projections that develop along the edges of bones. Also called osteophytes, bone spurs often form where bones meet each other in your joints [2]. They should not be confused with enthesophytes, which are bony projections which form at the attachment of a tendon or ligament [3]. Bony Projection may be formed when osteogenic layer lying beneath the periosteum is detached thereby activating the osteocytes. These lay down the extra bony growth. Bony projections/ bony out growths are also known as exostosis. Bony out growths are common in shoulders, knees and feet etc. Abnormal bony projections have also been reported on iliac crest [4], obturator foramen [5] and external occipital protuberance (singh R, unpublished data). Inflammation of the Achilles tendon can lead to the formation of a bone spur at the back of the heel bone (calcaneus bone). Inflammation of the tissue on the bottom of the foot, plantar fasciitis, can lead to a bone spur at the underside of the heel bone. These bone spurs are sometimes referred to as heel spurs [6]. But the same from the posterior aspect of superior surface of olecranon process of ulna is not reported so far as known to the author.

Posterior part of superior surface of ulna gives insertion to triceps brachi muscle. This muscle is the strong extensor of elbow joint. When this muscle is excessively used it may give rise to such type of bony projections in two ways- (1) Due to over stretching of the muscle near the insertion, there might be microtrauma which ultimately calcify and ossify giving rise to bony projections. (2) Due to overuse, the periosteum may be elevated, activating osteocytes of the osteogenic layer underlying the periosteum. The osteocytes might lay down the bony tissue forming exostosis.

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Abnormal blood calcium levels in calcium metabolism disorder may also lead to calcium deposition leading to formation of bony projections. Moreover, exostosis may be due to disturbance of endochondral ossification which may be hereditary transmitted.

This bony tubercle may impinge on triceps muscle and neurovascular structures causing spasm of the muscle leading to pain during biomechanical movement of elbow and neurovascular complications. The bony projection may injure the structures surrounding the bony growth when olecranon process occupies the olecranon fossa during full extension of elbow. It may be very useful for radiographic interpretation..

Thus knowledge of this bony projection is of paramount importance to clinicians, radiologists and anatomists.

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