

PSEUDOTUMOR DELTOIDEUS, A RARE NORMAL VARIANT: A FALLACY CAUSE OF SHOULDER PAIN

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ABSTRACT

Pseudotumor deltoideus is an uncommon cause of shoulder pain, which appears as a focal area of cortical irregularity and lucency on radiological X-ray imaging. Since it is a rare condition so it needs to be differentiated from other cortical bone tumors. It is mandatory to correctly diagnose this rare normal variant on the basis of clinical history and radiological grounds to prevent unnecessary procedures. To the best of our knowledge, this is the first case report on pseudotumor deltoideus in Pakistan.

Introduction

Pseudotumor deltoideus is a normal anatomic variant seen at the deltoid insertion site in proximal humerus. This term was first introduced in 2001 by Morgan. He reported a series of cases which described the lesion as a lucent area with cortical irregularity at the deltoid insertion on a radiograph. The patient maybe asymptomatic or may present with pain. Because of its radiological appearance, it may mimic a tumor or infection leading to unwanted procedures and patient's anxiety.¹ Few case studies on latissimus dorsi insertion site have also showed similar radiological findings accompanied by pain with no history of trauma.² Damron et al observed a similarity between sarcoma symptoms and some sports-related injuries or pseudotumor. He indicated that they could be a cause of potentially excessive treatment. Hence it's cardinal to carefully look at the clinical history and radiological imaging of patient.³

Case Report

A 37-year-old male with no known co-morbid presented to our radiology X-ray department with complaints of

right shoulder pain for 3 months. He had a history of trauma 3 months back in which a door had struck his right shoulder and since then, he had pain in his right



Figure 1: X-Ray Shoulder AP view shows cortical thickening over the lateral aspect of humerus (arrow head).

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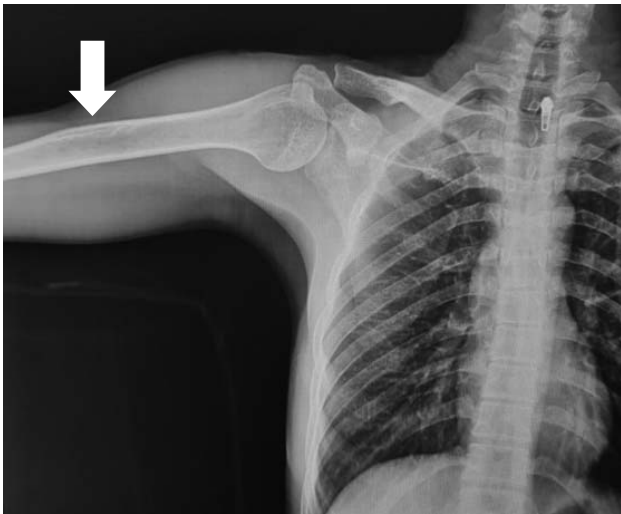


Figure 2: X-Ray Shoulder lateral view shows focal cortical thickening with central lucency along the lateral aspect of humerus at the deltoid insertion site.

shoulder radiating up to the axillary region, especially while playing sports (cricket). He also had a previous history of road traffic accidents where he was hit by bike 2 years prior.

Plain X-ray radiological examination of shoulder joint AP and lateral was done which demonstrated a focal cortical thickening in the proximal humerus along the lateral aspect of the deltoid insertion site accompanied by intracortical lucency.

Discussion

Pseudotumor deltoideus is a non-malignant rare anatomic variant at the deltoid insertion site and is a fallacy cause of shoulder pain. Patients with pseudotumor deltoideus could either present symptomatically with pain or asymptotically with incidental radiological findings.¹

In a case series report by Morgan et al, which included five patients aged 25-76 years, two patients were asymptomatic and three patients were symptomatic that presented with complaints of lateral shoulder and upper arm pain in the dominant arm which was either acute or chronic persisting for 10 weeks, 4 months, and 1 year respectively. He described the lesion as focal area of cortical irregularity with central lucency at deltoid insertion site.¹

Gulsen Aykol reported a similar case of a 30 year old female with dominant right arm pain. However, there was no history of trauma or sports activity. On x-ray shoulder joint, a well-defined cortical thickening and irregularity was observed with intra-cortical linear lucency at the deltoid insertion site.⁴

Another case reported by Singh S, in which, he described the case of a 44 year old male presented with intermittent moderate type of pain in the lateral part of right shoulder that became worse with activity and difficulty in lifting arm. In this case, no history of trauma, sports activity or heavy weight lifting was recorded. On x-ray examination of humerus, a focal area of cortical thickening and irregularity was observed. Hemogram and serological test were within normal limit.⁵

In our case, patient is symptomatic and presented with shoulder pain for three months with similar radiological findings as describe by Morgan et al. However, in our case, patient also had a history of trauma and sports activity. Due to the characteristic appearance of the lesion and symptomatic etiology, it should be distinguished from other pathological conditions like fibrous cortical defect, avulsion injury and calcific tendinitis which may show similar radiographic appearances. Perfect diagnosis should implement if patient presented with symptomatic complains.⁵

In cases of fibrous cortical defect, the radiographic appearance is similar to pseudo tumor deltoideus. Both lesions most commonly involve the metadiaphysial aspect of long bone. However, fibrous cortical defect is not just limited to the deltoid insertion site and may extend beyond that region. It appears as well-defined intracortical lytic lesion with a thin rim of cortical thickening. The cortex is occasionally expanded and thinned but remains intact.⁶ Similarly another differential includes calcific tendinitis in which the lesion shows focal calcific deposits in the soft tissues with adjacent cortical thickening and irregularity. The absence of soft tissue component and calcification in pseudotumor deltoideus helps in differentiating it from calcific tendinitis.⁷ In avulsion injuries, initial x-rays may be normal. However in cases of chronic avulsive injury, cortical defect with soft tissue swelling and periosteal reaction may be observed.⁸

Conclusion

Pseudotumor deltoideus is a rare anatomical variant that needs to be differentiated from other pathological cortical bone tumors. In constellation with proper clinical history and radiological imaging findings solely on X-ray, we can bridge ourselves to precise diagnosis and favorable treatment to prevent unnecessary interventions.

Conflict of Interest: None

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