



OLECRANON BURSITIS –ULTRASONOGRAPHY AND MR IMAGING: A CASE REPORT

Radiodiagnosis

Dr. Konika Chaudhary*

Resident Of Radiodiagnosis Dept . JNMC, Sawangi, Wardha *Corresponding Author

Dr. Suresh. V. Phatak

Professor And Hod, Dept. Of Radiodiagnosis, JNMC, Sawangi, Wardha

ABSTRACT

Olecranon bursitis is the inflammation of the bursa cavity superficial to the olecranon. It is an uncommon condition .There is large number aetiologies associated with this entity, it can occur with or without infections. An essential imaging technique in the diagnosis of olecranon bursitis is musculoskeletal ultrasonography, mostly for early symptoms .It is helpful in distinguishing soft tissue lesions from bony lesions and detection of minimal fluid collection. MRI is the gold standard for musculoskeletal pathology.We are reporting a case of olecranon bursitis with classical imaging findings.

KEYWORDS

OLECRANON BURISITIS,UTRASONOGRAPHY, MRI

INTRODUCTION –

The olecranon bursa is a subcutaneous space lined with a synovial membrane that secretes fluid that helps in effortless and frictionless continuous motion between the skin, the subcutaneous tissues, and the olecranon. It is a frequent site for injury, inflammation, and infection due to its superficial location and decrease vascularity [1]. There are various causes and of posterior elbow pain, olecranon bursitis is one of them (2). Olecranon bursitis is defined as an abnormal increase in the volume of fluid within the bursa cavity overlying the olecranon at the proximal aspect of the ulna. It is caused due to various aetiologies such as trauma, infection and certain medical conditions due to its limited vascularity, infection occurs via a transcutaneous route, rather than via haematogenous spread, even when no obvious wound is present. Staphylococcus aureus is the most commonest bacteria causing olecranon bursitis, with beta-haemolytic streptococcus also being common. Olecranon is mostly affected by an inflammatory process out of all 150 human bursa (3). It is a clinical diagnosis but musculoskeletal ultrasonography is the best modality of choice to diagnose olecranon bursitis mostly during early manifestations.

CASE REPORT

A 15 year old student came to the OPD with pain, swelling, redness in the posterior elbow, she also gave the history of working in the farm and on examination there was tenderness overlying the olecranon in the proximal aspect of the ulna with restricted motion at elbow joint. She was sent to the radiology department for musculoskeletal ultrasonography the elbow. On ultrasonography there was fluid collection in the olecranon bursa with synovial hypertrophy and hypervascularity on doppler. On MRI olecranon bursitis appeared as hypointense on T1 and hyperintense on T2 and showed post contrast enhancement. Her chest x-ray and routine blood investigation were in normal limits. Patient recovered completely with single course of antibiotics.

DISCUSSION –

Olecranon bursitis is the inflammation of the bursa adjacent to the olecranon. Repeated episodes of aseptic inflammation of the bursa over the olecranon is because of its superficial location. During work, frequent trauma to the elbow leads to various forms of occupational bursitis such as “student's elbow” or “miner's elbow” (1, 5). In football players who play on artificial turf it has been reported that olecranon bursitis can be due to overuse, frequent trauma, inflammatory arthropathy, or obesity. Other causes of aseptic olecranon bursitis include rheumatoid diseases and gout. Olecranon bursitis occurs in up to 7 percent of patients receiving haemodialysis due to prolonged pressure on the arm with vascular access by excessive haemobursitis or uraemic serositis. Only about 25 percent of the cases of olecranon bursitis are septic. Trauma causes break in the skin or in the surrounding soft tissue if there is infective foci which helps in the entry of the bacteria into the bursa. Large number of patients with

septic olecranon bursitis has no history of trauma or a visible injury over the olecranon therefore penetration from minute break in the skin rarely happens. Most common causative factor is due to impaired immunity. Alcohol abuse is the most important and common cause, other reasons are steroids, diabetes, renal impairment and malignancy. Septic and aseptic bursitis can be difficult to distinguish clinically due to the lack of specific clinical signs and symptoms. For the diagnosis of infection culture of the aspirated fluid from the bursa is required (1). On Plain elbow radiographs olecranon bursitis will show as intra-articular pathology, an olecranon spur or osteomyelitis. In case of trauma, x-ray of the elbow is done to rule out for a possible fracture. Musculoskeletal ultrasonography of elbow is the simplest and fastest way to diagnosis for olecranon bursitis as there is fluid collection in the olecranon bursitis in early stages which could be missed clinically. Advantages of ultrasonography are short examination time, low cost, non-invasive character and patient comfort, related to exposure to ionizing radiations (2). It is essential to observe the red flag signs indicating a neoplastic pathology mimicking a simple olecranon bursitis. Such signs include a rapidly expanding growth, failure of initial treatment, weight loss and prior history of neoplasia. (3) To examine the posterior elbow the important structures are the distal triceps muscle and tendon, posterior joint recess, olecranon bursa, and ulnar nerve within the cubital tunnel. The joint is placed in 90 degree of flexion, the forearm fully pronated (internally rotated), and the palm resting on a table (“crab” position) this is ideal position to examine the posterior elbow. For the examination of the ulnar nerve, the patient may be supine with the arm abducted, flexed, and internally rotated or prone with the arm adducted by the side and internally rotated (4,5). On colour doppler there is hypervascularity this is has a rim like peribursal pattern. On usg there are different appearances of the fluid depending on the etiology such as in crystal deposition disease on ultrasonography there is hyperechoic fluid collection and accompanying thickened and echogenic bursal walls. The fluid may appear complex with edema of the surrounding soft tissue with features of cellulitis in hemorrhagic or septic bursitis. These appearances alone can not help in diagnosis so ultrasound guided fluid aspiration with culture with usually helpful to diagnose the etiology of the disease. Calcified bursitis is seen in patients with chronic renal diseases (6). On CT olecranon bursitis will appear as fluid density at the subcutaneous tissue superficial to the elbow. MRI is done in patients when we have to rule out spread of disease or osteomyelitis. It is hypointense collection on T1-weighted images with variable signal intensity in T2-weighted sequences over the olecranon with post contrast enhancement. Tricep brachii muscle and subcutaneous edema as well as elbow joint effusion may be seen (1)

CONCLUSION

Olecranon bursitis is uncommon condition affecting musculoskeletal system and ultrasound and MRI are the best modalities for its diagnosis.



Figure1- In Gray Scale Ultrasound –there Is Evidence Of Fluid Collection In Bursa With Debris.

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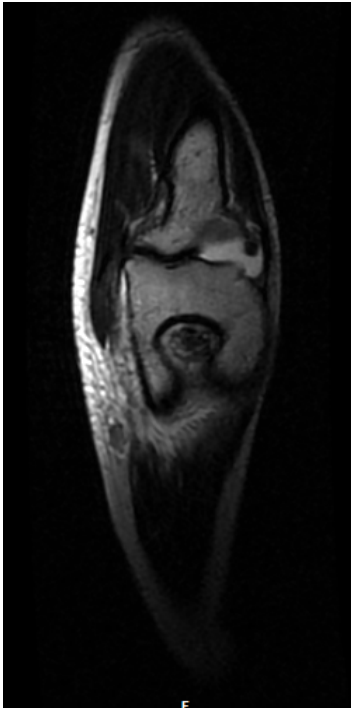


Figure 2- Mri In Sagittal T2wi There Is Evidence Of Hyperintense Fluid Collection In The Olecranon Bursa

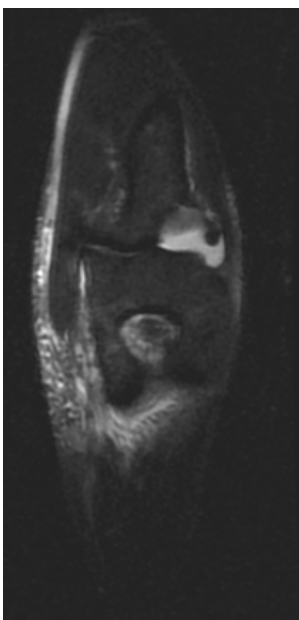


FIGURE 3- IN SAGITAL STIR THERE IS EVIDENCE OF HYPERINTENSE FLUID COLLECTION IN THE OLECRANON BURSA