Osteosarcoma presenting as Tuberculosis at Elbow: Clinical dilemma

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ABSTRACT

Introduction: In India Tuberculosis is quite prevalent and we often overlook other lesions due to this. In our case middle aged man was misdiagnosed as tuberculosis of elbow initially though he had Osteolytic Osteosarcoma. **Case report:** A forty years old man, was admitted with chief complaints of: pain in left elbow joint from last three months, swelling with restricted movements since two months and fever, of one month duration. History of mild trauma was positive with loss of weight and appetite but without cough, expectoration or night sweats. X-rays of left elbow revealed generalized demineralization with soft tissue swelling and opacity on the medial side of joint with evidence of medial cortical destruction in supracondylar region suggestive of Tuberculosis. MRI left elbow revealed long segmental aggressive lesion. **Conclusion:** To avoid confirmation bias the clinicians should consider other possibilities as well.

Key words: Osteosarcoma, Tuberculosis, Technology Radiologic.

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INTRODUCTION: In India Tuberculosis claims 1300 lives per day. There are two million new cases and 500 deaths a year [1]. This may be the reason for cognitive error on part of clinicians due to availability. Such cherry picking is termed "confirmation bias" referred to as anchoring. Anchoring is a shortcut in thinking where a person doesn't consider multiple possibilities but quickly and firmly latches on to a single one, sure that he has thrown down his anchor down just where he needs to be [2].

We here by present an interesting case of a middle aged man which was misdiagnosed as tuberculosis of elbow though he had Osteolytic Osteosarcoma.

CASE REPORT:

A forty years old man, laborer by occupation presented in our Orthopedic out patients department with chief complaints

of: pain in left elbow joint from last three months, swelling with restricted movements since two months and fever of one month duration.

He was apparently well three months back. One day, when he was tired and snoozing in sitting position over a wooden bench, he lost control and fell down and hurt his elbow. He developed dull aching pain, mild to moderate in intensity which increased on movement and decreased after taking pain killers. He kept on doing his work without leave. After one month he developed swelling over his left elbow joint which was gradual in onset, slowly progressive, diffuse in nature with no increasing or decreasing factors. Simultaneously slowly the movements also got restricted. At this stage he went to the local practitioners and undertook massage daily with some special oils. Subsequently he started having high grade fever off and on, not associated with chills and rigor with no diurnal variations and relieved by taking medicines. There was positive history of loss of weight and appetite but without cough, expectoration or night sweats. No history of any other lump in the body. Patient was non vegetarian, chronic tobacco chewer, non alcoholic and non smoker.

On local examination at inspection, patient was supporting his left elbow in ninety degree flexion position with opposite hand, which was grossly swollen all around, with clear demarcation superiorly till mid arm and inferiorly till mid forearm with extension over dorsum of hand also. Skin over the swelling was tense and glossy with some redness laterally without venous prominence. Swelling was non pulsatile.

On general examination patient was cachectic. Pallor was positive, icterus was absent with no lymphadenopathy. There was normal vesicular breathing and no hepato splenomegaly. Skull, Spine, Pelvis and femoral trochanters were apparently normal. There were no sinuses, ulcers or any scar over the swelling (Figure 1).

On palpation local temperature was raised. Tenderness was not markedly positive. Consistency was variable with no molding on pressure. Fluctuation and translucency tests were negative. Swelling was non pulsatile and immobile .Skin over the swelling was not fixed. Radial arteries on both sides were equal and no neurological deficit was noted. On

auscultation no bruits or murmurs were present. Patient was hardly able to move his elbow say five degree only on persuasion.

Figure 1- showing gross swelling of left elbow.

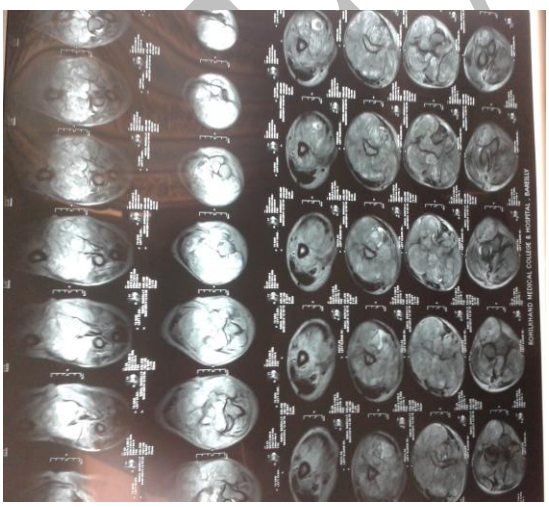
On investigation hemoglobin was nine gm%, Total leucocytes count 16,100/cu.mm, polymorphs 85, lymphocytes 12, eosinophils one, monocytes two. ESR 65 mm in 1st hour. Serum calcium 8.6 mg %, Serum alkaline phosphatase 104 IU/L. Xray Chest PA view was normal. X-ray of left elbow AP and Lateral views revealed generalized demineralization with soft tissue swelling and opacity on the medial side of joint with evidence of medial cortical destruction in supracondylar region suggestive of Tuberculosis (Figure 2a and 2b).

AP view

Lateral View

Figure 2a and 2b- AP and Lateral views of elbow.

MRI left elbow revealed long segmental aggressive lesion, replacing the marrow of distal humerus with periosteal reaction, cortical disruption, intra-articular extension and large lesional soft tissue component. On the basis of image morphology –malignant neoplastic lesion most likely Osteosarcoma (Figure 3a and 3b). Patient was subsequently referred to a cancer institute for limb salvage surgery.



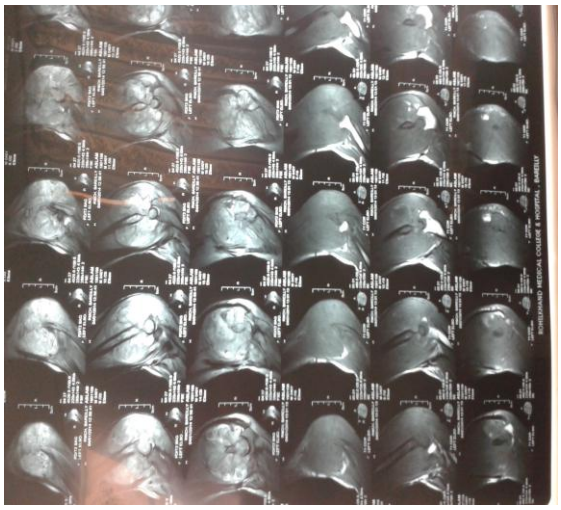


Figure 3a and 3b- MRI images of patient.

DISCUSSION:

Osteosarcomas are the most common primary malignant tumours of the bone, excluding those of hemopoetic origin. Peak incidence is in adolescent years, but a second peak is seen in advanced age [3]. In our case the patient was forty years old. Incidence is 1/75,000 population and has male preponderance [4]. In our case also patient was a male. Ninety percent of cases are in metaphyseal region of ends of long bones with predilection around knee and upper humerus [4]. In our case the site was lower end of humerus.

In our patient there was a positive history of injury as he told us that everything started after he fell over the elbow. In skeletal tuberculosis following injury the vessels rupture and there is hemorrhage. Tubercle bacilli present in circulation settle and proliferate in the blood clot so formed [5]. In Osteosarcomas as well, history of injury is a common feature [4].

Diagnostic triad best sums up the clinical features of tuberculosis which include insidious onset, constitutional symptoms like evening rise of temperature, loss of appetite, loss of weight, night sweats, anemia and monoarticular involvement. Pain in joint is dull aching and chronic in nature. Night cries may be present. Joint movements are decreased in all directions initially due to muscle spasm and later due to arthritis. Wasting of muscles is gross and out of proportion. Regional lymph nodes may be enlarged [4]. In Osteosarcomas patient usually presents with pain as the first symptom. General condition is good until the late stages. Pyrexia is seen with increased WBC. Patient is usually anemic than cachetic. Skin over the tumour is stretched, shiny and mobile. Local temperature is raised, constituency is variable, dilated veins are present. Hemoglobin is decreased while ESR and lymphocytes are increased. [4].

Radiological features on a plain X-ray in tuberculosis are: localized osteoporosis initially. The articular margins and bony cortices become hazy; (giving a “washed out “appearance) there may be development of areas of trabecular or bony destruction and osteolysis. The synovial fluid, thickened synovium, capsule and pericapsular tissues may cause a soft tissue swelling [5].In our case changes were on similar pattern. In Osteosarcoma there is usually sclerosis or destruction of bone at the metaphysis.

Sunrays appearance and Codman's triangle are special x-ray features [4]. As these typical features were absent we had almost excluded this possibility. At the same time tumor may show wide variety of radiological appearance and the classic features are often missing. Some of the histological subtypes as telengectic and small cell variants may demonstrate purely lytic lesions in bone with little or no ossified matrix [3].

Yoshida and Tokuhashi [6] have also reported an interesting case of 48 yrs male with Osteosarcoma of humerus where patient's main symptom was upper arm pain, and there was nothing in history or medical records to give reason to suspect Osteosarcoma. X-rays showed pathological fracture upper end of humerus along with hypertranslucency of bone, mainly involving osteolytic changes.

CONCLUSION:

In our case the breakthrough came after MRI and subsequently we had to change the path of treatment. As Osteolytic Osteosarcoma remained low on the index of suspicion this case has become an eye opening incident for us with a lesson that to avoid this type of cognitive error we should consider multiple possibilities.

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