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Case Report Open Access

Osteolytic Metatarsal Lesion: A Case of Foreign Body Foot

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Abstract

A case of lytic lesion foot with no definite history of trauma presented with diagnostic challenge as being potentially malignant. On routine evaluation and subsequent imaging especially USG foot foreign body was suspected. With all relevent differential diagnosis in mind surgical exploration and biopsy was done which confirmed foreign body and foreign body granuloma induced lytic lesion of foot. Foreign body trauma and its sequele should be kept in defferential diagnosis in foot diseases when likely hood of penetrating foreign body is quite high like labourers and housewives.

Keywords: Osteolytic lesion foot; Foreign body reaction foot; Ultrasound and foot

Introduction

Foreign body injuries of the foot present orthopaedician with several intriguing dilemmas, in formulating a sound diagnostic and treatment plan. These injuries range from trivial trauma to sever incapacitation of an individual. The injuries should not be considered trivial, since failure to remove all of the foreign body may lead to joint destruction, infection, or even loss of part of limb [1].

History of the injury may be vague, but it is necessary for the treating physician to elicit clear and informative history for determining the diagnostic measures to be taken. Physical examination of a plantar puncture wound with surrounding edema, erythema, and tenderness is suggestive of a retained foreign body. In trivial injuries and chronic cases such features are usually lacking. These foreign bodies may implant deeply, and if not quickly removed, can be a source of chronic frustration to both the patient and treating doctor [2].

Extraction of foreign bodies may be very difficult due to lack of adequate visualization and size of foreign body, depending on nature of foreign body. Frequently difficulty in localization and a minor miscalculation can promote unnecessary probing and needless tissue damage, in addition to hours of anesthesia and surgery.

Case Report

A 35 year old female attended our outpatient department with an insidious onset of pain and intermittent swelling on dorsum of her right foot from last 3 years. The patient herself and her family did not recall any definite penetrating injury to her foot. Clinical examination revealed a small, tender area overlying the head of 3rd metatarsal with no local signs of inflammation. Conventional x-ray of the foot revealed an osteolytic lesion with a sclerotic rim in the head of the 3rd metatarsal (Figure 1). High resolution ultrasound was advised which revealed echogenic structure with respect to metatarsal head possibly Foreign body (Figure 2). CT scan revealed an irregular soft tissue lesion with destruction of plantar cortex of the proximal end of the 3rd metatarsal bone. After expalantion of likely defferentials for this lesion, Exploration of lesion was performed and a rubber piece of about 5 mm size found surrounded by granulation tissue was retrieved and sent for histopathological examination and culture sensitivity (Figures 3 and 4). Histopathological report revealed reactive granuloma and rubber foreign body and no growth of any organism after 24 hours of incubation. About 10 weekss following surgical retrieval of foreign body patient became symptom free and resumed her activities. Patient is under regular follow up and there is no fresh compliant and no radiographic evidence of any recurrence.

Figure 1: Radiograph showing lytic lesion.

Figure 2: Ultrasonograpghic image determining echogenic strcture with respect to metatarsal head possibly Foreign body.

Discussion

Penetrating injury to the hands and feet by foreign body is common injury due to constant exposure of these extremity structures. Immediate foreign body removal cause little morbidity. Most of these injuries are caused by thorns or splinters of wood that are retained in the hand or foot creating a foreign body granuloma [3]. In feet sleeper nail injuries caused by penetrating trauma through sleepers (footwear) are very common in labourers, farmers and housekeepers. Embedded thorns have been reported to cause bone lesions resembling those of osteomylitis [4]. Organic/foreign material when present in or near a bone can produce a pathological reaction, either osteolytic, osteoblastic

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Figure 3: Showing location of foreign body and retrieved foreign body.

or combination of these and radiological appearance of which may resemble a soft tissue/bony tumor (lytic lesion). Symptomatic lesions may appear years after initial injury and patient may not recall a specific traumatic event at all [5]. Because of exposure, hands and feet are the most common site for such injuries. In case of feet, five metatarsal cases, one cuneiform, one cuboids and one phalangeal lesion have been reported in the literature [6-10]. Thorns have been shown to cause foreign body cysts, bursitis, tenosynovitis, synovitis & also bony reaction. such case reports in the literature reveal a consistent feature of patient's delay in seeking medical advice and clinician's delay in reaching correct diagnosis. In thirty-one reported cases, nineteen had osteolysis, five had periosteal reaction without osteolysis and seven cases had a combination of both. The mean time at presentation in different case reports in the literature was 4 months [11]. In recent years with the use of Ultrasound, CT scan and MRI scans, foreign body detection has been increased [12-14]. But it has been also reported that splinters that have been there for less than three days are not detected reliably by any of the imaging method [13]. Some foreign bodies in various body parts don't cause symptoms and need not to be removed on routine basis.

Conclusion

The presence of a foreign body in or adjacent to a bone induces a foreign body reaction, osteolysis and/or periosteal reaction of the bone. One should be aware of the characteristic clinical and radiological presentation in the differential diagnosis of hand and foot tumors. Treatment should be aimed at proper diagnosis supplemented with imaging for definitive treatment and confirmation of the lytic lesion with histopathology.

References

1. Alfred RH, Jacobs R (1984) Occult foreign bodies in the foot. Foot Ankle 4: 211

2. Newman JT, Hunt DW (1989) Toothpick foreign body in the foot. J Am Podiatr Med Assoc Tg: 458-460.

3. Borgia CA (1963) An unusual bone reaction to an organic foreign body in the hand. Clin Orthopaedics 30; 188-193.

4. Rosenfield R, L Spigelblatt, R Chicoine, M Laverdiere (1978) Thorn induced periostetitis associated with Enterobacter agglomerans infection. Canadian MedAss J 119; 925.

5. Reginato AJ, Ferreiro JL, Carolyn ROC, Ceferino B, Javier A, et al. (1990) Clinical and pathologic studies of 26 patients with penetrating foreign body injury to the joint, bursae and tendon sheaths. Arthritis Rheum. 33: 1753-1762.

6. Floman V, Katz S (1975) Osseous lesion simulating bone tumour due to an unexpected fragment of wood in the foot. Injury 6: 344-345.

7. Middha V P, Vaishya R (1990) Lesions produced by splinters of wood in soft tissues and bone. Int Orthopaedics 14: 47-48.

8. Weston WJ (1963) Thorn and twig induced pseudotumours of bone and soft tissues. British J Radiology 36: 323-326.

9. Hughes SF, Maffulli N, Fixsen JA (1992) Thorn induced granuloma of the medial Cuneform. J Foot Surgery 31: 247-249.

10. Vousefzadeh D K, Jackson JH Jr (1978) Organic foreign body reaction. Skeletal Radiology 3: 167-167.

11. Durr H D, Stabler A, Muller PE, Refior HJ (2001) Thorn induced Pseudotumor of the metatarsal. J Bone Joint Surg 83; 580-584.

12. Baneee B, Das RK (1991) Sonographic detection of foreign bodies of the extremities. British J Radiology. 64: 107-112.

13. Mizel MS, Steinmetz ND, Trepman E (1994) Detection of wooden foreign bodies in muscle tissues: experimental comparison of C.T, MRI and ultrasonography. Foot Ankle International 15: 437-443.

14. Kornreich L, Katz K, Horev G, Zeharia A, Mukamel M (1998) Preoperative localization Of foreign body by magnetic resonance imaging. European Journal of Radiology 26: 309-311