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Antipersonnel mine injury: A souvenir from war

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Description

The ability to detect foreign bodies in the musculoskeletal system using conventional radiography relies on the variable absorption of X-rays by materials of different density and atomic number. Various types of metallic foreign body have been reported, including bullets, needles, metal splinters, screws, migrated surgical material, acupuncture needle tips and even mercury from a broken thermometer [2,3]. In most cases, metal objects retained in soft tissue are managed conservatively, as they are encapsulated by fibrous tissue and generally remain inert [3].

Discussion

A 75-year-old male presented to our radiology department with mild, chronic discomfort in the right thigh. The pain was non-radiating, intermittent, and not associated with any acute trauma, redness, or swelling. The patient was otherwise healthy and had no recent trauma or surgical intervention involving the lower limbs. A standard anteroposterior and lateral X-ray of the right thigh was obtained. The radiographs revealed a well-defined, radiodense, metallic foreign body measuring approximately 1.5 cm, located in the anterior compartment of the mid-thigh, embedded within the vastus intermedius muscle (Figure 1). There was no surrounding periosteal reaction, calcification, or signs of active inflammation. Following the unexpected radiographic finding, a more detailed medical history was obtained. The patient recalled sustaining a landmine explosion injury during military service over 50 years ago, resulting in superficial sharpnel wounds that were treated conservatively at the time. He reported no prior knowledge of retained foreign bodies in the thigh. Metallic foreign bodies can cause complications through a variety of mechanisms. Firstly, they can lead to chronic irritation of the surrounding tissue, either as a sterile reaction, or due to delayed infection, as in the case of brain abscesses or osteomyelitis. These delayed infections are often linked to hematogenous dissemination rather than the initial penetration of the pathogen with the foreign body. Secondly, these metal fragments can promote the development of benign or malignant tumors. Although the exact link with tumorigenesis remains uncertain, chronic inflammation may trigger a cascade of events involving stem cell activation [4]. Finally, metal fragments can migrate to other parts of the body under the influence of gravity, physiological movements (breathing, swallowing) or bodily flows such as blood circulation, urine or bile flow, thus leading to secondary complications [5].

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Figure 1: Radiography of the thigh, front and side view, showing three metal foreign bodies projected into the posterior soft tissues of the thigh with no associated bone lesions.

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