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TEST YOURSELF: ANSWER

Enlarging right thigh mass

Answer – Ischemic fasciitis

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Discussion

The initial MRI demonstrates a subcutaneous mass overlying the posterior facet of the right greater trochanter, in broad communication with the iliotibial band. It is of isointense T1-weighted signal compared to skeletal muscle (Fig. 1a), hyperintense signal on STIR (Fig. 1b), and demonstrates peripheral enhancement post-contrast with a central stellate, linear region of non-enhancement (Fig. 2). Ultrasound demonstrates an avascular hypoechoic mass (Fig. 3). A photomicrograph (4× H&E) obtained after needle biopsy shows fibrous tissue with ischemic-type necrosis, granulation tissue, and degenerative cytological atypia (Fig. 4). A follow-up MRI study performed 21 months later demonstrated complete resolution of the mass with minor residual subcutaneous scarring (Fig. 5).

Ischemic fasciitis, also known as atypical decubital fibroplasia, was first described by Montgomery et al. in 1992 [1]. It is a rare pseudo-sarcomatous fibroblastic proliferation, occurring at bony prominences or pressure points in elderly bed-ridden patients, with a female preponderance and peak age of incidence in the 8th–9th decades. It belongs to a group of other pseudo-sarcomatous lesions, including nodular fasciitis, proliferative fasciitis, and proliferative myositis [2].

Patients typically present with a 1 to 8 cm soft tissue mass of short duration (< 6 months), commonly involving soft tissue at the shoulders, ribs, sacrococcygeal region, and greater trochanters [3, 4]. Lesions are usually in the subcutis, although may involve the dermis leading to epidermal ulceration, striated muscle, and adjacent periosteum [4]. The etiology is unknown, although trauma is a precipitant. The pathogenesis is related to intermittent ischemia, leading to tissue necrosis and breakdown followed by a regenerative and reparative process [5, 6].

MRI typically demonstrates a poorly circumscribed subcutaneous soft tissue mass at a pressure point with peri-lesional soft tissue edema, which is isointense to skeletal muscle on T1-weighted sequences and hyperintense on T2-weighted sequences. There may be associated breach of the fascia. Following gadolinium administration, there is intense peripheral enhancement with a non-enhancing central component, reflecting necrosis. A necrotic abscess or soft tissue sarcoma can have a similar appearance [2, 4, 7].

Macroscopically, lesions appear ill-defined, multinodular, and tan in color [4]. Microscopically, the hallmark of ischemic fasciitis is zonal variations with central fibrinoid necrosis surrounded by proliferative fibroblasts and prominent vessels [3, 5, 8]. Kaneko et al. described a sonographic biphasic zonal pattern in ischemic fasciitis (avascular hypoechoic central zone and hypervascular hyperechoic external zone), which reflects this distinctive histological zonal appearance [8]. Ultrasound can also guide needle biopsy, which was performed in this case and confirmed the presence of ischemic fasciitis.

In general, local excision is the treatment of choice, since if left untreated the lesion may persist and is often painful. In this case, the mass spontaneously resolved. Kaneko et al. [8] and Lehmer et al. [9] also described spontaneous resolution in 6 months-2 years following behavioral modification. Following resection, local recurrence is rare and there are no reported cases of malignant transformation [3, 4].

Ischemic fasciitis is rare and can simulate soft tissue sarcoma clinically, radiologically, and histologically. As elderly, immobilized patients with poor operative and anesthetic risks are affected, awareness of this rare condition is essential to prevent unnecessary over-treatment.

The case presentation can be found at https://doi.org/10.1007/s00256-018-3030-5

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

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