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Case Report

Massive gluteal mass mimicking sarcoma: Chronic expanding hematoma

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ABSTRACT

Chronic expanding hematomas (CEH) are rare presentation of hematomas characterized by its long-term persistence and chronic expansion. It had been a challenge for clinicians to differentiate CEH from hemorrhagic neoplasms, both clinically and radiologically. In Case 1, patient was presented with a massive gluteal mass lasting for 5 years. In our diagnostic approach, magnetic resonance imaging and ultrasound-guided biopsy helped us to get the initial impression of the mass and direct the surgical planning. Definitive diagnosis was done by pathological examination. In Case 2, the patient was presented with a intraooseous chronic expanding hematoma of the left ilium. The patient was treated with an endoscopic assisted tumor excision and prolonged drainage to preserve the live quality and function of the patient. After reviewing the related articles, we conclude that when CEH is suspected, especially in presence of history of trauma, early excision remains the gold standard for treatment. From the present researches on the cellular effects of blood breakdown products, we also suggest early intervention of chronic hematomas to avoid chronic expansion and associated bony destruction.

1. Introduction

Rapid reabsorption without causing clinical problems is expected in hematoma in common clinical practice. However, in rare cases, hematomas may persist and slowly expand, as Reid et al[1] advocated in 1980, as chronic expanding hematoma (CEH). Cases of CEHs had been reported to erode the adjacent bone and soft tissue mimicking the behavior of aggressive hemorrhagic sarcomas.[2] Under such circumstance, differential diagnosis of CEH from sarcoma becomes a clinical challenge for clinicians. Herein, we present two cases of CEHs. Various imaging tools had been used to assist the differential diagnosis. However, clear-cut diagnosis was unable to reach without pathological examinations.

2. Case report

2.1. Case 1

A 78-year-old woman with history of chronic renal failure presented with a huge painful mass of the left gluteal region. Patient first noted the mass 5 years ago and initially chose to ignore the lesion because it used to be painless and her ability to ambulate was not affected. Patient denied any history of trauma to the affected region before appearance of this mass. The mass remained approximately the same size for the first 4 years. One year before her admission, this lady sustained a nondisplaced fracture of the left femeral neck, which was treated with close reduction and internal fixation with cannulated screws. Patient denied size change of the mass after the event. Five months before presentation, the patient noted a rapid expansion of gluteal mass. Painful sensation ensued with the rapid expansion of mass.

At time of the presentation, clinical examination demonstrated a firm, smooth, immobile, posterior gluteal swelling extending to the posterior upper thigh measuring 20 cm × 25 cm. The mass was tender to palpation. No sign of inflammation or skin change were noticed. Laboratory investigations include a normal white blood cell (8500/mL) and platelet (239,000/mL), hemoglobin level (6.3 g/dL), and normal serum chemistries and coagulation studies (prothrombin time = 13.2 seconds, international normalized ratio = 1.3, activated partial thromboplastin time = 29.9 seconds).

Magnetic resonance imaging with contrast enhancement was obtained for evaluation of the mass, which revealed a mass lying in the interfascial plane under gluteus maximus measuring 20 cm × 15 cm × 25 cm in mediolateral, anteroposterior, and craniocaudal diameters, respectively (Fig. 1). The mass was found to be multinodular, well circumscribed with a thin peripheral rim of tissue of low-signal intensity in both T2-weighted (T2W) (Fig. 1A) and T1-weighted (T1W) (Fig. 1B) consisting of fibrous

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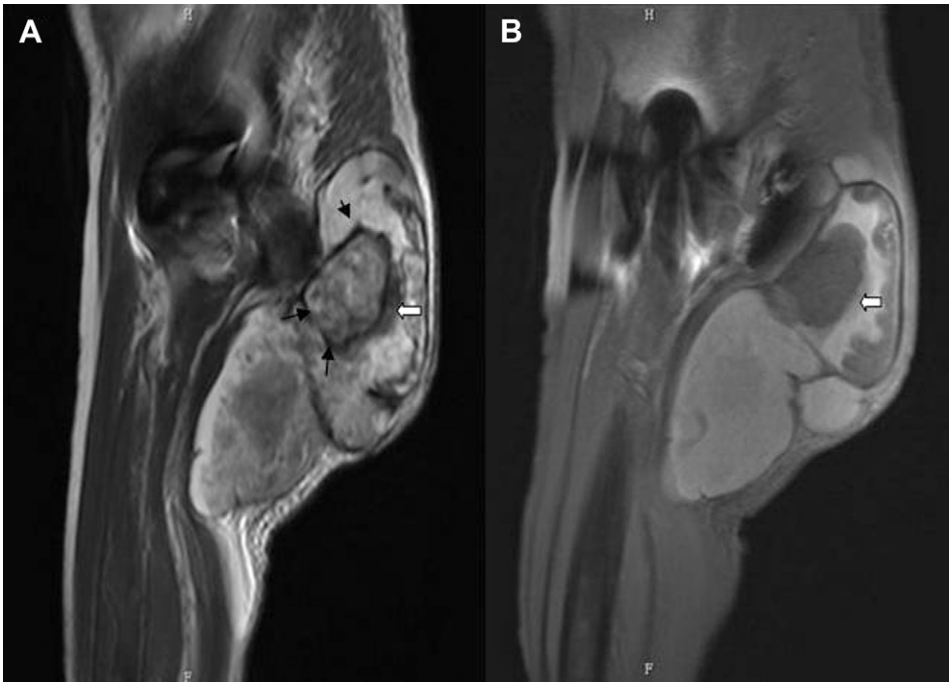

Fig. 1. (A) Sagittal T2-weighted and (B) T1-weighted image demonstrate a large, well-circumscribed, heterogeneous mass under gluteal maximus. Small, poorly defined areas surrounding the central nodule represent extracellular methemoglobin (white arrows). Fibrous tissue and hemosiderin deposition can be observed on the central area of low T2 intensity (black arrow). Contrast enhancement was shown on the peripheral nodule of T1W image.

pseudocapsule. Nodular collection of material showed heterogeneous pattern with areas of intermediate to high signal on T1W and T2W indicating blood breakdown products of different stages. Minimal contrast enhancement was observed only in one of the nodules in the peripheral region, which may indicate neovascularization of the fibrous tissues. Although benign fluid containing cyst was at the top in the differential list, malignancy could not be completely ruled out. Aspiration and ultrasonogaphically-guided biopsy were arranged by which 500 mL of chocolate-brown fluid was aspirated. Tissue samples were taken from the area with contrast enhancement. After the procedure, patient experienced temporary symptomatic relief. Cytology and histological examinations of the retrieved samples revealed necrotic debris, blood clot, and granulation tissue. No atypical cell was found. Because of the persistence of the symptoms, the mass was surgically excised (Fig. 2). Histologic examination revealed an encapsulated, hemorrhagic mass with a dense and fibrous pseudocapsule (Fig. 3). In the peripheral portion of the mass, fibrous septations with irregular thickness were identified. No atypical cells were present to suggest neoplasm. The result consists with the diagnosis of CEHs.

3. Discussion

CEHs were advocated by Reid et al[1] in 1980 for hematomas, which persisted and gradually increased in size for more than

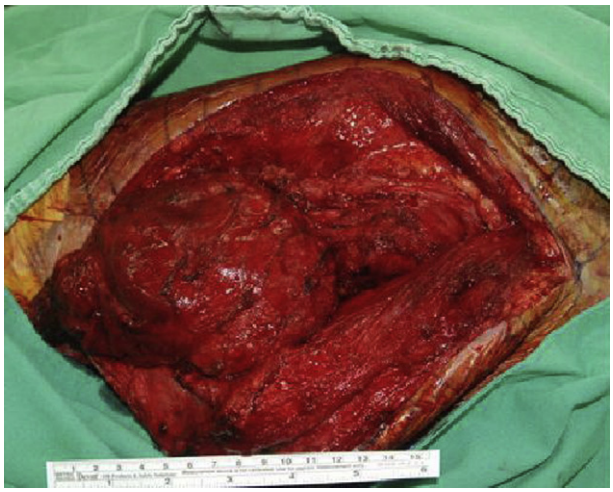

Fig. 2. Two weeks after aspiration, the mass was surgically excised. The mass was exposed after dissecting through the gluteus maximus.

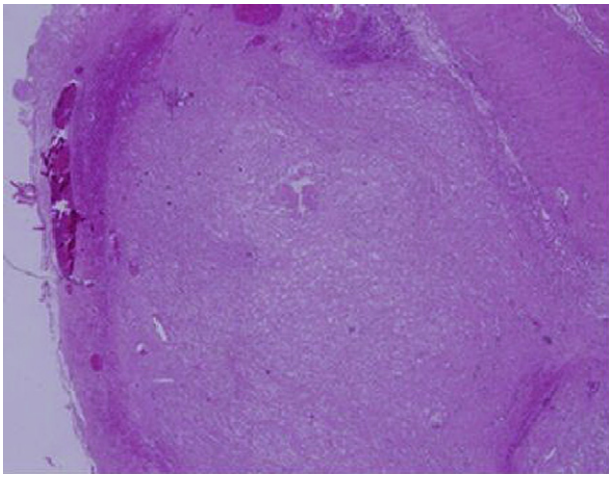

Fig. 3. Microscopically, the section shows hemorrhagic nodule with chronic inflammation, cholesterol clefts, extensive necrosis, and hemosiderin-laden macrophage. No evidence of malignancy was identified.

a month. In extremities, it often presented as a palpable soft tissue mass. Less than 45 cases of CEH were reported in the English literature.[3] The second case presented a rare intraosseous large CEH in the gluteal region firstly reported in the English literature. Although hematomas often occurred along with bleeding diathesis, trauma, anticoagulant therapy, or surgery, one-third of these patients with CEH had no above history recorded.[3]

The exact mechanism of chronic expansion remains unclear. However, several possible causes have been proposed and the most widely believed concept is chronic expansion of hematoma caused by increase of osmotic pressure through deposition of blood breakdown products and its irritant effect, which causes permeability change of adjacent vessels.[4] Similar mechanisms had been reported in the related entities, such as chronic subdural hematomas.[4] Multiple septations were a common finding of CEH, which may suggest chronic expansion of different stages caused by recurrent bleeding into the existing hematoma.

Several imaging modalities had been used for the diagnosis of CEH. On magnetic resonance imaging scans, CEHs exhibit diverse signal intensities on both T1- and T2-weighted images, reflecting the central zones of fluid collection containing fresh and altered blood with a peripheral rim of low-signal intensity representing a wall of collagenous fibrous tissue with deposition of hemosiderin. Contrast enhancement had been proved to be insufficient for the differential diagnosis of CEH and malignant sarcoma.[5] Current research reported the use of diffusion-weighted imaging, which seems to show promising results for the work up in differential diagnosis of CEHs and malignant sarcomas.[6]

Common treatment of CEH includes aspiration and surgical excision. Percutaneous aspiration may result in temporary symptomatic relief, but recurrence is common after the procedure because of the retained organized blood and fibrous walls, which cannot be fully removed.[1,3,7] Surgical excision remains the standard treatment.

In summary, we present the largest CEH dissecting through the interfascial plane underlying the gluteus maximus of left gluteal region. We suggest early resection of CEH in fear of chronic erosion of adjacent organ.

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