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CLINICAL IMAGING

Magnetic resonance imaging of gluteal intramuscular myxoma

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Abstract

Gluteal intramuscular myxomas with MR images have not been reported before. A 45-year-old man presented with a palpable mass in his right buttock for several months. Magnetic resonance imaging showed an intramuscular cystic lesion with homogeneous signal intensity at the right gluteus muscle, and the mass had thin peripheral enhancement after gadolinium administration. The patient was treated by marginal excision of the tumor. Histologic diagnosis was compatible with intramuscular myxoma.

Keywords: Cyst; Magnetic resonance imaging (MRI); Myxoma; Soft tissue tumor

1. Introduction

Intramuscular myxomas are relatively rare, benign soft tissue tumors that can be treated successfully by marginal excision. We present what appears to be a rare intramuscular myxoma in gluteus muscle with MR images of a 45-year-old man.

2. Case report

A 45-year-old man presented with a palpable mass in his right buttock for several months. He had exacerbation of discomfort as the mass gradually increased in size. No history of trauma or systemic disease was noted. Physical examination revealed a palpable indurated mass over his right buttock. No redness of the skin was noted.

Magnetic resonance imaging showed an intramuscular cystic lesion with homogeneous signal intensity on T1-weighted, T2-weighted, and short-tau inversion recovery (STIR) images at the right gluteus muscle, and the mass had thin peripheral enhancement after gadolinium administration (Fig. 1A–D). Our preoperative diagnosis was an intramuscular cystic tumor in the right buttock.

The patient was treated by marginal excision of the tumor. Grossly, the tumor measured 18×4.5×3.5 cm, was tender, had a well-defined margin, and looked reddish brown. Microscopically, the surgical specimen was hypocellular, composed of spindle to satellite cells in myxoid stroma (Fig. 1E and F). Few capillary vessels were noted. Neither cellular atypia nor mitosis was seen. Histologic diagnosis was compatible with intramuscular myxoma. The postoperative course was smooth and no recurrence was noted on 1-year follow-up.

3. Discussion

In 1948, Stout [1] first described myxoma as a true mesenchymal neoplasm composed of undifferentiated satellite cells embedded in loose myxoid stroma [2]. Soft

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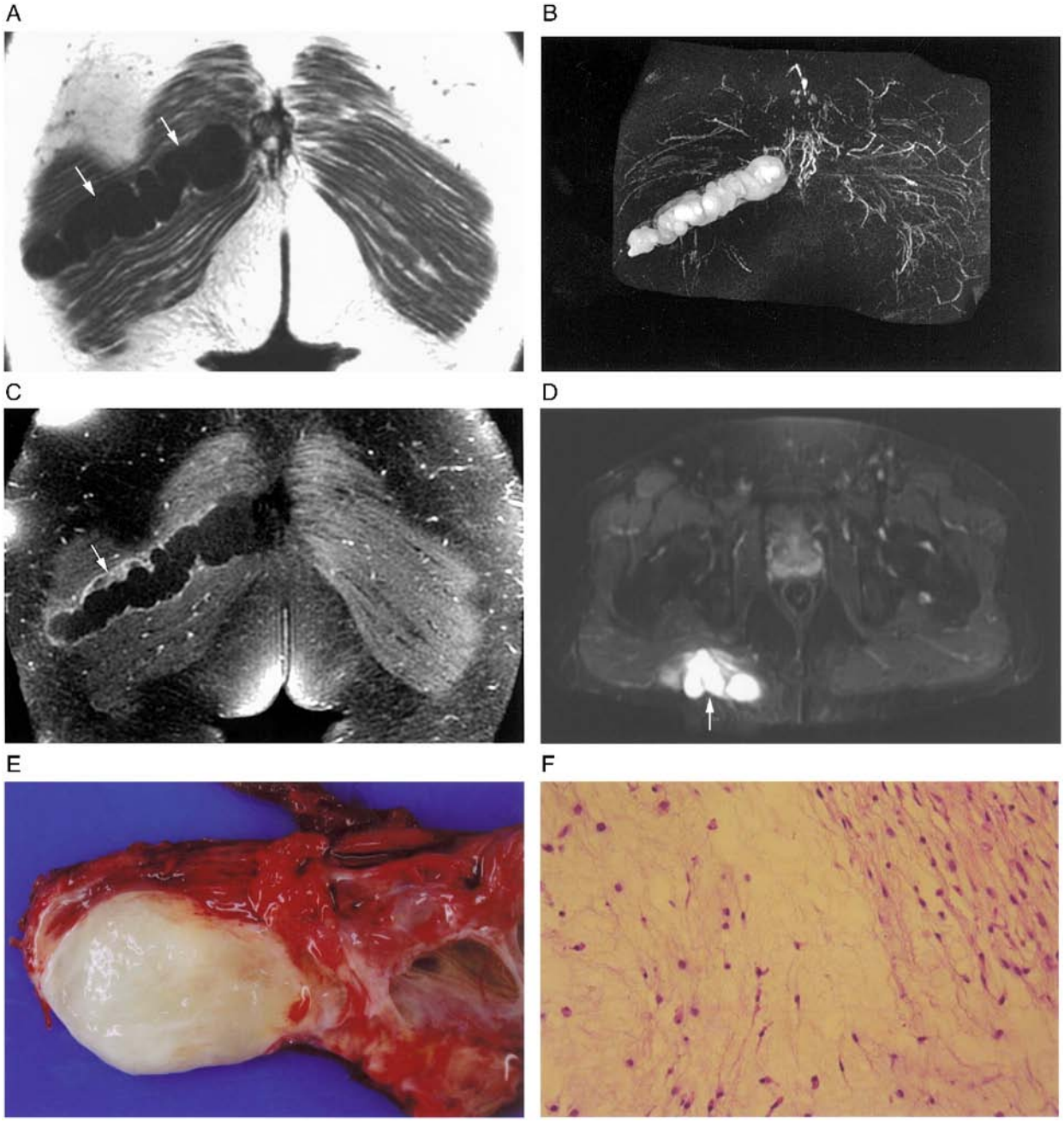

Fig. 1. A 45-year-old man with an intramuscular myxoma at the right gluteus muscle. (A) Coronal T1-weighted MR (TR/TE, 600/11.49) image shows a lobulated tumor (arrows) with a homogeneous hypointense signal at the right gluteus muscle. A tumor located along the axis of the gluteus muscle can mimic ganglion cyst of the abductor tendons. (B) Coronal heavily T2-weighted fat saturation MR (TR/TE, 10,000/228) image with three-dimensional maximum intensity projection display gives a stereotactic depiction of the lobulated tumor. (C) Coronal gadolinium-enhanced T1-weighted MR (TR/TE, 566.7/9.5) image shows peripheral enhancement (arrow) of the tumor at the right gluteus muscle. Note that there is no internal enhancement. (D) Axial STIR (TR/TE/TI, 6067/27.12/160) image shows homogeneous hyperintense signal of the tumor (arrow) in the right buttock. (E) Photomicrograph of the tumor shows some spindle cells in loose myxoid stroma and few capillary vessels in the periphery (H&E, ×40). (F) Spindle and stellate cells in myxoid stroma are noted (H&E, ×200).

tissue myxoma is a benign neoplasm that may arise from fibroblasts producing an excessive amount of mucopolysaccharide [3]. Most patients with myxoma have a diagnosis of intramuscular compartment origin (82%), the average age of the patients is 55 years, women are slightly predominant [2], and the tumor has predilection for the thigh (51%), followed by the upper arm (9%), calf (7%), and buttock (7%) [3].

The typical appearance of intramuscular myxoma is a well-defined ovoid tumor with fluid content, with an average size of 7 cm (range, 1.5–17 cm) [3,4]. Most tumors (95%) present with a homogeneous hypointense signal on

T1-weighted images and a hyperintense signal on fluid-sensitive MR sequences because of the high water content of mucin, which has been proved histologically [3,4]. It has been reported that 61% of masses are homogeneous and 38% slightly heterogeneous due to fibrous septa [5]. Most lesions have peripheral enhancement, and 55% have heterogeneous internal enhancement [4,5], probably because they are more cellular tumors with scanty myxoid stroma [5]. A thin peritumoral fat (65–94%) surrounding the lesion (corresponding histologically to atrophy of the surrounding muscle [2]) and/or presence of peritumoral edema (55–94%) [4,5] can be a reliable sign in distinguishing intramuscular myxoma from myxoid liposarcomas [4].

In our case, the cystic mass in the gluteus muscle mimicked an origin in the hip abductor tendons. The differential diagnoses of the lesion therefore may include ganglion cyst, or, rarely, cystic lymphangioma, and cystic schwannoma. However, most ganglion cysts occur in a juxta-articular space. Cystic lymphangioma frequently occurs in neonates around the neck or retroperitoneal regions, and schwannoma with cystic degeneration has a thickened wall.

Intramuscular myxomas are histologically hypocellular, hypovascular, and myxoid. Patients with these tumors can be treated successfully by marginal excision without the potential for recurrence.

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