



A Giant Aneurysmal Benign Fibrous Histiocytoma with Muscle Involvement: A Rare Case Report

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Dear Editor:

Aneurysmal benign fibrous histiocytoma (BFH) is one subtype of BFH showing dilated blood-filled pseudovascular spaces generally occurred in the dermis. Herein, we report an interesting case of aneurysmal BFH involving muscle.

A 21-year-old Korean female had a 9-year history of a violaceous patch with an underlying tender mass on the right sub-clavicle area. Excision had been performed 8 years ago, but it recurred and gradually increased. She experienced swollen up repeatedly when got trauma. An oval-shaped soft nodule about 5 cm in diameter was palpated (Fig. 1A). Incisional biopsy showed dilated blood-filled spaces with hemorrhage. Bland spindle cells and siderophages were seen in the intervening areas (Fig. 1B~D). No prominent cellular atypia was observed. Mitotic figures were only a few with no atypical feature. The tumor cells were not arranged with storiform pattern. Immunohistochemical staining of tumor cells revealed positivity for factor 13a (Fig. 1E), CD68, and β -catenin. There was no staining for CD31, CD34 (Fig. 1F), ERG, HMB45, and Melan A. Enhanced magnetic resonance imaging revealed enhanced soft tissue infiltrating anterior aspect of the pectoralis major muscle (Fig. 2A, B). Two retro-pectoral enlarged nodules in the deep portion of the right upper chest wall were

found. A final diagnosis of aneurysmal BFH was made based on the histopathological findings. Mohs micrographic surgery with 1 cm margin was done and tumor was completely removed after the third excision of the affected muscle (Fig. 2C). The hematoxylin-eosin examination of the resected lymph node was found to be tumor-free, unfortunately, no additional staining was done. The final defect size was 9×5 cm. There was no definite recurrent tumor clinically and according to the radiologic findings until 6 months after surgery.

Aneurysmal BFH usually show solitary nodule measuring between 0.5 and 4 cm in the extremities¹. The BFH larger than 5 cm is called giant BFH and the largest aneurysmal BFH reported so far is 8.5 cm mass².

They are generally presented in the dermis, but can be limited even in the subcutaneous area. This case is unusual to invade the muscle layer. After the first surgery, where the excision surface reached muscle fascia, it was possible that tumor cells invaded the muscle layer through the scar. It usually shows negativity to vascular markers such as CD31 and CD34¹. These findings are helpful in distinguishing vascular malignancies, such as angiosarcoma and Kaposi sarcoma, and dermatofibrosarcoma protuberans. Mitotic activity and significant cellular atypia are rare in comparison with these aggressive diseases.² Angiomatoid malignant fibrous histiocytoma (AMFH) should be differentiated in that the lesion invaded muscle in young female and showed blood-filled spaces. AMFHs are presented with multinodular groups of eosinophilic histiocytoid or myoid cells with pseudocapsule and peritumoral lymphoplasmatic cuffing³. Deep fibrous histiocytoma was also excluded in the absence of storiform arrangement and pseudocapsule⁴.

Aneurysmal BFH metastasized to regional lymph node was recently reported⁵. We performed lymph node biopsy for assessing metastasis.

This is the first case of aneurysmal BFH with muscular

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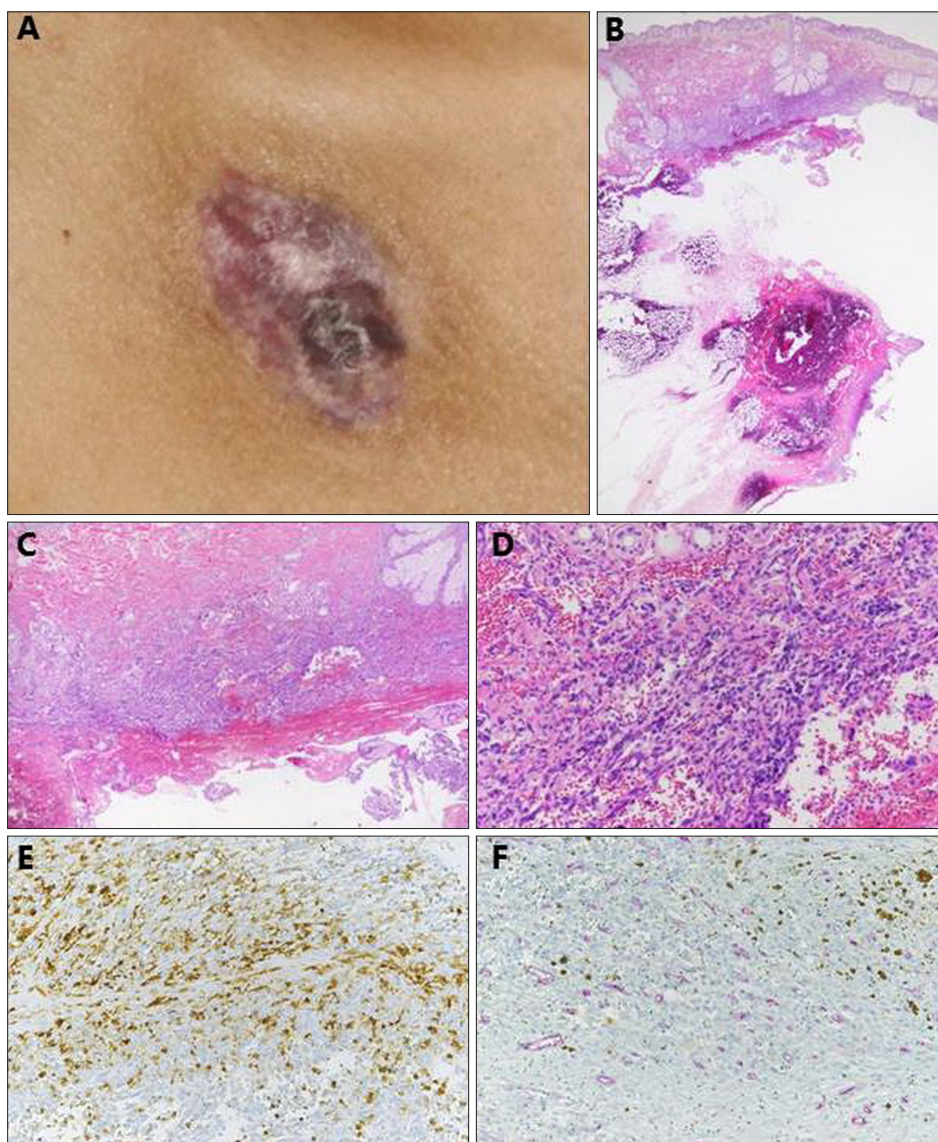


Fig. 1. Clinical and histopathological manifestations of aneurysmal benign fibrous histiocytoma. (A) A 21-year-old female presented with an erythematous soft mass on the right sub-clavicle area. (B~D) Diffusely blood-filled spaces and surrounding spindle cells from the dermis to fat tissue (H&E stain; original magnification: B, $\times 10$; C, $\times 40$; D, $\times 200$). Tumor cells were positive for factor 13a (E) and CD34 (F) was negative ($\times 200$). We received the patient's consent form about publishing all photographic materials.

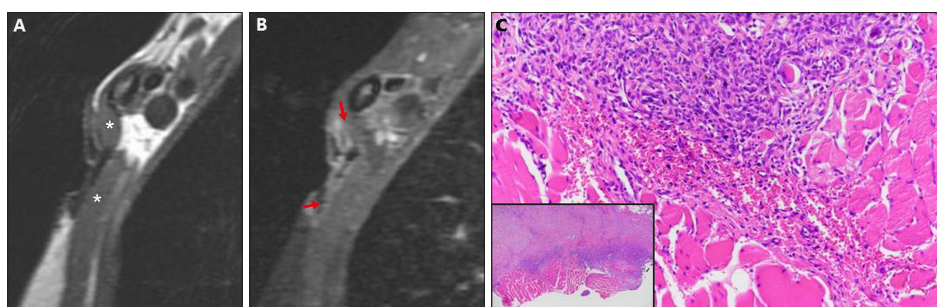


Fig. 2. Imaging study and histopathologic features showing muscle involvement. (A) An infiltrative T1 hyperintense lesion and extension to the anterior aspect of the pectoralis major muscle (asterisks) on the sagittal section on magnetic resonance imaging. (B) The T1-weighted contrast-enhanced image showing muscle infiltration (arrows). (C) A deep marginal biopsy specimen showing spindle cells intervening muscles (H&E stain; original magnification: $\times 200$; inset, $\times 40$).

involvement. Dermatologists should carefully assess clinical and pathological findings for accurate diagnosis.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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DATA SHARING STATEMENT

Research data are not shared.

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