

## A Case of Malignant Fibrous Histiocytoma Mimicking Pseudoaneurysm

*Psödoanevrizmayı Taklit Eden Bir Malign Fibröz Histiositoma Olgusu*

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**ÖZET:** Malign fibröz histiositoma, erişkinlerde görülen en sık yumuşak doku tümürüdür. Psödoanevrizma ise arter duvarı rüptürü sonucu gelişir. Her iki lezyon da ekstremitelerde bir kitle şeklinde kendini gösterir. Burada psödoanevrizmayı taklit eden bir malign fibröz histiositoma olgusunu sunarak, bu iki farklı lezyonun benzerlikleri ve farklılıklarını tartışıyoruz.

**Anahtar Kelimeler:** Histiositoma, fibröz; ultrasonografi; tomografi, x-ray bilgisayarlı; anevrizma, yalancı.

**ABSTRACT:** Malignant fibrous histiocytoma is the most common soft tissue tumor encountered in adults. A pseudoaneurysm is defined as a contained rupture of the artery wall. Each lesion may be present as a mass in the extremities. We present a case with malignant fibrous histiocytoma mimicking pseudoaneurysm, and discuss similarities and differences of these different lesions.

**Key Words:** Histiocytoma, fibrous; ultrasonography; tomography, x-ray computed; aneurysm, false.

### INTRODUCTION

Malignant fibrous histiocytoma (MFH) is the most common soft tissue sarcoma which is usually originated from muscles and deep fascia and rarely from the subcutaneous tissue; and it frequently invades the extremities (1). The etiologies of these malignancies have not been described exactly yet. Many cytogenetic and molecular anomalies have been detected in these tumors (2).

Pseudoaneurysms can occur wherever an arterial wall is subject to injury. They are commonest in the limbs (3). They may develop following penetrating trauma or arterial catheterization (4,5).

We present here a case of MFH presenting with rapid growing groin mass.

### CASE REPORT

A 77-year-old woman complained a rapid growing mass in her left inguinal region. On physical examination, a mass of 12x10 cm in size was found and there was an ecchymosis around the lesion. There are no thrills or pulsation on the mass.

Additionally, there was also palpable lymphadenopathy in the inguinal region. Her blood pressure was 150/100 mm-Hg. Her history revealed that she had undergone an angioplasty on the same side several weeks ago and this mass developed after this procedure. She had breast carcinoma and had right modified radical mastectomy twenty years ago. No recurrence of breast carcinoma was detected until this time. In addition, the patient had type II diabetes mellitus, hypertension, and also hepatitis C virus antibody was positive.

In laboratory, abnormal values were as follows: hematocrit 33%, hemoglobin 10.6g/dl, sedimentation rate 61mm/h, glucose 169 mg/dl, blood urea nitrogen 32 mg/dl, urea 69 mg/dl, creatinine 1mg/dl, serum glutamic oxaloacetic acid 199mg/dl, serum glutamic pyruvic acid 174 mg/dl; alkaline phosphatase 283 IU/l, Na:131 mEq/l, K:6.68 mEq/l, Cl 122.9 mEq/l.

Color Doppler echocardiography revealed biatrial dilatation, mitral insufficiency (grade II), posterior mitral annulus calcification, and minimal mitral stenosis.

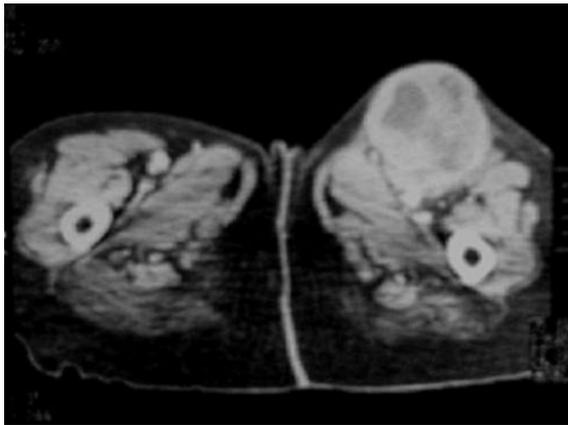
Gray scale ultrasonography (US) of the mass showed well demarcated heterogeneous mass measuring 12x9x10 cm in diameter, solid component peripherally and cystic component centrally with thick multisepta near the femoral artery. It seemed like an irregular intramural thrombus in pseudoaneurysm cavity or hematoma. Color Doppler ultrasound

(CDUS) demonstrated well vascularization in the solid areas. This appearance made us to think a pseudoaneurysm. Contrast-enhanced computed tomography (CT) demonstrated an enhancing hyperdense mass which had thick septa and central necrosis due to rapid growing. It was also partially associated with the superficial femoral artery and infiltrating adductor longus and brevis muscles (Figure 1). There was no involvement of the common femoral vein or artery. These CT appearances suggested a mesenchymal originated hypervascular tumor.

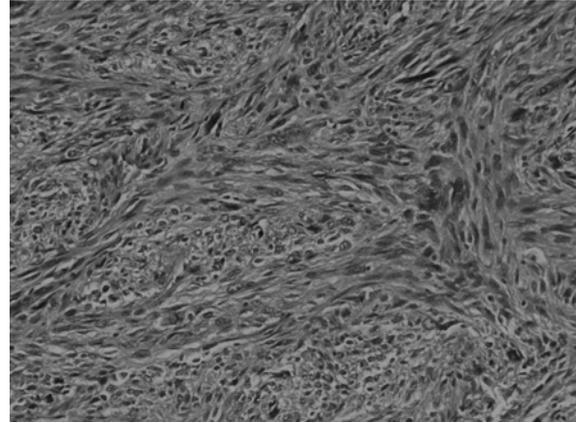
Surgical resection was performed including tumor and soft tissue which had the segment in size 2-3 cm.

Macroscopic examination of the specimen revealed a 12x9x10 cm sized, gray-white, huge, lobulated rubbery mass. On cut section of the tumor extensive central necrosis and cystic degeneration was seen. Histologically, the tumor consisted of plumb spindle cells arranged in a whorl-like pattern. Pleomorphism and mitotic activity was more prominent. There was the presence of large numbers of giant cells with multiple hyperchromatic irregular nuclei. Immunohistochemically, tumor cells were diffusely positive for vimentin and negative for S-100 smooth muscle actin, desmin. Pathologic diagnosis was "Malignant fibrous histiocytoma" grade III (Figure 2).

The postoperative period was uneventful. She was discharged on postoperative fourth day. Ten days later, the patient was send to a radiotherapy department. We routinely used CT for every 3 months. There has been no recurrence or metastasis during the eighteen months on the follow-up period.



**Figure 1.** A contrast-enhanced computed tomography scan showing a 12x9x10 cm sized, well-demarcated mass with in heterogeneous significant enhancement and central necrosis originating in the left groin.



**Figure 2.** The tumor consisted of spindle and histiocytic cells, including multinucleated giant cells, arranged in a whorl-like pattern (H&E, X40).

## DISCUSSION

MFH is seen in adult life between the ages of 50 and 70 (1). It occurs as 1% of the adult malignancies (6-8). Approximately 66% of MFH encountered in male patients (1).

The patients with MFH localized on an extremity usually present to a hospital with a mass without any pain. Of these patients, 33% may have a complaint of pain (7,9). Similar to most of MFH patients, our case had a mass and no pain.

Pseudoaneurysm is seen most frequently in hypertensive patients as a complication of arterial catheterization (3). Our patient also had hypertension. A pseudoaneurysm is a pulsatile hematoma secondary to bleeding into the soft tissue, with fibrous encapsulation and persistent communication between the vessels and the fluid space. The US criteria of pseudoaneurysm include echogenic swirls within a cystic cavity, expansile pulsatility, echolucent or mixed echogenic collection in close proximity to the artery, and a visible tract. These criteria are not often seen (4). Especially, if thrombosis develops in the tract, we can not see the swirls, pulsatility and also tract. The US findings alone may not be sufficient to distinguish a hematoma from a pseudoaneurysm. CDUS characteristics of a pseudoaneurysm include arterial flow within a mass separate from the artery and to-and-fro flow between the artery and the mass (4). The "to" component is due to blood entering during systole as expansion occurs in the pseudoaneurysm, the "fro" component is seen during diastole as the blood stored in the cavity is ejected back into artery (5).

A false-positive diagnosis using color has been reported in a case of necrotizing lymphadenitis after arteriography where the mass was mistaken for a false aneurysm on the basis of a jet within the hilum of the inflamed inguinal lymph node (4). Similar to this, in our case, solid component of the malignant mass had rich vascularization mimicking arterial flow into the pseudoaneurysm. Additionally, neighboring femoral artery and history of angioplasty thought to us that the mass was a typical pseudoaneurysm.

Other imaging modalities, CT and magnetic resonance imaging (MRI) can be used as diagnostic tools (10). MFH is inhomogeneous in appearance on CT scans (11). Non-enhanced CT usually reveals a low-density mass. Contrast enhancement is seen after injection (10). Tumor shows inhomogeneous moderate signal intensity or low signal intensity on T1-weighted MR images. On T2-weighted images, tumor displays high signal intensity (11). CT and MRI help to determine the margins of the tumor and show the relation of the MFH to adjacent neurovascular structures (10). Our case underwent to the CT examination and it was diagnosed as a mesenchymal tumor, but not a pseudoaneurysm. There was a highly vascular, hyperdens, and heterogeneous solid tumor which represented strong contrast-enhancement.

At preoperative period, the true diagnosis of the lesion and evaluation of the extent of the tumor is very important for proper approach and treatment. Radical surgery must be performed for the curative treatment in MFH. It shows a poor prognosis if complete resection was not performed (12). Radiation therapy has an important role, in combination with surgery for better local control, particularly in high-grade lesions (13).

In conclusion, we suggest that in a patient with rapid growing inguinal mass, the possibility of malignant fibrous histiocytoma should always be kept in mind for the early and true diagnosis of these cases.

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