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Case Report

Malignant fibrous histiocytoma of the abdominal wall

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Abstract. Malignant fibrous histiocytoma (MFH) or undifferentiated pleomorphic sarcoma is a type of malignt neoplasm that arises from any soft tissue and bone involving extremities, abdomen and retroperitoneum. MFH of the external oblique abdominis muscle is rare. Surgical resection of the mass is the treatment of choice depending on the stage of the disease and the invasion depth of the tumor. Radiotherapy, chemotherapy and immunotherapy are the other treatment methods. We present a case of a 71-year old man with the diagnosis of MFH on external oblique muscle which was completely resected. We believe that adjuvant chemoradiotherapy following surgical resection of the tumor was the most appropriate treatment for this disease.

Keywords: Malignant fibrous histiocytoma, abdomen, magnetic resonance imaging

Introduction

Malignant fibrous histiocytoma (MFH) was first introduced in 1961 and described as a tumor rich in histiocytes with a storiform growth pattern [1]. MFH was the most common sarcoma appearing during the 6th and 7th decades with male predominance. It involves the 30% of all soft tissue sarcomas [2], and occurs most frequently in the limbs, retroperitoneum, trunk and abdomen [3, 4]. We report a case of a 71-year-old man with the diagnosis of MFH in the left external oblique abdominis muscle, treated by removal of the tumor followed by radiochemotherapy.

Case Report

A 71-year-old male was admitted to our clinic complaining with a palpable mass in the abdominal wall. On his clinical examination, a large, semi mobile, painless mass was palpated at the level of the left lomber margin of external oblique abdominis muscle growing slowly in 6 months. Laboratory findings included normal leucocyte: 9.500/mm3, Hb: 12.2 g/dL AFP: 6.11 ng/ml, CA-15.3:6.0 U/mL, CA-19.9:18.5 U/mL and CEA:2.93 ng/ml. The abdominal ultrasound revealed a mass limited to the abdominal wall. The abdominal magnetic resonance imaging (MRI) revealed a large mass of 85 × 75 mm in diameter, arising from the left external oblique abdominis muscle with sarcomatous characteristics (Fig. 1, A, B). Transient needle biopsy revealed the masss to be a mesenchymal tumoral lesion and he underwent total excision of the mass for the exact diagnoses. Through an oblique incision, a total resection of the tumor with the external oblique abdominis muscle and sheath was performed (Fig. 2). Two suction drains were placed laterally between the internal oblique muscle and the subcutaneous tissue, and the skin was closed with 3/0 prolene suture continuously. The patient's postoperative course was uneventful. Drainage tubes were removed on the third postoperative day and he discharged without any complaints with recommendation of outpatient control. Pathology diagnosis established the specimen as MFH. Macroscopically the encapsulated tumor specimen measured as 85mm ×75 mm in diameter size, and the cut surface of the tumor was pinky-white in color with hemorrhage and necrosis. The tumor microscopically showed spindle cells arranged in a storiform pattern with nuclear atypia and mitoses. To further clarify the diagnosis of the tumor, immunoperoxidase staining was performed. The tumor cells were negative for desmin, CD34 and S-100; focal positive for vimentin, CD68, lysozyme, α-1-antitrypsin CT and Factor XIIIa.

The patient was referred to medical and radiation oncology for further treatment.

Discussion

MFH can appear at any age but commonly seen at 50 to 70 years of age with male sex dominance. MFH can arise in any part of the body especially in lower limb. The other localizations were upper limb and retroperitoneum. Patients usually complaining of abdominal pain, fatigue, weight loss, and a palpable mass arisen within a short period of time. the mass doesn't usually cause any pain as in our case, unless it is compressing a nearby nerve. MFH consists of histiocyte like and fibroblast like cells arranged in a storiform pattern, with other pleomorphic cells and

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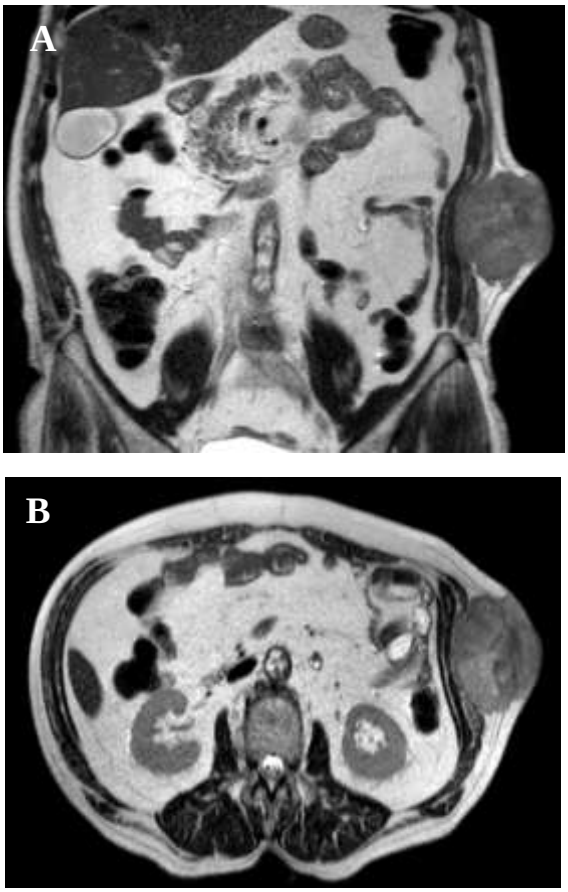

Figure 1 The abdominal MRI showing a mass with 85 × 75 mm in diameters. A. Axial view B. Transvers view

multinucleated giant cells [5]. MFH manifests a broad-range of histopathologic features; storiform-pleomorphic, myxoid, giant cell, inflammatory and angiomatoid type. The storiform pleomorphic pattern is the most common type [6] and it accounts for approximately two-third of

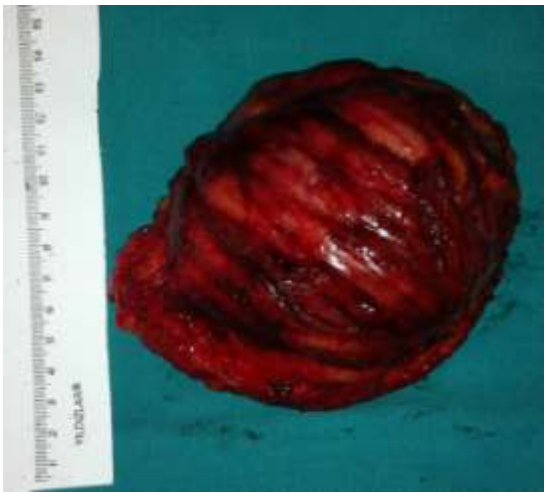

Figure 2 The total resected specimen with external oblique abdominis muscle

MFH [7]. Our case belonged to the storiform pleomorphic type. The histologic pleomorphism, degree of vimentin staining, absence of the smooth muscle marker desmin, and the macroscopic and microscopic findings of the resected tumors from our patient favored the diagnosis of MFH. Most MFHs are locally invasive, but distant metastasis may spread via the blood or lymphatics.

MFHs have a high likelihood of recurrence and metastasis. The risk correlates with the size and depth of the primary tumor. The overall 2 year survival rate is 60% and 20% will die or suffer with local recurrence [3, 8]. Extensive surgical resection is the main treatment. Concurrent radiotherapy, chemotherapy, and immune-therapy reduce the possibility of metastasis and local recurrence. Prognosis depends on the tumor size, histological grade, disease stage, invasion depth and the resection margin of the tumor [7]. It has been reported that the average 5 year survival rate of patients is 59-66.7% and the local recurrence rate is 16-31% [7]. Radical treatment usually results in abdominal wall defects that may need reconstruction.

Different options on abdominal wall reconstruction exist from primary closure to pedicled or myocutaneous flaps. In our case, abdominal wall primarily closed without any need for reconstruction. Two suction drains were placed laterally between the mesh and the subcutaneous tissue while the patient's postoperative course was uneventful. We conclude that adjuvant chemoradiotherapy following total surgical resection of the tumor was the most appropriate treatment for this disease.

Conflict of Interest

The authors declare no conflicts of interest.

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