UROONCOLOGY
Case Report

Giant malignant fibrous histiocytoma of the testis

Testisin dev hücreli malign fibröz histiositomu

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ABSTRACT

We present a case of malignant fibrous histiocytoma of the testis in a 59 year- old male who admitted to our hospital with left testicular painless mass presenting for two months. A scrotal ultrasound examination and magnetic resonance imaging revealed a 9 cm left testicular solid mass. Serum tumor markers were unremarkable. The patient underwent left radical orchiectomy. Histopathologic diagnosis was giant cell variant of malignant fibrous histiocytoma which composed of varying amounts of a mixture of spindled, rounded and osteoclastic type giant cells. Hemorrhagic and necrotic areas were seen between tumor nodules. In immunohystochemical staining, vimentin, CD68 were positive and SMA was focally positive. The patient then received adjuvant chemoterapy and currently, he has no sign of recurrence.

Keywords: Giant cell; malignant fibrous histiocytoma; testicular tumor; testis.

ÖZ

İki aydır sol testiste ağrısız kitle ile hastanemize başvuran ve malign fibröz histiositom tanısı konulan 59 yaşındaki erkek hastasunulmaktadır. Skrotal ultrasonografi ve manyetik rezonans görüntüleme tetkiklerinde 9 cm'lik sol testiküler solid kitle görülmüştür. Serum tümör markerları normal seviyelerdedir. Hastaya sol radikal orşiektomi uygulanmıştır. Histopatolojik tanı değişik miktarlarda iğsi, oval ve osteoklastik tipte dev hücrelerin karışımından meydana gelen malign fibröz histiositom dev hücreli tipi olarak konulmuştur. Tümör nodülleri arasında hemorajik ve nekrotik alanlar görülmüştür. İmmunohistolojik boyamada vimentin ve CD68 pozitifken SMA fokal pozitiftir. Hastaya daha sonra adjuvan kemoterapi uygulanmıştır, halen nüks belirtisi yoktur.

Anahtar Kelimeler: Dev hücre; malign fibröz histiositom; testis; testis tümörü.

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Introduction

Malignant fibrous histiocytoma (MFH) was firstly reported by O'Brian and Stout in 1964.[1] MFH is a subtype of malignant soft tissue sarcomas which rarely seen especially in mid- and late adulthood. On the other hand, it has been considered to be a discrete pathologic entity by some authors.[2] It usually arises from soft tissues of extremities or trunk and sometimes in retroperitoneum. A limited number of cases of MFH originating from spermatic cord have been reported in the literature[3,4], however, testicular localisation of MFH is very rare and there are only a few reported cases.[5,6] In this case we present a giant cell variant of testicular MFH and discuss its treatment and prognosis.

Case presentation

A 59-year-old male admitted to our hospital with a complaint of left scrotal painless mass presenting for two months. On physical examination, enlarged, firm, irregular left testis was palpated. Any enlarged inguinal lymph nodes were not palpated during inguinal examination. In testicular examination, the border between the epididimis and testis was not clear. An ultrasonic examination

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of the scrotum revealed hypoechoic mass in the left testicle and protrusion of intestinal loops into scrotal cavity due to increased anteroposterior diameter of the left inguinal canal. Magnetic resonance imaging (MRI) of the scrotum showed a heterogenous, septated 90 mm testicular lesion and intestines in the inguinal canal (Figure 1). Serum alpha-fetoprotein (AFP), beta-human chorionic gonadotropin (β-hCG) and lactic dehydrogenase (LDH) levels were in normal limits. A contrast- enchanced computed tomographic (CT) examination of the whole abdomen revealed 108x90mm heterogenous, hypodence left testicular mass and enlargement of the left inguinal canal. No pathologic size lymph node enlargement was detected.The patient underwent operation. At surgery, the left spermatic cord was clamped and the left testis was explored. Approximately 10 cm, solid, left testicular mass was found and a radical orchiectomy was performed.

On gross pathologic examination, the orchiectomy material was 12.5x9x7 cm in diameter. On cut surface, there was a tumoral lesion which infiltrated into the testis, rete testis, and the paratesticular tissues. The central portion of the lesion was hemorrhagic. There was no obvious testicular parenchyma. The samples from the left orchiectomy material were fixed in 10% formalin and embedded in paraffin, then sections were stained with haematoxylin and eosin. On microscopic examination, there was a lesion which composed of varying amounts of a mixture of spindled, rounded and osteoclastic type giant cells. Hemorrhagic and necrotic areas were seen between tumor nodules. Tumor cells were pleomorphic and mitotically active in some areas and infiltrated blood vessels as well (Figure 2). Invasion of paratesticular tissues, tunica albuginea, rete testis and epididymis was revealed. Immunohistochemical analysis was performed via Leica BOND-MAX™ (Leica Biosystems, Wetzlar, Germany) using peroxidase method with antibodies to β-hCG (1:150, BioGenex, Fremont, USA), CD-68 (1:200, Biocare, Concord, USA), PanCK (1:250, BioGenex, Fremont, USA), desmin (1:100, Genemed, San Francisco, USA), vimentin (1:100, Genemed, San Francisco, USA), CD-31 (1:150, Scytek, Logan, USA), CD-34 (1:100, Genemed, San Francisco, USA), SMA (1:500, Thermo, Beverly, USA) and Ki-67 (1:100, Biocare, Concord, USA). In immunohystochemical staining, vimentin, and CD68 were positive and SMA was focally positive while desmin, CD31, CD34, PanCK and calretinin were negative. Ki-67 proliferation index was 30%. The specimen was diagnosed as malign fibrous histiocytoma, giant cell type (pleomorphic undifferentiated sarcoma with giant cells). No tumor was detected at the surgical margin of the spermatic cord.

The patient was referred to the medical oncology department and he received 3 courses of chemotherapy with doxorubicin, iphosphamide, then 2 more courses of etoposide, and iphosphamide. Currently, he has no sign of recurrence and still under follow-up 2 years after the establishment of diagnosis. The patient provided written informed constent with guarantees of confidentiality.

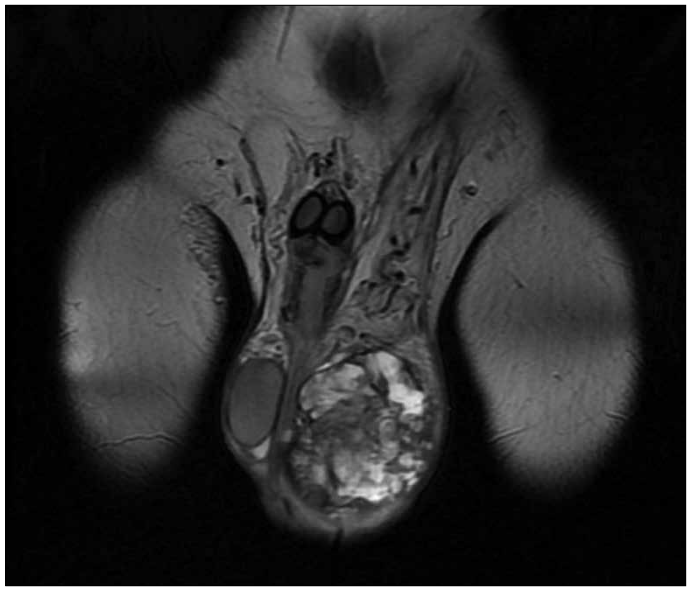

Figure 1. MR imaging showing left testicular solid mass on sagittal FSE T2 signal
MR: magnetic resonance; FSE: fast-spin echo

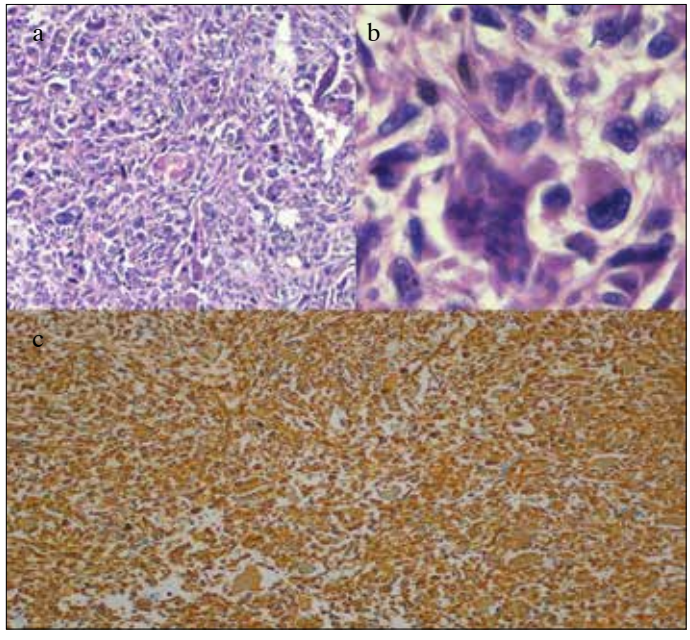

Figure 2. a-c. (a) H&E x100,tumor is composed of mixture of spindled, rounded, and osteoclastic type giant cells in varying amounts, and atypic mitoses can be seen. (b) H&E x400 pleomorphic and hyperchromatic tumor cells with giant cell. (c) Vimentin x100

Discussion

Testicular tumors consist of only 1-2% of male tumors and the most of them are of germ-cell origin. MFH of the testicle is a very rare tumor and only 4 cases have been reported, 2 of which are in English.[5,6] The ages of the reported patients ranged from 14 to 78 years. The pathogenesis of MFH is unknown. Malignant fibrous histiocytoma is composed of histiocyte-like and fibroblast-like cells arranged in a storiform pattern and accompanied by pleomorphic cells and multinucleated giant cells. According to the new classification of the World Health Organisation (WHO), MFH is divided into five subtypes as myofibrosarcoma, angiomatoid fibrous histiocytoma, undifferentiated pleomorphic sarcoma with giant cells, undifferentiated pleomorphic sarcoma with prominent inflammation and undifferentiated high-grade pleomorphic sarcoma.[7] In our case, the pathologic examination revealed giant cell variant of undifferentiated sarcoma.

Clinical diagnosis of testicular MFH is very challenging. Generally, a solid testicular mass undergoes inguinal orchiectomy without any delay after sampling of blood tumor markers such as AFP, β-hCG and LDH and definitive diagnosis can be made after final pathologic examination. FNA cytologic examination might be useful sometimes.[5] Ultrasound and CT does not give any specific findings for FMH. MRI may give more detailed information about adjacent soft tissues. Due to a conflict in differential diagnosis, we obtained MRI of the patient.

Typically, MFH has a poor prognosis. A complete surgical resection of the testicular mass should be the first step of treatment. Additionally, wide local excision of the scrotal wall might be necessary. The roles of adjuvant radiotherapy or chemoteraphy are not clear. Le Doussal et al.[8] reported that the addition of radiotherapy significantly decreased the risk of local recurrence in MFH. Chemotherapy is generally reserved for metastatic disease. Combination therapy with doxorubicin and ifosphamide have response rates ranging between 55 and 66%.[9] Our patient received adjuvant chemoteraphy and he is still alive without any sign of recurrence.

In conclusion, MFH can be seen as a testicular tumor and the initial therapy should be radical orchiectomy. There are no agreed adjuvant treatment methods. However, chemotherapy may prolong the survival of the patients with this rare malignant tumor.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

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