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CASE REPORT

Mazabraud's Syndrome: Intramuscular Myxoma Associated with Fibrous Dysplasia

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The association of fibrous dysplasia and intramuscular myxoma is a rare disease known as Mazabraud's syndrome. Both lesions tend to occur in the same anatomical region. The relationship between fibrous dysplasia and myxoma remains unclear, where an underlying localized error in tissue metabolism has been proposed to explain this occasional coexistence. Another example of this syndrome in a 52 year-old woman is reported. The patient presented with a soft tissue mass at the anteromedial mid part of the left thigh. After excision of the mass, three separate bone lesions were detected in her control MRI. The soft tissue mass was misdiagnosed as liposarcoma in another center, and the bone lesions were interpreted as metastasis. The hypocellularity and the indistinct vascular pattern of the lesion were consistent with myxoma. The Jam-Shidi needle biopsies of the osseous lesions were diagnosed as fibrous dysplasia. The recognition of this entity is important for appropriate management of the patient. Patients with soft tissue myxomas should be thoroughly examined for fibrous dysplasia. The greater risk of sarcomatous transformation in fibrous dysplasia with Mazabraud's syndrome should also be kept in mind. (Pathology Oncology Research Vol 10, No 2, 121–123)

Keywords: Mazabraud's syndrome, intramuscular myxoma, fibrous dysplasia

Introduction

Fibrous dysplasia is characterized by a localized tumor-like destruction of the bone by a dysplastic proliferation of fibrous tissue and immature woven bone. Systemic manifestations of this lesion may present with endocrine abnormalities and cutaneous hyperpigmentation.[3] The coexistence of fibrous dysplasia with soft tissue myxomas is a rare disease known as Mazabraud's syndrome.[10] The syndrome may be associated with monostotic or polyostotic forms of fibrous dysplasia and the soft tissue mass is single or multiple. However, in nearly all cases the soft tissue mass and the osseous lesions are localized in the same anatomical region.[1,2,3,6,7,15] Females are affected significantly more common, compared to males.[5,7]

Another case of this rare association is reported to emphasize the importance of recognition of Mazabraud's syndrome for proper management of the patient.

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Case

A 52 year-old woman had referred to another hospital with the complaint of a painless mass at her leg, present for two months. She had no history of trauma. Physical examination had revealed a 6x5 cm mobile, non-tender soft tissue mass at the anteromedial mid part of the left thigh. Ultrasonography showed 56x40x40 mm lobulated, solid tumoral mass with heterogeneous echoic pattern located in the distal part of the vastus medialis muscle. Colored doppler ultrasonography of the mass showed peripheral and central vascularization. There were no cystic or necrotic degeneration areas. The mass was totally excised. Grossly, it was described as capsulated, grayish – white with shiny gelatinous cut surface. The microscopic findings were interpreted as myxoid type liposarcoma with surgical margins intact. The blocks and the slides of the case were sent to our pathology laboratory for consultation. Microscopically, the tumor was hypocellular consisting of scattered stellate and spindled cells within a loose myxoid stroma (*Figure 1*). The lesion was poorly cellular. Mitotic figures or atypia were not present. The myxoid stroma showed staining with

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Alcian-blue and mucicarmine consistent with a mucopolysaccharide rich ground substance (*Figure 2*). Immunohistochemical studies showed no staining with S100 (Neomarkers, Clone 4C4.9), FVIII (Dako, polyclonal) and CD31 (Neomarkers, Clone JC/70A). The lesion was interpreted as myxoma.

Postoperative MRI imaging of the left thigh showed cystic hemorrhagic areas probably due to the operation. Besides this, a 6x2x2 cm mass at the femoral neck and metaphyseal region, an 8x1.5x1.5 cm mass at mid diaphyseal part and a 6x1x1 cm mass at the distal diaphyseal part of the left femur were detected (*Figure 3*). Plain radiographs of the femur showed deformity, cortical expansion and thinning, and ground glass appearance at the femoral neck and proximal metaphyseal region. Other two lesions at the mid-diaphyseal and distal diaphyseal regions had the same features.

Whole body bone scanning after Technecium bone scintigraphy showed apparent uptake at the proximal, medial and distal femur and tuberositas tibia. Any other pathologic uptake area was not determined. With suspicion of metastasis, Jam-Shidi needle biopsies from tibia and femur were obtained. Microscopic examination of the lesions showed immature woven bone trabecula devoid of osteoblastic lining laid in a proliferated fibrous connective tissue (*Figure 4*). The bone lesions were interpreted as fibrous dysplasia. The patient is well and has no complaints in her 3 year follow up.

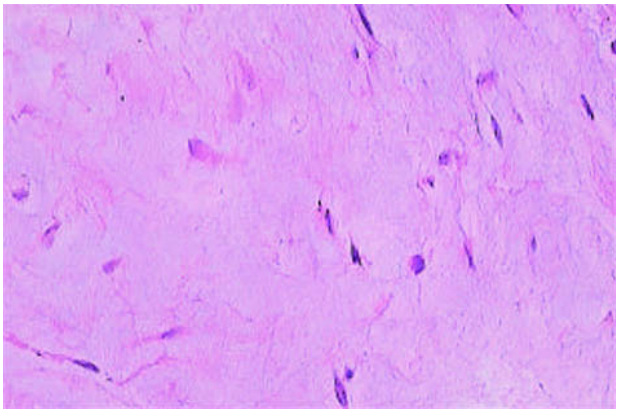

Figure 1. *Myxoma consisting of scattered stellate and spindled cells within a loose myxoid stroma (HE x 200)*

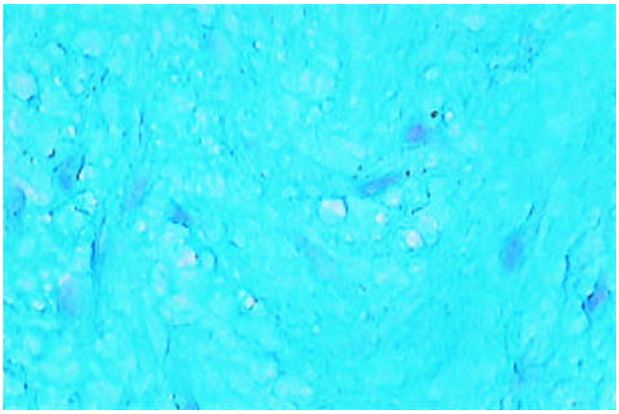

Figure 2. *The myxoid stroma showed staining with Alcian-blue (HE x 200)*

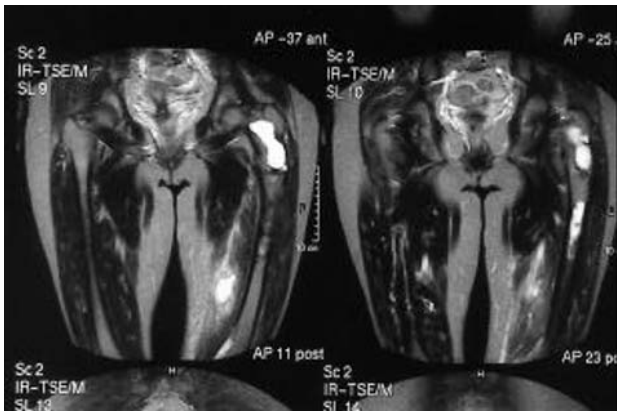

Figure 3. *Postoperative MRI showed cystic hemorrhagic areas at the medial part of the left thigh and three osseous lesions at the femoral neck-proximal metaphyseal, mid diaphyseal and distal diaphyseal regions.*

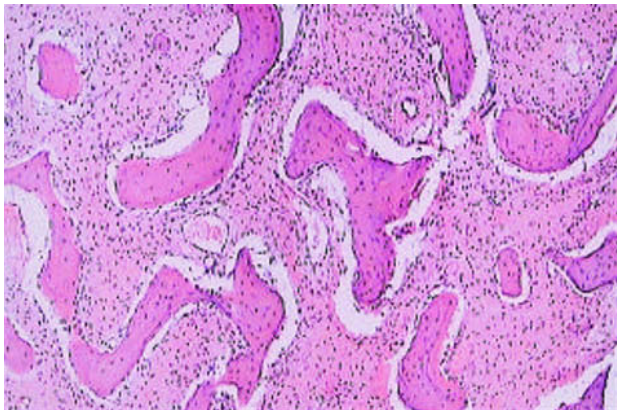

Figure 4. *Immature woven bone trabecula devoid of osteoblastic lining laid in a proliferated fibrous connective tissue (HE x40)*

Discussion

While intramuscular myxoma is a relatively uncommon benign soft tissue tumor, its rare occurrence with fibrous dysplasia is a distinct entity known as Mazabraud's syndrome.[10] The relationship between fibrous dysplasia and myxoma remains unclear. A common histogenesis has been proposed for both lesions. Wirth has suggested a basic metabolic error of both tissues during the initial growth period, restricted to the region of bone involvement.[15] Miettinen, in his survey of intramuscular

myxomas, has found a higher incidence of minor bone abnormalities as compared with the normal population.[11] The abnormalities were described as cortical thickening, cystic translucencies, exostoses, or supernumerary bones. These changes were located in the bone close to the site of myxoma in three of the cases. He has proposed a common yet, undetermined denominator in the origin of the lesions.

Although myxomas tend to occur singly, 81% of the patients with Mazabraud's syndrome had multiple myxomas.[12] The myxomas appear to be located in the lower extremities near the bone most affected by fibrous dysplasia.[3,12,14] The syndrome is more common with the polyostotic form of fibrous dysplasia, but monostotic involvement has been reported as well.[7,14] In general, fibrous dysplasia antedates the appearance of intramuscular myxoma and the soft tissue lesions become apparent many years later.[1,15] Rarely the intramuscular myxomas are detected before the osseous lesions.[4] The reported patient had referred to the hospital with the complaint of a painless soft tissue mass and the bone lesions were detected after evaluation of the patient, raising the suspicion of metastasis. After treatment, no other soft tissue mass or recurrence developed in the 3 year follow-up of the patient.

Several benign lesions like myxolipoma, myxoid neurofibroma, myxochondroma, as well as richly myxoid malignant tumors may be confused with intramuscular myxoma. Myxoid liposarcoma, myxoid malignant fibrous histiocytoma, low grade fibromyxoid sarcoma, extraskeletal myxoid chondrosarcoma and botryoid type rhabdomyosarcoma are some of the malignant lesions to be taken into consideration in differential diagnosis. Great degree of cellularity, a more prominent vascular pattern or specific cellular elements like lipoblasts, chondroblasts or rhabdomyoblasts are features in favor of malignant lesions[5]. Awareness of Mazabraud's syndrome, especially when the myxoma is solitary can prevent misdiagnosis of malignant mesenchymal tumor containing myxoid tissue.[2]

Malignant transformation of a myxoma has not been reported, although local recurrence may be expected with incomplete excision of lesion.[11,13,15] While sarcomatous transformation is uncommon in fibrous dysplasia alone, greater risk is present for patients with Mazabraud's syndrome. Sporadic cases of such malignant degeneration have been reported, calling for necessity of clinical follow up.[8,9,16]

The soft tissue mass had been misinterpreted as liposarcoma, followed by wide excision. The osseous lesions in MRI had aroused suspicion of metastasis and the patient was about to be treated with unnecessary radiotherapy. In a patient with multiple intramuscular tumors associated with bone lesions, recognition of Mazabraud's syndrome is important for appropriate management to avoid unnecessary wide excision and radiotherapy. The treatment is dependent on the extent of the lesions. Myxomas should be excised if pain or pressure symptoms develop.[11,13] Besides this, a proper histopathologic investigation of the lesions should also be carried out to exclude malignancy, keeping in mind the possibility of a sarcomatous transformation or a metastatic tumor in an elderly patient.

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