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Case Report

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Nodular fasciitis on the arm

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Abstract

A 20-year old female with no trauma history presented to our department of dermatology with a 6-month history of a painful tumor of the arm. Physical examination revealed a 5-cm hard-elastic and friable tumor, which were movable and unattached to the underlying tissues. Surgical excision of the tumor was performed. Histopathologic examination concluded to nodular fasciits. Nodular fasciitis is a benign pseudosarcomatous tumour composed of a vascular and fibroblastic proliferation. Surgical excision is the gold standard treatment and recurrence is rare.

Key Words: Nodular Fascitis, Soft Tissue Neoplasms, Pseudosarcoma

Introduction

Nodular fasciitis is a rare, benign and discrete proliferation of fibroblasts in the subcutaneous tissues often centered on the deep fascia [1]. It is the most common pseudosarcoma of soft tissues. However, it is often misdiagnosed as a malignant tumor due to its rapid growth, infiltrative growth pattern, high cellularity, and increased mitotic activity [2]. We present a case of nodular fasciitis on the arm to raise awareness of nodular fasciitis as a differential diagnosis in rapidly growing solitary tumors.

Case Report

A 20-year-old otherwise healthy female presented with a 6-month history of a painful subcutaneous tumor in the left arm. There was no history of trauma. On physical examination, a subcutaneous 50-mm hard-elastic tumor with erythematous skin above was observed (Fig.1). On palpation, the lesion was not attached to the underlying tissue. There were no palpable axillary lymph nodes. An incisional biopsy was performed, the tumor was bleeding and friable. The specimen was interpreted initially as an atypical fibrohistiocytic lesion with the histologic differential diagnosis including pyogenic granuloma and atypical fibrous histiocytoma. The patient was referred to an orthopedist. Surgical excision of the tumor was performed. Histology study showed a proliferation of mesenchymal spindle cells with ovoid nuclei of homogeneous chromatin, without atypia. The background was edematous and myxoid with an an abundance of small vessels (Fig.2). Immunohistochemistry (IHC) staining was positive for smooth muscle actin (SMA), focally positive for CD68 and negative for CD34 and factor VIII. These findings were compatible with nodular fasciits. One year later, there was no evidence of recurrence.

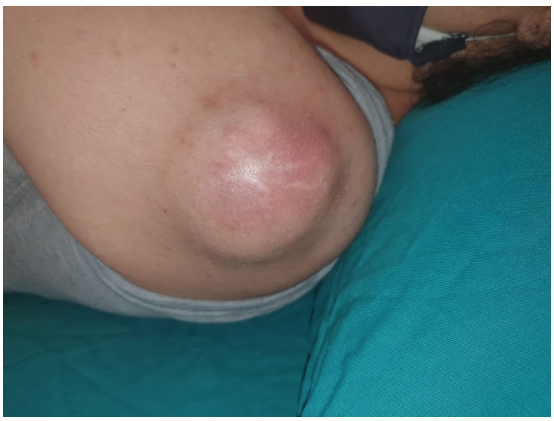

Figure 1: a subcutaneous 50-mm hard-elastic tumor with erythematous skin above

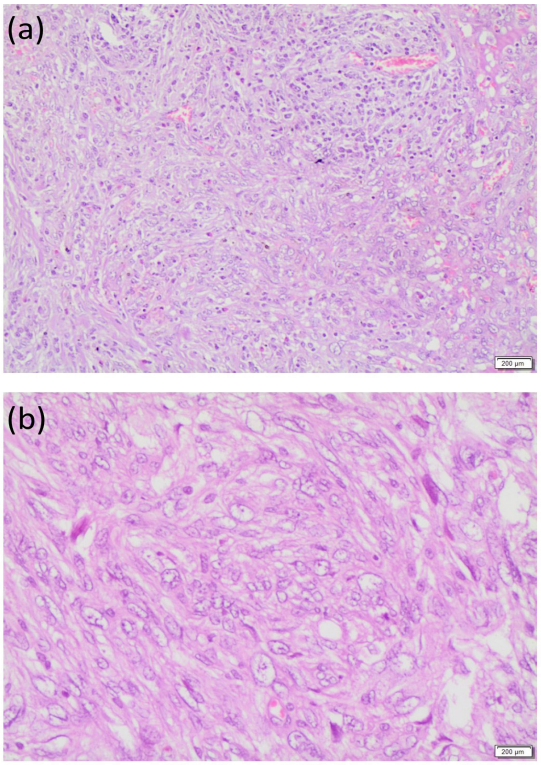

Figure 2a: mesenchymal spindle cells proliferation, edematous background with abundance of small vessels (Hematoxylin and eosin, *100)

Figure 2b: spindle cells: ovoid nuclei of homogeneous chromatin, without atypia (Hematoxylin and eosin,*200)

Discussion

Nodular fasciitis (NF) is a benign and self-limiting pseudosarcomatous tumour composed of a vascular and fibroblastic proliferation [2]. The pathogenesis of NF is unknown. The etiology has been associated with previous trauma in 5–10% of the cases [3]. Recently, studies have identified arrangement of the ubiquitin-specific protease 6 (USP6) gene as a recurrent and specific finding leading to the increased acceptance that nodular fasciitis represents a clonal neoplastic proliferation [4-6]. In this case, there was no history of trauma.

Classic NF occurs as a rapidly growing nodule, most common in young adults and affecting equally males and females, which is similar to the pattern for intradermal NF [7]. Approximately 10% of the lesions occur in children [8]. The most common site is the upper extremity, as in our patient. It may be located also on the lower extremity and the trunk [9]. Involvement of the head and neck has been reported mainly in children. Cases with rare tumor locations, such as the lower female genital tract, bladder, prostate, tongue, and parotid gland, have been reported [3].

Histologically, nodular fasciitis is characterized by a proliferation of spindle cells in a myxoid stroma accompanied by a network of capillaries and extravasated erythrocytes. Remarkably, in spite of the high number of mitotic figures, atypia's are rare. The subcutaneous form is the most frequent subtype [2]. Immunohistochemistry is necessary to diagnosis. It is typically positive for muscle-specific action, SMA, and vimentin and generally negative for S-100 protein, desmin, trypsin, factor VIII, macrophage-specific antigen, and HLA-DR1. Negative expression of CD34 is useful to rule out a sarcomatous nature of the lesion. NF may be positive for CD-68 or KP-1, a histiocyte-specific marker [3]. The main clinical and histologic differential diagnosis is proliferative fasciitis. The microscopic appearance of nodular fasciitis is distinct, without the large, basophilic cells seen in Proliferative Fasciitis [9]. Other diagnosis could be proposed such as benign and malignant fibrous histiocytoma, dermatofibrosarcoma protuberans, fibrosarcoma, leiomyosarcoma, spindle cell carcinoma and spindle-cell melanoma [2]. Our patient underwent surgical treatment, with complete excision. Treatment options for nodular fasciitis include observation as many tumours regress spontaneously vs partial or complete resection [1]. Given the typical history of a growing mass and the need for pathologic review for diagnosis, we do not recommend observation alone. Recurrence after excision is very rare, although careful observation is required [10].

Conclusion

NF may easily be mistaken for a malignant tumour due to its rapid growth and histopathologic similarities. Awareness of NF and its benign nature among dermatologists and dermatopathologists is essential to avoid misdiagnosis and subsequent unnecessary treatment.

Conflict of Interest: None

References

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