Benign fibrous histiocytoma of the brachium in a 14-year-old boy

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Abstract—Fibrous histiocytoma is a benign tumor involving soft tissues that can present as a fibrous mass involving various areas of the human body. Herein, we present a case of benign fibrous histiocytoma in the left brachium in a 14-year-old boy treated with surgical excision.

Keywords—benign fibrous histiocytoma, child, operative treatment.

1 Introduction

Histiocytoma is a tumor consisting of histiocytes. Histiocytes are cells that are part of the mononuclear phagocytic system. There are two main types of histiocytoma: benign fibrous histiocytoma (BFH) and malignant fibrous histiocytoma. BFH is terminologically described as BFH of the skin (superficial or deep), the usual type, and currently also as a dermatofibroma. BFH can be observed in different parts of the body. According to Fletcher et al.\textsuperscript{1}, BFH affects more commonly males and mainly those at a young age (between 2 and 3 decades), and in 58% of cases, the limbs are involved; localization in the area of the head and neck is reported in 22% of cases, and in the torso and pelvis, 11% and 9%, respectively\textsuperscript{2}.

BFH was first described by the American pathologists Kauffman and Stout\textsuperscript{1} in 1961, and in 1990, the British pathologist Fletcher\textsuperscript{2} published a series of 21 cases of BFH. The etiology of BFH remains unclear\textsuperscript{1}.

The diagnosis is mainly based on the location of the tumor, the clinical presentation, the imaging studies and the histological findings\textsuperscript{1}.

Clinically, BFH usually presents as a painless and slowly growing tumor\textsuperscript{1}. In imaging studies (X-ray, ultrasound, CT, MRI), BFH presents as a hypoechoic, homogeneous and well-demarcated tumor mass with a size of 0.5 to 4 cm. In differential diagnosis,
the following are taken into consideration: undifferentiated pleomorphic sarcoma, cutaneous leiomyosarcoma, dermatofibrosarcoma, tenosynovial giant cell tumor, solitary fibrous tumor, nodular fasciitis.4,5

The method of choice in the treatment is the wide local excision of the tumor. If excision is performed incompletely and within marginal limits, BFH recurs. According to Gleason and Fletcher, local recurrences were reported in 22% of patients.

2. Case report.

A 14-year-old boy was brought to our department with complaints of a painless tumor mass with a dense consistency, approximately 1.4/4 cm in size, located deeply on the medial surface of the left brachium. From anamnestic data, there was no trauma in the region, and the tumor enlarged gradually in size. During flexion of the elbow, pain was detected in the corresponding area. MRI revealed a tumor mass located in close relation to the neurovascular bundle (Figure 1). A wide excision was performed with preservation of the aforementioned bundle. The pathological finding of BFH (Figure 2 and 3) was confirmed by two independent pathologists. Eight months postoperatively (Figure 4 and 5), no local recurrence was reported.

Figure 1. Preoperative MRI

Figure 2. Microscopic view of the tumour. Scale bar 100 µm
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Figure 3. Microscopic view of the tumour. Scale bar 50 μm

Figure 4. Postoperative MRI on the eight month after operation
3. Discussion and Conclusion

In the current literature, BFH in children is extremely rarely reported. Described for the first time in our country, a case of BFH in the brachium aims to expand the knowledge of this benign tumor of different specialties.

Despite its benign nature, BFH can metastasize. Gleason and Fletcher observed two cases of metastasized BFH with dimensions of 6 and 9 cm, respectively. At the same time, an identical histological appearance with nonmetastatic BFH was established. Tumor necrosis was proven in one of the reported cases. The authors consider that 20% of deeply located BFHs recur and rarely metastasize.

The extreme rarity of BFH does not allow for a more in-depth discussion.
4. References


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