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BENIGN FIBROUS HISTIOCYTOMA (DERMATOFIBROMA): A CASE REPORT

HISTIOCITOMA FIBROSO BENIGNO (DERMATOFIBROMA): RELATO DE CASO

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Abstract
Background: Benign fibrous histiocytoma (BFH), also known as dermatofibroma, is a common benign cutaneous mesenchymal tumor. Despite its benign nature, it may mimic other spindle cell lesions clinically and histologically, necessitating accurate diagnostic evaluation. Case Presentation: We report a case of a patient presenting with a slowly growing, painless cutaneous dermal nodule. Complete local surgical excision was performed for diagnostic and therapeutic purposes. Histopathological Findings: Microscopic examination revealed a dermal-based spindle cell proliferation arranged in a storiform pattern, composed of fibroblast-like cells without cytologic atypia, necrosis, or increased mitotic activity. Immunohistochemical analysis showed positivity for CD68 and negativity for CD34, supporting the diagnosis of benign fibrous histiocytoma and excluding malignant spindle cell neoplasms. Conclusion:

Resumo
Antecedentes: O histiocitoma fibroso benigno (BFH), também conhecido como dermatofibroma, é um tumor mesenquimal cutâneo benigno comum. Apesar de sua natureza benigna, ele pode se assemelhar a outras lesões de células fusiformes clinicamente e histologicamente, exigindo uma avaliação diagnóstica precisa. Apresentação do caso: Relatamos o caso de um paciente que apresentava um nódulo dérmico cutâneo indolor e de crescimento lento. Foi realizada uma excisão cirúrgica local completa para fins diagnósticos e terapêuticos. Achados histopatológicos: O exame microscópico revelou uma proliferação de células fusiformes com base dérmica, dispostas em um padrão estoriforme, composta por células semelhantes a fibroblastos, sem atipia citológica, necrose ou aumento da atividade mitótica. A análise imuno-histoquímica mostrou positividade para CD68 e

This case highlights the importance of histopathological evaluation supported by immunohistochemical analysis in the accurate diagnosis of benign fibrous histiocytoma. In the present case, complete surgical excision was followed by a favorable outcome, reinforcing the value of a systematic diagnostic approach.

Keywords: Benign fibrous histiocytoma. Dermatofibroma. Case report. Spindle cell tumor. Immunohistochemistry.

negatividade para CD34, corroborando o diagnóstico de histiocitoma fibroso benigno e excluindo neoplasias malignas de células fusiformes. Conclusão: Este caso destaca a importância da avaliação histopatológica apoiada pela análise imuno-histoquímica no diagnóstico preciso do histiocitoma fibroso benigno. No presente caso, a excisão cirúrgica completa foi seguida por um resultado favorável, reforçando o valor de uma abordagem diagnóstica sistemática.

Palavras-chave: *Histiocitoma fibroso benigno. Dermatofibroma. Relato de caso. Tumor de células fusiformes. Imuno-histoquímica.*

1 INTRODUCTION

Benign fibrous histiocytoma (BFH), commonly known as dermatofibroma, is a frequent benign cutaneous mesenchymal tumor arising from dermal fibroblastic and histiocytic cells. It typically presents as a small, firm, slow-growing nodule and is most commonly encountered on the extremities. Although BFH generally follows a benign and indolent course, its clinical and histopathological features may overlap with other benign or malignant spindle cell tumors, creating potential diagnostic challenges.

Traditional diagnosis of BFH relies primarily on histopathological evaluation, supported by immunohistochemical analysis to exclude malignant mimickers. Accurate differentiation is essential to prevent overtreatment, particularly in lesions that demonstrate increased cellularity or atypical clinical features. Despite its common occurrence, reporting individual cases remains valuable to reinforce diagnostic criteria and highlight the role of histopathology and immunohistochemistry in routine clinical practice.

2 CASE PRESENTATION

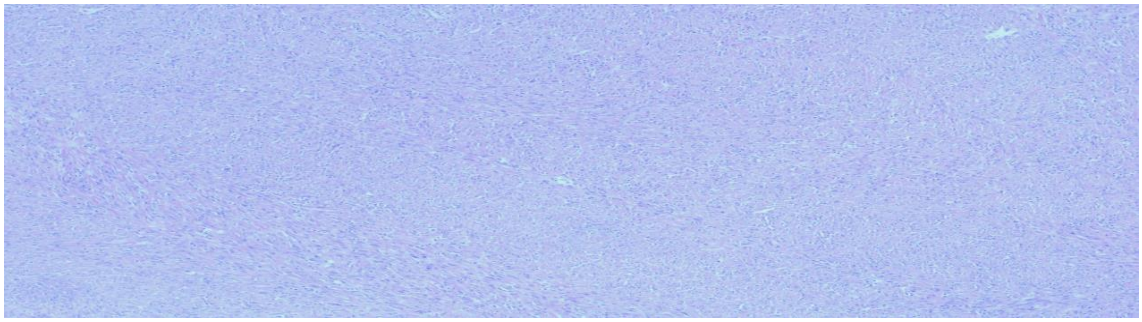
An 18-year-old patient presented to the surgical outpatient clinic with a slowly growing, painless cutaneous lesion located at the right scapular region of the upper back, which had been present for a long duration with a recent increase in size. The patient reported no history of trauma, prior surgical intervention at the site, or systemic symptoms such as weight loss, fever, or night sweats.

Clinical examination revealed a firm, well-circumscribed dermal mass measuring approximately 7 × 7 cm clinically, with intact overlying skin and no evidence of ulceration or inflammation. The lesion was non-tender and appeared fixed to the dermis but not to the underlying structures. The discrepancy between clinical and gross measurements reflects the approximate nature of preoperative clinical assessment.

No regional lymphadenopathy was detected, and the remainder of the physical examination was unremarkable **(Figure 1).**

Figure 1

Clinical appearance of the cutaneous lesion showing a well-circumscribed dermal nodule with intact overlying skin.



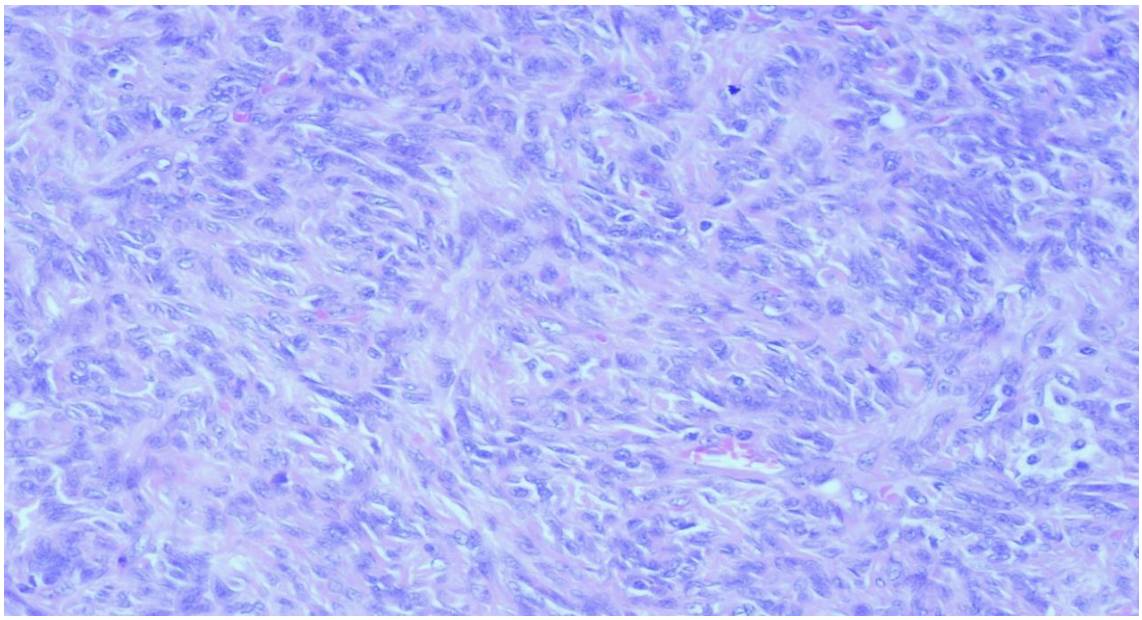
Initial differential diagnoses included dermatofibroma, benign fibrous histiocytoma, and other benign cutaneous soft tissue tumors. Given the lesion's persistence and overlapping clinical features with other spindle cell lesions, surgical excision was planned for both diagnostic and therapeutic purposes.

The patient underwent complete local excision of the lesion under local anesthesia. The procedure was uneventful, and the excised specimen was submitted for histopathological examination.

Gross examination revealed a well-defined, firm mass measuring 5 × 4.5 × 3 cm, with a whitish to gray cut surface. Microscopic examination demonstrated a dermal-based spindle cell lesion composed of fibroblast-like cells arranged in a storiform pattern, embedded within a collagenous stroma. The tumor cells exhibited bland nuclear features without cytologic atypia, necrosis, or increased mitotic activity (**Figure 2**).

Figure 2

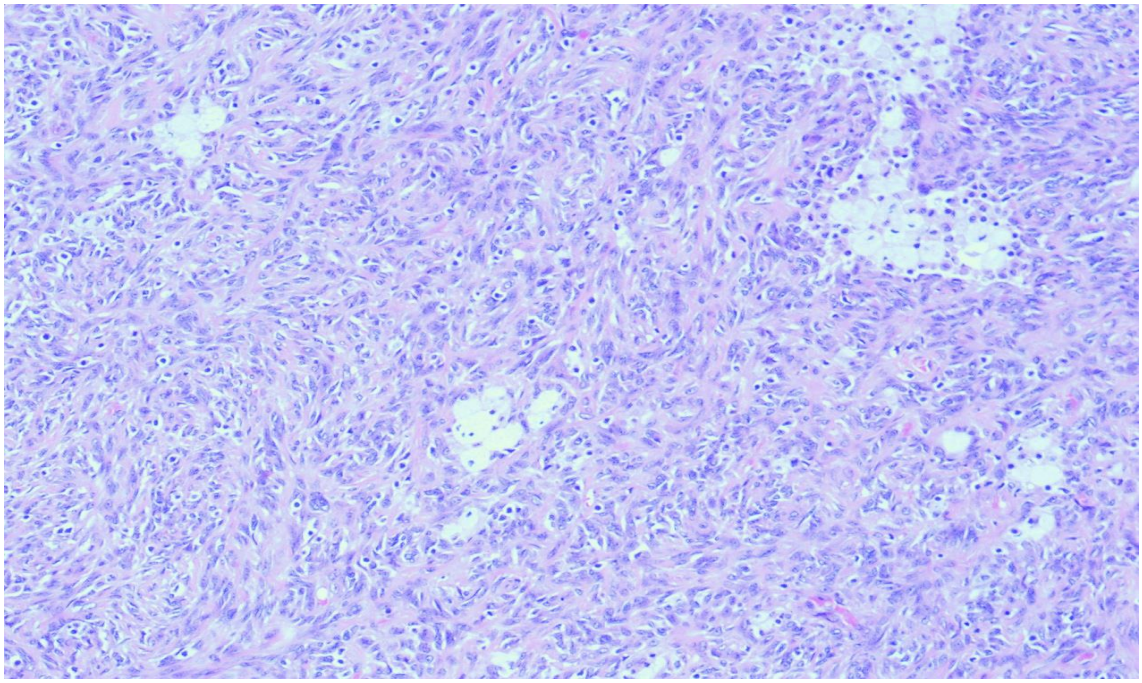
Histopathological features of benign fibrous histiocytoma showing a dermal-based spindle cell proliferation arranged in a storiform pattern (hematoxylin and eosin stain, ×200).



A medium-power microscopic view further highlighted the characteristic storiform architecture of the lesion, with scattered histiocyte-like cells and focal inflammatory infiltrates within the collagenous background **(Figure 3).**

Figure 3

Medium-power view highlighting the storiform architecture with scattered histiocyte-like cells within a collagenous stroma (hematoxylin and eosin stain, ×100).



Immunohistochemical analysis demonstrated positive staining for CD68, while CD34 staining was negative.

These findings supported the diagnosis of benign fibrous histiocytoma and excluded malignant spindle cell neoplasms. Surgical margins were free of tumor.

The postoperative course was uneventful. The patient was discharged on the same day, and follow-up evaluation showed satisfactory wound healing with no evidence of recurrence.

3 DISCUSSION

Benign fibrous histiocytoma is a common benign cutaneous tumor characterized by fibroblastic and histiocytic differentiation. Clinically, it often presents as a painless, slowly enlarging dermal nodule, most frequently affecting the extremities. Despite its benign behavior, BFH may clinically and histologically resemble other spindle cell tumors, necessitating careful diagnostic evaluation.

The present case demonstrates a typical clinical presentation of BFH. Although such lesions are common, persistence and overlapping clinical features with other soft

tissue tumors often require surgical excision to establish a definitive diagnosis. Clinical examination alone is insufficient to reliably distinguish BFH from entities such as dermatofibrosarcoma protuberans, leiomyoma, or other fibrohistiocytic tumors.

Histopathological examination remains the diagnostic cornerstone for BFH. In this case, the lesion exhibited classic features, including a dermal-based spindle cell proliferation arranged in a storiform pattern, collagen deposition, and absence of cytologic atypia or increased mitotic activity. These findings are consistent with previously described histological characteristics of BFH.

Immunohistochemistry serves as an important adjunct in confirming the diagnosis and excluding malignant mimickers. The tumor's positivity for CD68, together with negative CD34 staining, supports the diagnosis of benign fibrous histiocytoma and effectively differentiates it from dermatofibrosarcoma protuberans, which typically demonstrates strong CD34 positivity. The integration of histopathological and immunohistochemical findings ensures diagnostic accuracy and helps prevent overtreatment.

Complete local excision with clear margins is considered curative for BFH, with a very low risk of recurrence. In the present case, surgical management resulted in an excellent outcome, further supporting the benign clinical behavior of the lesion when appropriately treated.

4 CONCLUSION

Benign fibrous histiocytoma is a benign cutaneous tumor that may pose diagnostic challenges due to its histopathological overlap with other spindle cell lesions. Accurate diagnosis relies on careful histopathological evaluation supported by immunohistochemical analysis. In the present case, complete surgical excision was followed by a favorable outcome. Reporting such cases highlights the importance of a systematic diagnostic approach and contributes to increased clinical awareness of this entity.

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Authors' Contribution

All authors contributed equally to the development of this article.

Data availability

All datasets relevant to this study's findings are fully available within the article.

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