

Hibernoma: An Uncommon Soft Tissue Tumor - A Detailed Case Study and Literature Review

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Abstract: *Hibernoma is a rare, benign tumor arising from brown adipose tissue. Although hibernomas are typically slow - growing, painless masses, they can mimic malignancy on imaging and thus should be included in the differential diagnosis of soft tissue masses. We present a case of a 37 - year - old male with a two - year history of a painless mass in the lower neck, which was initially suspected to be fibroadenoma based on Examination and CT findings. Surgical excision of the mass revealed a well - circumscribed mass composed of mature adipocytes, the final histopathology revealed the Diagnosis of Hibernoma. This case report highlights the importance of considering hibernoma in the differential diagnosis of soft tissue masses and provides a literature review of hibernoma.*

Keywords: Hibernoma, Soft tissue tumor, brown adipose tissue

1. Introduction

Hibernoma is a rare, benign soft tissue tumor that accounts for less than 1% of all soft tissue tumors [1]. It was first described by Merkel in 1906 and was named hibernoma because of its morphologic similarity to brown adipose tissue in hibernating animals [2]. Hibernomas are typically slow - growing, painless masses that are occasionally confused with lipomas [1] and can occur in various locations but are most commonly found in the subcutaneous tissue of the back, thigh, and shoulder [3]. The diagnosis of hibernoma is often made based on histopathological examination, which reveals a well - circumscribed mass composed of brown fat cells [2]. Hibernomas are typically treated with surgical excision, which is curative in most cases [1], although they can present with imaging features that mimic malignancy [4].

2. Case Report

A 37 - year - old male presented with a two - year history of a slow - growing, painless mass in the lower of posterior neck. Physical examination revealed a firm, mobile mass measuring approximately 10 by 15cm in diameter. CT scan showed a well - circumscribed, fat mass lesion seen on the lower neck nearly posterior to the Right side and between the muscle measuring around 10 cm * 7 cm * 3 cm, most likely representing lipoma (Figure 1). The patient underwent surgical excision of the mass, which was found to be a well - circumscribed, lobulated mass measuring 10cm in diameter (figure 2)

Intra – Operative approach and findings

The patient was placed in a prone position, and the surgical site was prepped and draped in a sterile manner. A transverse incision was made over the palpable mass in the back of the neck. The subcutaneous tissue was dissected, and the mass was identified. The mass was well - circumscribed, measuring approximately 10 cm in diameter. There were no signs of infiltration or lymph node involvement. The mass was carefully dissected from the surrounding tissue using electrocautery and scissors. Trapezius muscles were identified and preserved then Hemostasis was achieved with electrocautery, and the wound was irrigated with saline solution.

The skin was closed with a skin stapler, and a sterile dressing was applied. The patient tolerated the procedure well, and there were no complications.

The patient was transferred to the recovery room in stable condition. The wound was inspected, and there was no evidence of bleeding or hematoma formation. The patient was instructed to avoid it.

Follow - up appointments were scheduled to monitor the wound healing process and to discuss the pathology results. After two weeks Histopathological revealed a neoplasm composed of mature adipocytes with fibrofatty tissue fragments, consistent with a diagnosis of hibernoma.



Figure 1: Coronal, Sagittal and Axial CT appearance

“Fat mass lesion seen on the lower neck nearly posterior To the Right side and between the muscle measuring around 10 cm * 7 cm * 3 cm “

3. Discussion

Hibernomas are rare tumors that can present with imaging features that mimic malignancy [4]. It is important to consider hibernoma in the differential diagnosis of soft tissue masses with atypical imaging features [1]. Hibernomas are composed of brown fat cells and can occur in various locations, but are most commonly found in the subcutaneous tissue of the back, thigh, and shoulder [3]. The diagnosis of hibernoma is often made based on histopathological examination, which reveals a well-circumscribed mass composed of brown fat cells [2]. Hibernomas are typically treated with surgical excision, which is curative in most cases [1]. However, hibernomas can present with imaging features that mimic malignancy, and thus should be included in the differential diagnosis of soft tissue masses [4]. Hibernomas are generally considered to be slow-growing, painless masses [1], although they can occasionally be associated with pain, paresthesia, or other neurologic symptoms if they compress adjacent structures [5].

Several case reports have described hibernomas in various locations, including the thigh [6 - 9]. In our case, the patient presented with a painless mass in the posterior of the Neck, which was initially suspected to be fibroadenoma based on CT imaging. The definitive diagnosis of hibernoma was made based on a histopathological examination of the excised mass. The histopathologic findings in our case were consistent with those described in the literature, with the mass composed of mature adipocytes with interspersed nests of multi-vacuolated cells [1, 2].

The differential diagnosis of hibernoma includes other benign adipose tissue tumors, such as lipoma and liposarcoma, as well as malignant tumors such as myxoid liposarcoma and well-differentiated liposarcoma [1, 4]. Imaging features that suggest malignancy, such as increased vascularity or invasion of adjacent structures, can be seen in hibernomas and can be misleading [4]. Thus, histopathological examination remains the gold standard for diagnosis [1, 2].

4. Conclusion

This case report highlights the importance of considering Hibernoma in the differential diagnosis of soft tissue masses with atypical imaging features suggestive of malignancy. Although Hibernomas are typically slow-growing, painless masses, they can occasionally be associated with neurologic symptoms due to compression of adjacent structures. Clinicians should be aware of the possibility of Hibernoma as a potential diagnosis when encountering soft tissue masses with atypical imaging features. Further studies are needed to better understand the pathogenesis of Hibernoma and to identify potential biomarkers for diagnosis and treatment.

Conflicts of interest

No conflicts of interest.

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Consent

Written informed consent was obtained from the patient for this study. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request. The information in this case report are completely de-identified.

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