

A rare case of adipocytic tumor in subscapular region: hibernoma

Subskapular bölgede nadir bir adipositik tümör vakası: hibernom

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ABSTRACT

Hibernoma is a uncommon, benign adipocytic neoplasia that arise from persistent of brown adipose tissue. Hibernoma is similar in clinical presentation of malignant tumors as liposarcomas, however they have not been associated with malignant potential. Hibernomas are usually painless, encapsulated and yellow-tan colored soft tissue neoplasie, generally viewed in adults. They consist of big cells that have centrally nuclei and acidophilic-granular cytoplasm. In this article, the histologic and clinical properties of a hibernoma arising from subscapular region was described

Keywords: Hibernoma, adipocytic tumor, subscapular region

ÖZ

Hibernom kalıntı kahverengi adipoz dokudan ortaya çıkan, nadir görülen iyi huylu adipositik bir neoplazidir. Hibernom, klinik prezentasyonda liposarkomlar gibi malign tümörlere benzer, ancak bu tümör malignite potansiyeli ile ilişkilendirilmemiştir. Hibernomlar genellikle ağrısız, kapsüllü, sıklıkla yetişkinlerde görülen, sarı renkli yumuşak doku neoplazileridir. Santral çekirdek ve asidofilik-granüllü sitoplazması olan büyük hücrelerden oluşurlar. Bu yazıda, subskapular bölgeden kaynaklanan bir hibernomun histolojik ve klinik özellikleri tanımlanmıştır.

Anahtar Kelimeler: Hibernom, adipositik tümör, subskapuler bölge

INTRODUCTION

Hibernomas are a unusual, benign lipocytic neoplasias arising from persistent of brown fat resembling to the certain hibernating animal species (1). The brown adipocytic tissue has a position of thermogenesis in the early years of life, but it recedes with age. Remnant of brown fat in adults is generally localized at the scapular region, thigh, retroperitoneum, mediastinum and head and neck (2). Usually, this remnants of brown fat has no impact on the homeostasis and still remains asymptomatic. Rarely, the remnants fat can grow slowly, causing to form

a lipocytic neoplasia. Therefore, hibernoma cases are well described in abdominal cavity, chest and head and neck in the current literature (3,4). In this case, we reported a rare hibernoma case at the subscapular region with a painless mass and reviewed the current literature about clinical process and treatment.

CASE REPORT

Thirty-three year old male patient. Ultrasonography performed at a center with a complaint of swelling on the right subscapular region for about one year showed a lesion compatible with lipomas. A spinal com-

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Received: 14.08.2018 **Accepted:** 03.10.2018 **Doi:** 10.32322/jhsm.453528

To cite this article: Zengin M. A rare case of adipocytic tumor in subscapular region: hibernoma. J Health Sci Med 2019; 2(3): 99-101.

puted tomography scan of the back has described a mass lesion that may be compatible with lipoma or conglomerate lymphadenomegaly. On the macroscopic assessment of the mass excision, one soft tissue material was observed, measuring 7x5 cm in its largest size, with occasional encapsulated appearance, mostly in areas with brown, somewhat dirty yellowish fatty tissue. Microscopic examination showed the tumor that composed of vacuolar, granular and eosinophilic cytoplasmic cells with diffuse pattern or cord structures. Some of the tumoral cells that oval-round nuclei located in the centrally, and some of them in the peripheral. Tumor contains numerous small capillary vessels, and the lobules divided by fibrovascular septa (**Figure a-c**). Atypia and mitotic activity were not observed and tumoral cells were stained with S-100 stain (**Figure d**). The case was diagnosed as Hibernoma with these findings.

Hibernoma is characterized by the arrangement of cells, resembling normally brown fat tissue. **a**. Hibernoma formed diffuse patterns or cords structures (H&Ex200) **b-c**. Hibernoma composed of cells with vacuolar, granular and eosinophilic cytoplasm, centrally or peripherally localized small, round nuclei, were observed (H&Ex200/400) **d**. Positivity of tumoral cells for S-100 antibody (X400).

DISCUSSION

Hibernomas are unusual benign lipocytic tumor originating from persistent of brown fat tissue (1). This tumor was defined by Merkel just about a hundred years ago firstly who called as “pseudolipoma”. In

1914, Gery gave the name of hibernoma to this tumor because of its similarity to hibernating animals brown fat (1,6). Hibernomas regard as about 2% of all benign lipomatous neoplasia (2). Thus far, approximately 170 case reports and series were reported. Hibernomas are less common seen in females. Fourth and fifth decads are the typical presentation times. It is usually painless tumor with slowly developing, presenting as a mobile palpable mass or incidental at imaging (3). Hibernomas may arise with locally increased skin temperature because of the hypervascularity. The compression symptoms to adjacent structures may developed because of they can reach very large size as 20 cm (4).

The molecular basis of hibernoma is less demonstrated and the aetiology is unknown. In this tumor, chromosome 11 which encodes the MEN 1 suppressor gene show deletions (5). Initially, the occurrence of this benign tumor was reported to associate with persistent brown fat and so that commonly localized in the interscapular area, retroperitoneum, mediastinum and chest wall. Whereas, clinical studies showed that in 30% of the cases the thigh to be a preferential localization (6,7). Most hibernomas (82%) present as a typical features that three cell subtypes are differentiated (eosinophilic, pale staining and mixed cells). Other variants such as spindle-cell variants, lipoma-like variants, and myxoid variants are less common (7). Hibernoma is commonly good diagnosed with imaging exhibiting hyperechoic signal and regular borders, except retroperitoneal and intrathoracic hibernomas. Biopsy is not proposed for hibernomas, but the diagnosis is not confirmed

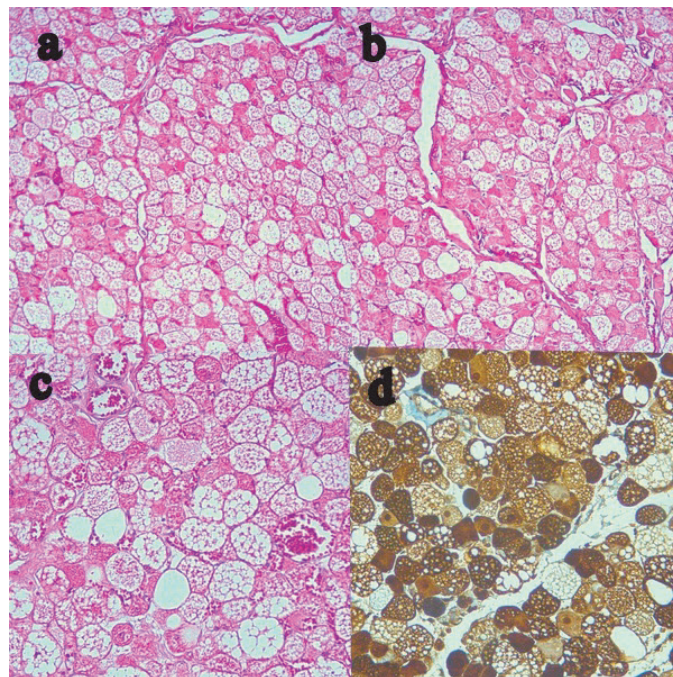


Figure. Representative examples of hematoxylin and eosin (H&E) and S-100 with Hibernoma

before the biopsy in various imaging modalities (8).

Hibernoma is benign lipomatous neoplasia with no any risk of transformation to malignancy or metastases. If the recognition is confirmed in asymptomatic hibernoma, surgical resection is not required (9). But, similar histological presents in atypical lipomatous tumors as well as in well-differentiated liposarcomas with hibernomas are described. Thus, identification of hibernoma with biopsy does not exclude the similar features of hibernoma in liposarcomas. Surgical excision of hibernomas cures the disease whereas incomplete excision carries the risk of recurrence (9,10).

The final diagnosis must be made after the complete resection. The histopathological findings in hibernomas as; 1) small, eosinophilic, regular, cytoplasmic vacuoles, 2) round, small regular nuclei and 3) delicate branching capillaries. The color of hibernomas is given from abundant mitochondria and hypervascularization (11). Concerning the distinction with liposarcoma, some histopathological properties such as mixture of uni-multivacuolated lipomatous cells and delicate, rich capillary are remove to a misdiagnosis. Today, hibernoma can be diagnosed by histological typical features such as the existence of uni-multivacuolated fat cells similar to brown tissue. We have not detected recurrence or metastases in our 3 year follow-up of our patient that seems to be in appropriate with the reported cases (11).

CONCLUSION

Hibernomas are uncommon benign lipomatous tumors but can mimics several malignant adipocytic lesion such as liposarcoma. Imaging plays a crucial role in the distinction from the other benign and malign diagnosis. The complete resection correspond to the gold standard for the choose the appropriate treatment. Until now, the malignant transformation or recurrence case are not defined in the literature.

DECLARATION OF CONFLICTING INTERESTS

The author declared no conflicts of interest with respect to the authorship and/or publication of this article.

ETHICS

Institution approval was obtained for data use.

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