Hibernoma: A rare entity at Rare location: Case report of 2 cases with review of literature

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Abstract

Hibernoma are rare benign tumors of brown adipose tissue. The tumor was first described in 1906 by Merkel who named them Pseudolipoma. The term Hibernoma was given by Grey in 1914 because of its similarity to brown fat in hibernating animal. Males are more often involved than females. Here we report on two patients of age group 14 years and 60 years male respectively. The tumor presented with swelling temporal region in first patient and with parietal region swelling in other patient.

Keywords: Hibernoma, benign neoplasms, FNAC.

1. Introduction

Hibernoma are uncommon, benign neoplasms of adipose tissue composed of brown fat. [1,2] These tumors are asymptomatic and slow growing. In contrast to lipoma, which is derived from white adipose, hibernoma are extremely rare, with fewer than 200 overall cases reported in the literature [3]. These tumors most often occur in region proximal to the axial skeleton where brown fat existed in the fetus and persisted into the adult life. Most commonly located in inter-scapular region, superior mediastinum, axillae, retroperitoneum and the neck. Our report describes an unusual case as management of unexpected findings in the excision of scalp hibernoma.

2. Case Report

2.1 Case Report 1:

The patient is 14 yrs old boy who presented with a swelling on parietal region of scalp. On local examination, the swelling was 2x1 cms, well defined, firm and located in the superficial subcutaneous plane. The swelling was painless but gradually increasing in size. He gave history of changing coloration of that swelling. It was soft and mobile over bone, it did not seem tethered to surrounding soft tissue. Overlying skin was normal and swelling not tender to touch. Fine-needle aspiration cytology (FNAC) of the swelling was performed.

2.2 Case Report 2:

A 60 yrs old male patient presented with the palpable soft tissue swelling on right temporal region since 1 yr. On local examination, the swelling was 2x2 cms, well defined, firm and located in the superficial subcutaneous plane. It was painless but gradually increased in size over months. The overlying skin was normal. He had no neurological complaints. FNAC of the swelling was performed.

Smears prepared from the FNAC of both the swellings show similar morphology. Smears are cellular and comprised primarily of clusters of uniform round cells with well defined borders as well as occasional single cells. Cytoplasm was filled with small, uniform vacuoles with granularity. The nuclei often were centrally placed with small nucleoli. A delicate network of capillaries frequently surrounded the cells. No nuclear atypia was present. Taking
into consideration about the cell hibernoma, a cyto-
diagnosis of benign adipose tissue tumor consistent with
Hibernoma was made in both the cases.

Excision of both the lesions was done. Grossly,
specimen of size 2x1 cms and 3x3 cms soft tissue was
received in the histopathology section respectively.
Histologic examination revealed benign adipocytes with
peripheral nuclei but no signs of cellular atypia. Also noted
were occasional areas of granular eosinophilic cytoplasm,
consistent with the diagnosis of hibernoma in both the
cases.

Due to the hypervascularity, hibernomas may
sometimes appear with locally increased skin temperature.
They can reach a size of up to 20 cms so that symptoms
secondary to compression of adjacent structures may
develop [9].

Hibernoma should be included in the differential
diagnosis of lipomatous soft- tissue tumors. The imaging
findings of hibernoma are not specific, other differential
diagnostic considerations for a mass with signal similar to
fat or containing large intratumor vessels include
angiolipoma, intramuscular hemangioma with fat, spindle
cell lipoma, pleomorphic lipoma, lipoblastoma,
hemaniopericytoma and hemangioblastoma, as well as
malignant processes including lipoma-like well
differentiated liposarcoma and myxoid liposarcoma [10].

IHC is not contributory, but S-100 protein is
usually positive in both eosinophilic and pale cells and
staining pattern of S-100- positive cell varies from focal to
diffuse. Most tumors are CD34 negative. By definition,
hibernoma should be negative for CDK4 and MDM2, two
markers that characterize well differentiated liposarcoma.
In equivocal cases, immunohistochemistry can be
supplemented by fluorescence in-situ hybridization (FISH)
to exclude amplification of MDM2 and hence exclude
atypical lipomatous tumor/liposarcoma. Cytogenetic
analyses of hibernomas have consistently revealed
structural rearrangements of chromosome 11q13 and
11q21, but these are not unique to hibernomas and have
also described in lipoma.

Curative treatment of hibernoma is complete
excision. Because the tumor usually has a well defined
capsule and does not show infiltrative growth pattern,
preserving vital structures is recommended. It should be
treated with care to avoid postoperative bleeding or
hematoma formation. Incomplete excision of hibernoma
has been reported to result in regrowth of the tumor.

4. Conclusion

A reliable preoperative diagnosis of hibernoma can
be made based on the combination of clinical findings and
cytological features provided the reporting cytopathologist
is aware of the differential diagnosis.

Conflict of interest: There is no conflict of interest.

References

[3]. Cipriano CA, Gray RRL, Fernandez JJ. Hibernomas of the upper extremity: a case report and literature


