Hibernoma of the Eyelid

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Sir,

A hibernoma is a rare tumor that originates from the brown adipose tissue.\(^1\) This tumor is benign, with no known potential for malignant transformation.\(^1\) Hibernomas are highly metabolically active, as evidenced by their hypervascularity and increased uptake of fluorine-18 fluorodeoxyglucose on positron emission tomography (PET).\(^1,2\) The lesion is diagnosed primarily through biopsy.\(^1,2\) However, imaging characteristics of hibernomas on ultrasound, computed tomography, magnetic resonance imaging, and PET scanning have been characterized.\(^1\) The treatment can be accomplished through complete or incomplete surgical excision.\(^1,3\) However, incomplete surgical excision can leave a potential for recurrence.\(^1\)

A 50-year-old male presented to clinic for an evaluation of a 3.5 mm pigmented subcutaneous nodule on left upper eyelid near inner canthus [Figure 1]. This mass was gradually increasing in size over the last year. The patient denied any bleeding, discharge, tearing, pain, or change in visual acuity related to the mass. An elliptical incision around the lesion was performed and submitted for pathology. On multiple sections, a 2.5 mm well-circumscribed hamartoma with multivacluolated brown fat cells and abundant granular eosinophilic cytoplasm were noted [Figure 2]. The staining for vimentin was positive as well [Figure 3]. However, the lesion was nonreactive for S100 and Melan A (Mart 1).

Hibernomas previously have been found commonly in the thigh, shoulder, back, neck, chest, and arm.\(^4\) These are regions of the body where normal brown adipose tissue is often present. However, as far as we are aware, a hibernoma has never been found in the eyelid. There are multiple etiologies for why a hibernoma would form in the eyelid. One possible etiology is related to cytogenetics, as there is a recorded association between hibernomas and rearrangements in the 11q13 and 11q21 chromosomal regions.\(^4,5\) Of note, the brown adipose tissue is commonly present in infants, where it plays an important role in thermogenic stability. However, there is no known established role that brown fat would have in adults.

There are four histologic variants of hibernomas as follows: typical (82%), myxoid (9%), lipoma-like (7%), and spindle (2%).\(^1\) Our case describes a lipoma-like hibernoma. The changes diagnostic of lipoma-like hibernomas include the presence of brown fat cells and the complete lack of atypia.\(^3\) Lipoma-like hibernomas should be differentiated histologically from atypical lipomas and liposarcomas.\(^4\) Prior descriptions of lipoma-like hibernomas commonly

Figure 1: Nodular lesion on eyelid
Univacuolated brown fat cells from lipoma-like hibernomas may be difficult to differentiate from the atypical lipoblasts found in atypical lipomas and liposarcomas. These changes may have contributed to the misdiagnosis of other lipoma-like hibernomas. In addition, lipoma-like hibernomas with the less-mature multivacuolated brown fat cells, similar to the present case, may have been specifically misinterpreted as liposarcomas.

In conclusion, this is the first reported case of a hibernoma on the eyelid. Lipoma-like hibernomas should be carefully differentiated from liposarcomas. As seen in this case, this lipoma-like hibernoma with multivacuolated brown fat cells should be carefully distinguished from the atypical lipoblasts found in liposarcomas. Accurate diagnosis of this lesion on dermatopathological analysis is critical for the proper management of this patient.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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