Rare Presentation of a Postauricular Hibernoma with Literature Review

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Abstract

Objective: Hibernomas are rare benign tumors derived from brown adipose tissue that can be found almost anywhere in the body. These slow-growing lesions cause pain due to pressure and mass effect. Approximately 1% of the population has some variety of fatty tumor. Of these patients, about 1% have neck hibernomas. This unusual presentation adds to the differential diagnosis when considering neck masses, as its location can confound pathologists as well as otolaryngologists. Study Design: Case report and literature search. Results: Pathology demonstrated hibernoma on standard H&E stain

Case Presentation:

A 42 year old man presented to our tertiary care otolaryngology clinic with a 2 year history of noticing a left postauricular mass that had increased in size and began causing pain. On examination there was a 2x2cm nontender left postauricular/occipital mass. A complete head and neck examination including fiberoptic laryngoscopy was performed to help exclude any other lesions of the head and neck, which was normal. The patient underwent excision of the mentioned lesion with resolution of pain and no residual mass effect.

Results:

Pathology demonstrated two types of cells without atypia on standard H&E staining: 1. large multivacuolated cells with scanty granular eosinophilic cytoplasm and eccentric nuclei (solid arrow). 2. Univacuolated cells, with peripheral nuclei (dotted arrow). (Figures A-C). These findings are consistent with hibernoma.

Discussion:

Hibernoma’s are rare benign tumors that can occur almost anywhere on the body, and rarely occur in the head and neck. Brown adipose tissue is believed to have a role in thermoregulation and is first recognizable in human fetuses at the 21st week of gestation. Hibernomas usually occur between the ages of 20 and 40 and have a slight female prevalence. They grow slowly and usually present with painless enlargement, but discomfort due to mass effect is not uncommon. Symptoms related to the compression of adjacent structures rarely develop. Most hibernomas occur in sites where brown fat persists beyond fetal life (usually in the interscapular region, thigh, abdomen, and extremities), but they also occur in sites where brown fat is usually absent. Unusual sites that have been reported include the paraglottic larynx and pericardium. Pathologically they contain multiple small droplets and more mitochondria than white fat cells. Typical CT findings in the work-up of this entity demonstrates a well-defined hypodense mass with septations. MRI scan typically demonstrates intermediate T1 and bright T2 signal and also demonstrates the characteristic marked contrast enhancement. They have been reported to have false positives during Tc-99m scans during sestamibi scan in the work-up of parathyroid disease. Given that these tumors are seen on multiple imaging modalities, including those mentioned and PET scan, these tumors can potentially lead to false positives given their metabolic activity. Histologically hibernomas are lobulated lesions comprised of mature adipocytes and cells characterized by a small, central nuclei and a finely vacuolated cytoplasm compared to the standard lipoma which is composed of mature fat cells showing only slight variations in size and shape with nuclei that are fairly uniform.

Conclusion:

Hibernoma’s are rare tumors that can occur almost anywhere on the body, and rarely occur in the head and neck. Although benign, these tumors can cause discomfort to warrant surgical excision. In review of the literature, these are rare, and present challenges in histologic diagnosis as well as in imaging given their metabolic activity. The differential diagnosis of lipoma, liposarcoma, granular cell tumor, chondroid lipoma are discussed in detail in regard to pathologic and histochemical staining. Clinicians should be aware of these as part of the differential diagnosis, despite their rare presentation in the head and neck.

Bibliography: