International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Hibernoma of Axilla - A Rare Adipocytic Tumor - A Case Report

Dr. Madhumita. D. Kurdukar[1], Dr. Snehal. H. Anantwar[2]

[1]Department of Pathology, Dr. V. M. Govt. Medical College, Solapur

[2]Department of Pathology, Dr. V. M. Govt. Medical College, Solapur
Corresponding Author Email id: *anantwar. snehal433[at]gmail.com*

Abstract: ***Background: Hibernoma is a benign adipocytic tumor arising from vestige of brown fat occurring at all ages. It doesn't have malignant potential. Case Report: A female of 37 years presented with swelling in right axilla. USG showed hypoechoic lesion in subcutaneous plane. FNAC followed by excision of mass was done. Histopathology showed circumscribed tumor arranged in lobules separated by fibrovascular septa. Within the lobules were seen round to polygonal cells having multivacuolation and eosinophilic granular cytoplasm, with centrally placed bland nucleus. Diagnosis of hibernoma was formulated. Conclusion: Hibernoma must be differentiated from atypical lipomatous tumor (Liposarcoma) as multivacuolated cytoplasm is a feature in both the pathologies. It is of paramount importance for strategic management.***

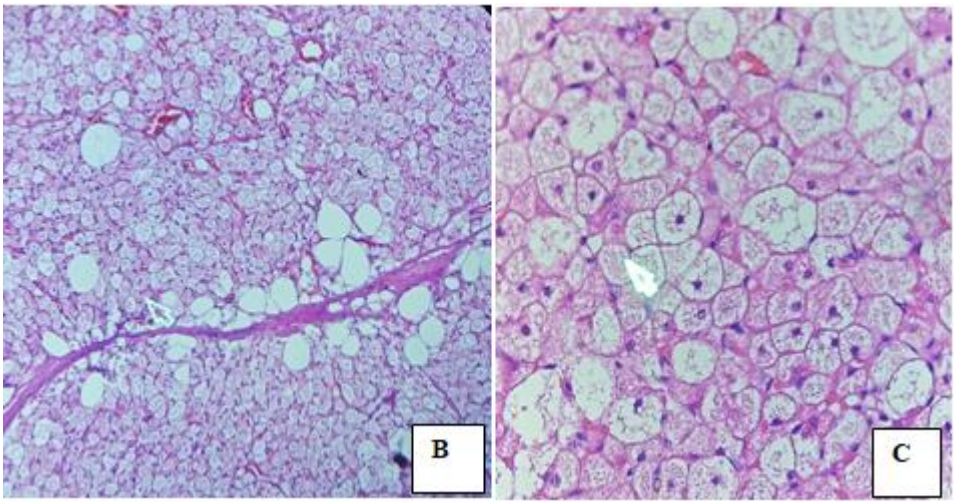
Keywords: Brown fat, Adipocytic tumor, Hibernoma.

1. Case Report

A middle aged lady of 37 years came with lump at posterior border of right axilla since three months. The lump was progressed gradually to attain a size of 4 x 5cm. Neither there were similar swellings on other parts of body nor there was past history of similar swellings. Lady had no history of any medical disorder. Systemic examination was within normal limits. Local examination of lump displayed a mobile, non tender, soft to firm lump of size 4 x5cm at posterior border of right axilla causing restriction of movements of right hand. Baseline laboratory investigations viz. CBC, Na, K, plasma glucose, LFT and KFT were within normal limits. HbSAg, HCV, HIV were negative. USG showed large hypoechoic lesion of size 7 x 4 cm in subcutaneous and intramuscular plane of right axilla which didn't show any vascularity on color doppler. The diagnosis of lipoma was made. FNAC tried twice which showed variable sized fatty spaces on hemorrhagic background. Considering the clinical history, USG findings and cytomorphology possibility of lipoma was susggested. Patient was planned for total excision of lump and excised specimen was sent for examination. Specimen consisted of single, irregular, soft to firm mass of size 9 x 6 x 3 cm which appeared as round mass with tail like extension. Round part measured 6 cm in diameter and tail like extension measured 4 x 3 x2cm. Cut surface was brownish yellow. Hemorrhage or necrosis was consistently absent.

A) Gross photograph of circumscribed, vaguely lobular brown to yellow masses with soft to firm consistency.

Microscopy revealed circumscribed tumor arranged in lobules separated by fibrovascular septa. Within the lobules were seen round to polygonal brown fat cells characterized by multivacuolated and eosinophilic granular cytoplasm, centrally placed bland nucleus with prominent nucleolus. Admixed with it were seen mature univacuolated white fat cells. Few capillaries were present within the septa. Cellular atypia or hyperchromasia was consistently absent. Diagnosis of hibernoma was formulated as morphology was in conformity with hibernoma.



B) Photomicrograph shows lobules of brown fat cells separated by thin fibrovascular septa with variable amount of mature adipocytes.
C) Photomicrograph shows eosinophilic, pale, polygonal to round, multivacuolated granular brown fat cells

2. Discussion

Lipomatous tumors are the commonest tumors encountered in clinical practice. Amongst it lipomas are the most common. Hibernoma are benign lipomatous tumors and thought to arise from brown fetal fat which resembles to fat of certain species of hibernating animals.1[-13]Brown or fetal fat disappears gradually and remnants sometimes persists focally in post natal life and can be a site for benign tumors called hibernoma.4[, 5, 6] In neonatal life brown fat is distributed on neck, axilla, subpleural region, intrathoracic region, mediastinum, periadrenal and perineural area. The location of tumor in present case corresponds to this distribution. However hibernoma can occur at other sites like trunk, thigh, extremities, head, scalp, buttock, popliteal fossa, intracranial, intraspinal and periureteric, perineural, periadrenal, intraosseous and para-aortic region.4[, 5, 8, 9]

Hibernoma is an extremely rare tumor and constitutes < 2% of all adipocytic tumors and 1 % of all benign adipocytic tumors.8[, 9]It was first described by Merkel in 1906 and named it as Pseudo-lipoma. Later Gery proposed the name as Hibernoma.5[, 6, 7, 8]Only few thousands of cases are published worldwide.3The peak incidence of hibernoma is in third decade and has female preponderance.1[-7, 10-12] Hibernoma are painless, slow growing, mobile subcutaneous tumor clinically akin to lipoma. Patient in the present study was in 3rd decade and presented clinically with slow growing mass of soft to firm consistency in axilla. Hibernoma doesn't undergo malignant transformation. No metastasis is on record. It doesn't recur if completely excised.1[-12] Imaging studies mimick soft tissue tumor. Plane radiograph shows radiolucent shadow. Ultrasonographically hibernoma is indistinguishable from all types of lipoma and sometimes liposarcoma.7 Present case was also interpretated as lipoma. CT, MRI gives valuable information but it was not done in the present case as clinically the behavior was benign and it didn't show any pressure symptoms. Macroscopically hibernomas are circumscribed, vaguely lobular brown to yellow masses with soft to firm consistency.1[-3, 11-12] Histopathology of hibernoma shows lobules of eosinophilic and pale, polygonal to round, multivacuolated granular brown fat cells with variable amount of mature adipocytes (white fat). The lobules are separated by thin fibro vascular septa. Cells do not show cytological atypia or mitosis. Stroma may show myxoid change. A typical hibernoma should constitute more than 70% of brown fat. Depending upon the quantum of brown fat cells hibernomas are classified into 4 categories. In typical hibernomabrown fat cells constitutes > 70 %, in mixed type even distribution of hibernoma and mature fat cells, in eosinophilic type hibernoma cells are between 50 to 70% and in lipoma like variant scattered hibernoma cells are seen.

Hibernoma with spindle cell component and myxoid stromal change are called as spindle cell and myxoid variant of hibernoma respectively.1[2]

Authors believe that this classification is needless and unproductive as all variants follow a benign course. However location and other demographic parameters vary from subtype to subtype. Typical and lipoma like variant commonly seen on thigh. Myxoid and spindle cell variant are uncommon in pediatric patients.1[2] Due to multivacuolated cells it mimic liposarcoma / lipoblastoma.

Hibernoma cells may be confused with lipoblasts posing problem to surgical pathologists. Lipoblast shows scalloped hyperchromatic, atypical nucleus. Atypia and hyperchromasia is extremely rare in hibernoma cells. Hibernoma cells have multivacuolated and granular cytoplasm and bland nucleus often with prominent nucleolus.1[2]

Hibernoma with myxoid change needs to be differentiated from myxoid liposarcoma. The characteristic arborising and curving delicate capillary network is a feature of myxoid liposarcoma. Fat necrosis also show multivacuolated cells. Fat necrosis is invariably accompanied by mixed inflammatory cell infiltrate. Present case did not face much difficulty in reaching the diagnosis as gross and microscopy was concordant with hibernoma. In dilemmas S-100 is useful and supportive marker as it is reactive in 85% of hibernoma cases. Cytogenic abnormalities like structural rearrangement of 11q[13-21] have been described in hibernoma. These abnormalities have also been detected in other

adipocytic tumors viz. lipoma and liposarcoma.1[2] So it appears to be of little help in differentiating from liposarcoma.

The treatment of hibernoma is complete resection. The recurrence and metastasis in completely excised tumors are not reported in literature.

3. Conclusion

Hibernoma is a rare benign adipocytic tumor affecting all ages and both sexes. It doesn't have malignant potential and no recurrence or metastasis is recorded in totally excised tumors. Histomorphology is very characteristic but at times problem in differentiating from low grade liposarcoma. Thorough sampling and special attention to identify lipoblast is must to differentiated from liposarcoma.

References

[1] Mills S. E. (2015). Sternbeg's Diagnostic Surgical Pathology. Wolters Kluwer.
[2] Goldblum J. R, McKenney J. K, Lamps L. W, Myres J. L. Rosai and Ackerman's Surgical Pathology. (2018). Elsevier.
[3] Fletcher C. D. M. (2013). Diagnostic Histopathology of Tumors. Elsevier.
[4] Honoki K, Morita K, Kasal T, Fujji H, Kido A, Tsukamoto S et al. (2010). Hibernoma of the axillary region: A rare benign adipocytic tumor. Rare tumors, 2 (1), e7
[5] Baskurt E, Padgett DM, Maysumoto JA. (2004). Multiple Hibernomas in a 1-Month Old Female Infant. AJNR Am J Neuroradiol, 25 (8), 1443-5.
[6] Sertkaya M, Emre A, Baykara M, Bahar AY, Kale IT. (2019). A rare tumor of the fatty tissue in the axillaHibernoma, Surgical Chronicles, 36-8.
[7] DeRosa DC, Lim RB, Lin Hurtubise K, Johnson EA. (2012). Symptomatic Hibernoma: A Rare soft tissue tumor. Hawaii J Med Public health, 71 (12), 342 – 5.
[8] Reichel T, Rueckl K, Fenwick A, Vogt N, Rudert M, Plumhoff P et al. (2019). Hibernoma of the Upper Extremity: Complete case of a rare but Benign soft tissue tumor. Case Rep Orthop, 21: 6840693
[9] Patil SD, Sheik AR, Tewari V, Mutreja D. (2019). Hibernoma: A missed diagnosis. Indian J Pathol Microbiol, 62 (3), 461-3.
[10] Ruiz AR, Saussez S, Demaesschalck T, Lechien JR. (2017). Hibernoma: a rare case of adipocytic tumor in head and neck. BMC Ear Nose and Throat Disord, 17 (13), 1 – 4.
[11] Lee JC, Gupta A, Saifuddin A, Flanagan A, Skinner JA, Briggs TW et al. (2006). Hibernoma: MRI features in eight consecutive cases. ClinRadiol, 61 (12), 1029-34
[12] Furlong MA, Fanburg – Smith JC, Miettinem M. (2001). The morphologic spectrum of hibernoma: a clinicopathologic study of 170 cases. Am j Surg Pathol, 25 (6), 809-14.
[13] Cannon B, Nedergaard J. (2004). Brown Adipose tissue: Function and physiological significance, Physiol Rev, 84: 277-359.