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Post Auricular Dermatofibroma: Radiological Case Report with Histological Correlation

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ABSTRACT

Benign fibrous histiocytoma is a fibrohistiocytic tumor arising in the skin or the deeper soft tissues. It is one of the most common benign soft tissue tumors of the skin and predominantly affects young adults. We present a case of 50yr old female who presented with post auricular swelling from 5 months in Otorhinolaryngology department and was referred to the radiodiagnosis department, for further imaging. Ultrasound and contrast enhanced computed tomography (CECT) was done as primary modality of investigation and then patient went for surgical excision of lesion which on histology suggest dermatofibroma.

INTRODUCTION

Benign fibrous histiocytoma represents a fibrohistiocytic neoplasm originating within the cutaneous or subcutaneous tissues. This tumor is among the prevalent non-malignant soft tissue neoplasms impacting the skin, with a higher incidence in young adults. The tumor exhibits a diverse range of histological patterns, leading to its identification under various nomenclatures, such as dermatofibroma, sclerosing hemangioma, nodular subepidermal fibrosis, fibrous xanthoma, and histiocytoma cutis.[1] The limbs are the most commonly affected regions, with a higher prevalence in older women compared to men.[2]

Clinically, it manifests as a slow-growing, small, brown, dome-shaped papule, usually developing over several months. After a period of growth, it tends to stabilize and can even undergo spontaneous regression over the years.[3] The histologic spectrum of this tumor is broad, encompassing, but not limited to, variants such as granular cell dermatofibroma, clear cell dermatofibroma, palisading cutaneous fibrous histiocytoma, aneurysmal, and cellular forms.

Dermatofibroma occurrence on the face is uncommon and is typically more aggressive and challenging to manage. It can frequently be mistaken for other conditions such as atypical basal cell carcinoma, adnexal tumors, leiomyoma, or cutaneous lymphoma due to its firm, poorly delineated presentation.[4] The current case presents a

histologically diagnosed benign fibrous histiocytoma, accompanied by radiological findings, allowing for a comprehensive correlation that facilitates an accurate diagnosis.

CASE REPORT

This report details the case of a 50-year-old female with a five-month history of a painless, gradually enlarging postauricular swelling. (Figure 1) The patient was initially assessed by the Otorhinolaryngology department and subsequently referred to the radiology department at Maharani Laxmi Bai Medical College in Jhansi, India, for an advanced diagnostic work-up. The lesion displayed a reddish-blue discoloration of the overlying skin without any other notable swelling history or previous similar complaints. Laboratory tests returned normal results.

An ultrasound (USG) was the first imaging step taken, followed by a contrast-enhanced computed tomography (CT) using a 16-slice Philips scanner with multiplanar reconstruction (MPR) and iohexol as the contrast medium. The USG revealed a well-circumscribed, lobulated, hypoechoic solid mass located in the subcutaneous layer of the left posterior auricular area, affecting the skin above. The lesion demonstrated significant internal vascularity on color Doppler images.(Figure 2) The non-contrast CT scan showed a lobulated lesion with soft tissue density and attenuation similar to the surrounding muscle in the same location. There was no evidence of fat density or calcification within the lesion. After contrast administration, the lesion exhibited uniform enhancement without any necrotic areas. The underlying muscle and bone structures were unremarkable, with no signs of regional lymph node involvement. Imaging findings led to a provisional diagnosis of a benign soft tissue mass, most likely a deep-seated benign fibrous histiocytoma or dermatofibroma.(Figure 3)

Surgical excision of the mass was planned under general anesthesia, followed by an excisional biopsy. The excised specimen was a greyish-white, nodular, firm mass measuring 6.5 x 3.3 x 2 cm, with an overlying attached section of skin. The cut surface of the specimen was white. Histological examination revealed a thinned epidermis, while the dermis contained a spindle cell tumor organized in a storiform pattern, with some intersecting fascicles. Adjacent areas displayed hyalinization and collagenesis, which are features consistent with a dermatofibroma. (Figure 4)

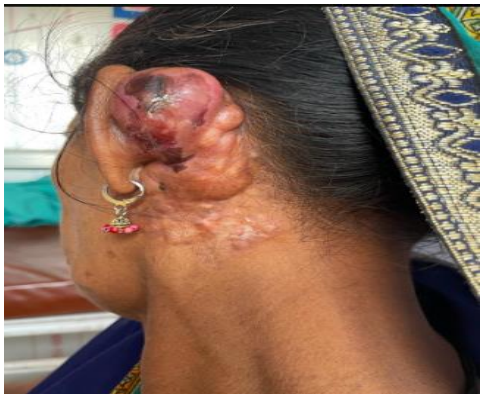

Figure 1: 1-50 yr old female with multilobulated post auricular swelling with reddish purple dislocuration of overlying skin.

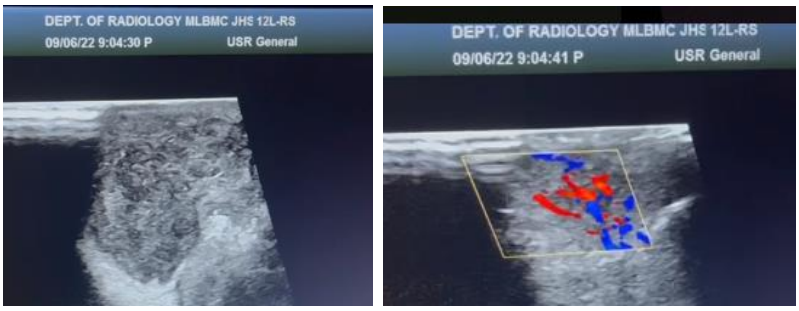

Figure 2: Gray scale and color Doppler USG shows a well defined lobulated hypoechoic to heteroechoic solid lesion in subcutaneous plane in left posterior auricular region with significant internal vascularity.

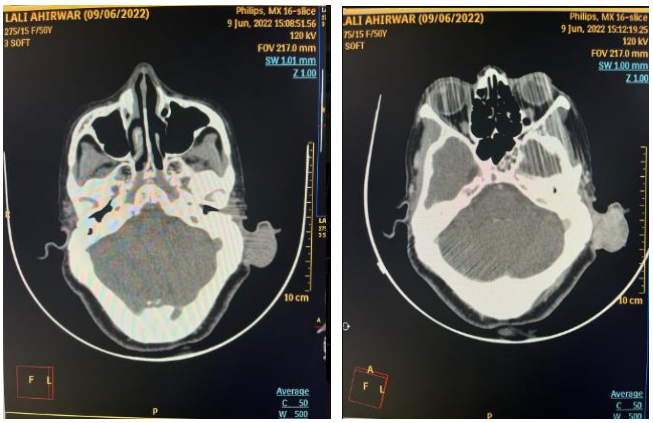

Figure 3: Pre and post contrast axial CT scan images shows a lobulated soft tissue density lesion with attenuation similar to adjacent muscle noted in subcutaneous plane in left posterior auricular region with involvement of overlying skin with significant post contrast enhancement.

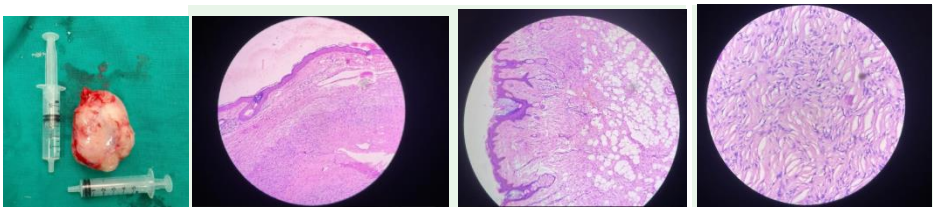

Figure 4: On gross image the specimen is greyish white nodular firm mass with attached skin measuring 6.5x3.3x2cm. On cut surface it is white in color. On microscopy section shows thinned out epidermis. Dermis shows tumor comprising of spindle cell arranged in storiform pattern along with few intersecting fascicles and adjoining areas shows hyalinization and collagenesis.

DISCUSSION

Benign fibrous histiocytoma is recognized as one of the most common benign skin tumors, exhibiting a low recurrence rate of 3% to 5%.[5] Dermatofibromas are usually asymptomatic and painless and may arise following minor trauma or insect bites, most frequently on the lower extremities.

In the presented case, the patient exhibited postauricular swelling, an atypical site for dermatofibroma. Ultrasound (USG) and computed tomography (CT) imaging effectively delineated the lesion's nature and extent. The primary

treatment was surgical resection, complemented by excisional biopsy. Microscopic examination revealed a thinned epidermis and a dermis populated by spindle cells arranged in a characteristic storiform pattern, indicative of dermatofibroma. Mentzel et al. in 2001 reported a substantial dermatofibroma series, with only 34 cases involving the facial area, specifically the forehead, cheek, eyebrow, ear, and nose, with a majority showing aggressive behavior and infiltration into soft tissue and muscle, though only three cases were confined to the dermis. The histology frequently showed actin-positive spindle-shaped myofibroblasts and cellular fascicles, beyond the typical storiform pattern.[6]

Surgical excision with clear margins is the treatment of choice for reducing recurrence risk. Alternative methods such as superficial shaving or cryosurgery, while available, have a greater recurrence risk and may not yield optimal cosmetic results.[7] Intralesional steroid injections offer a variable success rate and carry a risk of contributing to osteoporosis.[9] Carbon dioxide laser surgery has also been employed, especially for multiple facial dermatofibromas, yet wide excision remains the gold standard due to its efficacy in preventing recurrence.[7]

Estela et al. in 2013 reported 22 facial dermatofibroma cases over two decades, with only three showing deep tissue involvement and no worrisome features observed. The advised treatment was minimal excision with no recurrence noted.[10]

Dermatofibroma and the more aggressive dermatofibrosarcoma protuberans should be included in the differential diagnosis for patients presenting with postauricular swellings, despite their rarity. Dermatofibrosarcoma protuberans, can aggressively invade deep structures and exhibit a higher mitotic rate. Immunohistochemistry reveals positive CD34 staining and negative factor XIIIa, serving as useful distinguishing markers.

CONCLUSION

Dermatofibroma ought to be maintained as a diagnostic consideration for patients who present with swellings in the head and neck area, along with dermatofibrosarcoma protuberans, its more aggressive counterpart. Ultrasound and Contrast-Enhanced Computed Tomography (CECT) can facilitate an accurate radiological diagnosis.

REFERENCES

1. Calonje E, Mentzel T, Fletcher CDM. Cellular benign fibrous histiocytoma: Clinicopathologic analysis of 74 cases of a distinctive variant of cutaneous fibrous histiocytoma with frequent recurrence. Am J Surg Pathol. 1994;18(7):668-76.
2. Alves J, Matos DM, Barreiros HF, Bártolo EA. Variants of dermatofibroma - a histopathological study. An Bras Dermatol. 2014;89(3):472-477.
3. Wolff K, Johnson RA, Saavedra AP. Fitzpatrick's clinical dermatology , 7th edn New York: McGraw-Hill Education; 2013.
4. Mentzel T, Kutzner H, Rütten A, Hügel H. Benign fibrous histiocytoma (dermatofibroma) of the face clinicopathologic and immunohistochemical study of 34 cases associated with an aggressive clinical course. Am J Dermatopathol. 2001;23(5):419-426.
5. Ismail Y, Watson S. Benign fibrous histiocytoma (dermatofi-broma) of the face: A rare entity requiring aggressivesurgical management. J Plast Reconstr Aesthet Surg. 2010;63:e647.

6. Mentzel T, Kutzner H, Rütten A, Hügel H. Benign fibrous histiocytoma (dermatofibroma) of the face clinicopathologic and immunohistochemical study of 34 cases associated with an aggressive clinical course. Am J Dermatopathol. 2001;23(5):419-426.
7. Han TY, Chang HS, Lee JH, Lee WM, Son SJ. A clinical and histopathological study of 122 cases of dermatofibroma (benign fibrous histiocytoma). Ann Dermatol. 2011;23(2):185-192.
8. Parish LC, Yazdanian S, Lambert WC, Lambert PC. Dermatofibroma: a curious tumor. Skinmed. 2012;10(5):268-270.
9. Jain A, Gupta P, Chaurasia R, Singh M, Pandey S. Observational Study to Evaluate the Effect of Epidural Steroid Injection on Bone Mineral Density and Bone Turnover Markers. Pain Physician. 2020;23(5):E517-E524.
10. J R Estela, M T Rico, A Pérez, B Unamuno, J Garcías, L Cubells, et al. Dermatofibroma of the face: a clinicopathologic study of 20 cases. Actas Dermosifiliogr. 2014;105(2):172-177.