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Silent Shadows: An Unusual Case of Scalp Metastasis.

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ABSTRACT

Background: Breast carcinoma is the second leading cause of cancer death in women. The metastasis to distant sites is a notable feature of breast carcinoma but cutaneous involvement of scalp is extremely rare with the incidence of <1%. We herein present a case of this rarer entity of breast carcinoma presenting with scalp swelling. The present case highlights the pivotal role of cytological examination in the rapid and accurate diagnosis of metastatic diseases. Underscores the paramount of considering metastatic disease in patients with history of breast carcinoma presenting with new scalp lesions, emphasizing the need for heightened clinical vigilance and prompt investigative procedures.

Keywords- Breast carcinoma, scalp metastasis, cytology

INTRODUCTION

Breast carcinoma is the second leading cause of cancer deaths in women. The metastasis to distant sites is a notable feature of breast carcinoma but cutaneous involvement of scalp is extremely rare with the incidence of <1%.[1-3]We herein present a case of this rarer entity of metastatic breast carcinoma presenting as scalp swelling.

CASE DETAILS

A 65 years old female presented with a scalp swelling to the surgery department. She noticed the swelling since 20 days, gradually increasing to the present size of 2x2cm.(Fig 1)

Fig.1-Physical examination showed scalp swelling of size 2x2 cms

Fine needle aspiration cytology was advised. Cytological examination showed pleomorphic malignant cells arranged in ductular pattern. These cells were large round to oval with irregular hyperchromatic nuclei and moderate amount of cytoplasm. Background showed necrosis and hemorrhage.(Fig 2)

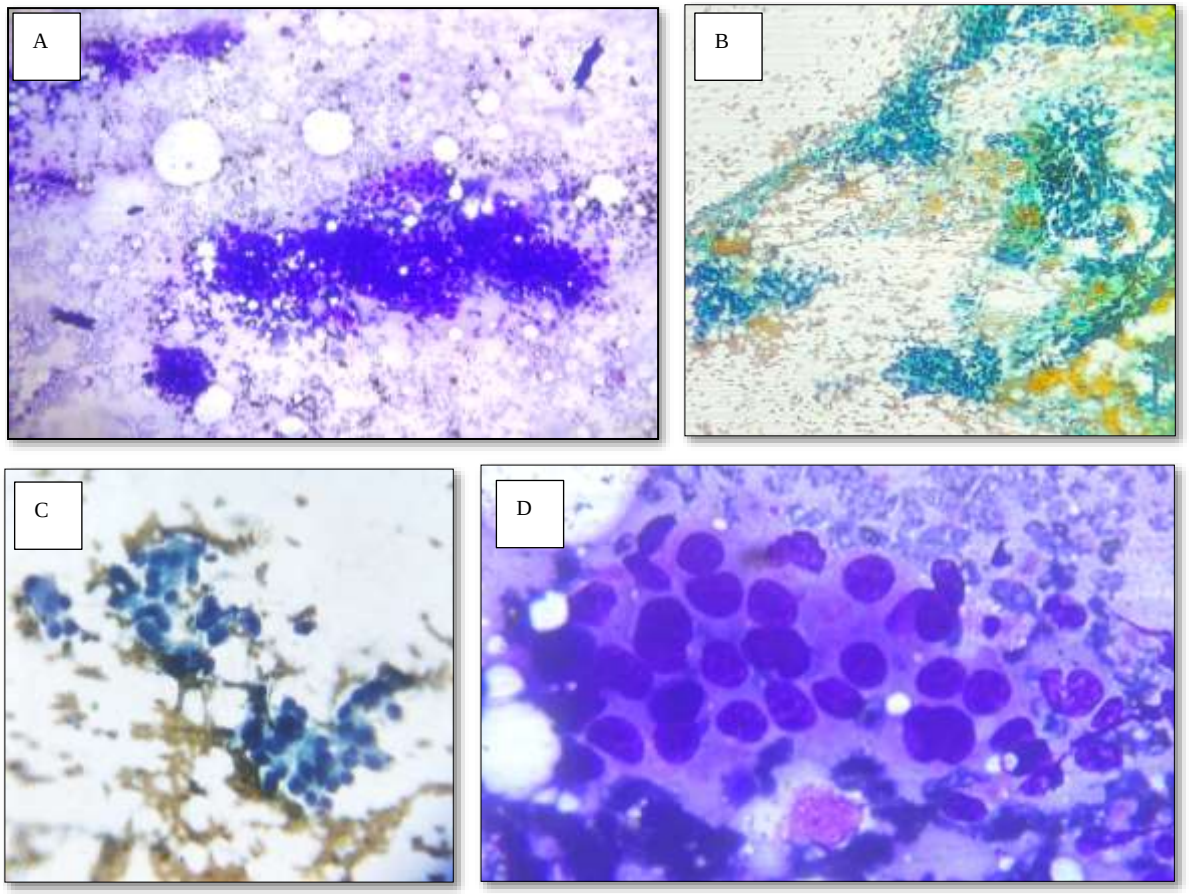

Fig.2A,D- Figure showing Giemsa stained dyscohesive sheets on 10x and malignant ductal epithelial cells on 40x.

Fig.2 B,C- Figure showing Pap stained malignant ductal epithelial cells on 10x and 40x.

Diagnosis of malignant tumor was considered and on clinical re-evaluation, she revealed past history of Infiltrating ductal carcinoma of breast a year back that was managed with surgery and chemotherapy.(Fig 3) X-ray was normal and showed no lytic lesions. Hence, the final cytological diagnosis of Metastatic deposits of breast carcinoma to scalp was made. Further biopsy and histopathological examination were advised. But patient was lost to follow up.

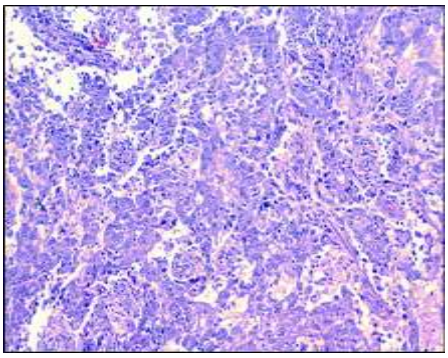

Fig.3 Histopathology showing infiltrating ductal carcinoma of breast (H and E-10x)- Post MRM specimen image done a year back

DISCUSSION

Metastasis, particularly to the scalp, typically presents as nodules or masses that may be mistaken for primary skin conditions, such as cysts or benign tumors.[4,5]The pathophysiology behind scalp metastasis involves hematogenous spread, where cancer cells travel through the bloodstream and seed distant tissues. The rich vascular supply of the scalp may make it a potential site for metastasis. [1-5]

Literature search reveals that the scalp represents only a small fraction of cutaneous metastatic sites in breast cancer, but when it occurs, it signifies advanced disease with a poor prognosis. [1-3]Scalp metastases often indicate an aggressive course of disease and may be associated with other visceral metastases. These patients usually have a history of breast cancer with known metastasis to other organs, though in some cases, scalp metastasis may be the first sign of distant disease as in our case. [2,3]

Cytological examination in the rapid and accurate diagnosis of metastatic diseases. Main differential diagnosis of cutaneous metastasis is primary skin adnexal tumor. Since the prognosis of both of these entities differs largely hence, reaching a definitive diagnosis becomes paramount. Cytology clinches the diagnosis but biopsy with histopathological examination aids in diagnosis. There is no single unique marker, that has been established in the differentiation of breast carcinoma and cutaneous adnexal tumors hence a panel of immunohistochemistry markers should be used like estrogen receptor, progesterone receptor , human epidermal growth factor receptor 2, GATA binding protein 3, cytokeratin-7, P63, C-KIT (CD117) and mammoglobin are the markers that may helpful to reach the definitive diagnosis.[4-7] The present case was diagnosed as Metastatic deposit of breast carcinoma to scalp depending on the cytological features and prior history of breast carcinoma, but patient was lost for the biopsy and histopathological study.

The appearance of scalp metastasis should prompt thorough evaluation for systemic disease, as it often correlates with widespread metastasis.[2-5]Studies indicate that many individuals with inflammatory breast cancer and triple-negative breast cancer have a recurrence rate of 40–50%. Current guidelines recommend annual mammography after treatment, but there should be individualized extended surveillance to monitor for late recurrence. [3,4]

Management of scalp metastasis in breast carcinoma typically involves systemic therapy, such as chemotherapy, hormonal therapy or targeted therapy, depending on the receptor status of the tumor. Local radiation can be considered for ulcerated scalp lesions. [5] The index case was lost to follow up.

CONCLUSION

The present case highlights the importance of cytological examination in the rapid and accurate diagnosis of metastatic diseases. In rare instances, breast carcinoma can metastasize to unexpected region, such as scalp. Multidisciplinary collaboration and awareness of such rare occurrences are crucial for timely and effective management. Metastatic disease in patients with history of breast carcinoma presenting with new scalp lesions, emphasizes the need for heightened vigilance and prompt investigative procedures for early detection and better management.

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