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Case Report

Primary Liposarcoma of Breast Masquerading as Carcinoma on Cytology Smears

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A B S T R A C T

Primary liposarcoma of the breast, a rare tumour, can be missed on cytology at times. However, the presence of certain morphological cues can point towards the diagnosis. Our report presents an unusual case of a 70 year-old female presented with a painful lump in her left breast for 2 years in the Surgery Outpatient Department. There was no significant past, personal, family history or history of any other medical illness. On examination, the lump was in the upper outer quadrant of the left breast measuring 2 cm in diameter, firm in consistency, mobile and tender. The case was finally concluded to be stromal sarcoma of the left breast, possibly liposarcoma and immunohistochemistry of S 100 was advised. Unfortunately, in the present case, the immunohistochemistry was not done. We present the cytological, histopathological diagnosis.

Keywords: Primary Breast Liposarcoma, Breast Cancer, Rare Malignancies

Introduction

Primary sarcomas of the breast are rare comprising less than 1% of all breast malignancies.[1] These tumours are a diagnostic challenge on cytology due to close morphological mimics like phyllodes tumours, metaplastic carcinomas, and malignant melanomas. We encountered one such case in cytology that posed a diagnostic challenge.

Case History

A 70-year-old female presented with a painful lump in her left breast for 2 years in the Surgery Outpatient Department. There was no significant past, personal, family history or history of any other medical illness. On examination, the lump was in the upper outer quadrant of the left breast measuring 2 cm in diameter, firm in consistency, mobile and tender. The nipple-areola complex was normal. The contralateral breast was normal on palpation. Fine needle aspiration was done which revealed smears of low cellularity showing discohesive highly pleomorphic cells. Cells were large with a high N:C ratio, severe anisonucleosis and condensed chromatin. Occasional fragments of spindle-shaped cells embedded in fibrotic stroma and a few lipoblasts (Figure 1) were also noted. The cytological diagnosis of poorly differentiated carcinoma was rendered. The mastectomy specimen was also received for histopathological evaluation. On gross examination, the left mastectomy specimen (Figure 2) measured 20 x 12.5 x 5 cm with a skin flap measuring 16 x 6.5 cm. A firm mass measuring 2 cm in diameter was seen in the upper outer quadrant of the left breast. The cut section of the tumour was greyish-white with areas of haemorrhage. The axillary tail measured 7 x 3 x 2 cm. Nine lymph nodes were

identified in the axillary tail. The nipple-areola complex was unremarkable. The microscopy revealed normal looking skin showing stratified squamous epithelium with slightly pleomorphic cells which were oval to spindle in shape dispersed singly underneath the epithelium. These atypical cells (Figure 3) showed pleomorphic nuclei with irregular nuclear membrane, coarse chromatin, prominent nucleoli and a moderate amount of vacuolated cytoplasm. Few binucleate and multinucleate cells were also seen. Lipoblasts were also seen along with some areas of necrosis. Sections from the nipple were normal. Sections from all the resection margins were free from tumours. Sections from all nine lymph nodes showed features of sinus histiocytosis. The case was finally concluded to be stromal sarcoma of the left breast, possibly liposarcoma and immunohistochemistry of S 100 was advised. Unfortunately, in the present case, the immunohistochemistry was not done.

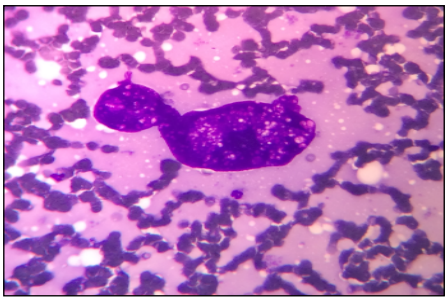

Figure 1.Cytology Smears (400x) Showing Highly Pleomorphic Cells and Vacuolated Cytoplasm

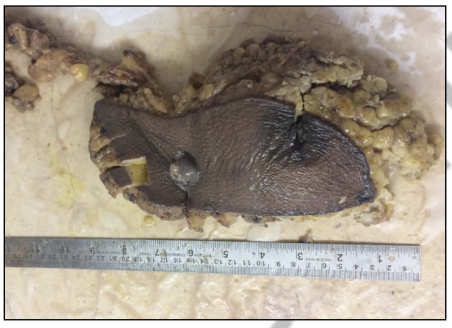

Figure 2.Modified Radical Mastectomy with Attached Axillary Tail and unremarkable Nipple Areola Complex with the Cut Surface of Axillary Tail Showing a Solid White Growth

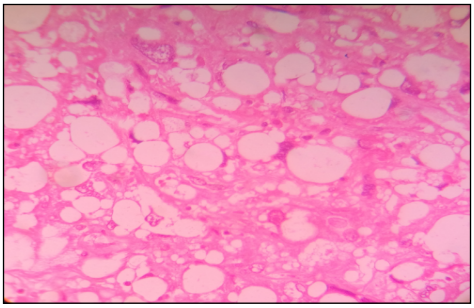

Figure 3.Pleomorphic Lipoblasts with Vacuolated Cytoplasm

Discussion

Primary breast liposarcoma constitutes 0.3% of the breast sarcomas. In 1862, the first case of breast sarcomas was reported by Neuman. The largest case series comprising 20 cases of primary breast liposarcomas was published in 1986 by Austin and Dupruee.

These tumours exclusively arise from the interlobular stroma of the breast and there is an absence of neoplastic epithelial component.

They present between 19 and 76 years of age as gradually progressive painful unilateral breast lumps.[24] These tumours pose a diagnostic challenge on fine needle aspiration cytology.

In the present case, the diagnosis of poorly differentiated carcinoma was rendered on cytopathology. It was only on histopathology that the characteristic lipoblasts were identified. As they follow a very aggressive clinical course,[5] they should not be missed and the presence of lipoblasts should clinch the diagnosis. .

Conclusion

Liposarcoma is a rare type of breast cancer. Despite its rarity, the differential diagnosis of any breast nodules should include it. The therapeutic plan is facilitated when a careful preoperative radiological and HP assessment makes a positive diagnosis. The dimension of the tumor, HP subtype, and clean surgical borders are important prognostic factors. Due to the small number of cases found in the literature, the best treatment choice and determination of prognosis are difficult to make; reporting any case is crucial. In the present case, the diagnosis of poorly differentiated carcinoma was rendered on cytopathology. It was only on histopathology that the characteristic lipoblasts were identified. As they follow a very aggressive clinical course,[5] they should not be missed and the presence of lipoblasts should clinch the diagnosis.

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Conflict of Interest: None

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