Primary Liposarcoma of The Breast: A Report of Five Cases

Hasna Salhi, Olfa Jaidane, Melek Bouhani, Jamel Ben Hassouna, Tarek Ben Dhieb, Monia Hechiche, Khaled Rahal

Oncologic Surgery Department, Salah Azaiez Institute, Tunis 1006, Tunisia

Corresponding Author: Hasna Salhi
hasna.salhi@yahoo.fr

ABSTRACT

Liposarcoma of the breast is among the rarest of malignant mammary tumors. It was first described by Neumann in 1862 and accounts for 0.3% of all breast sarcomas. We reviewed in this study 5 cases of primary liposarcoma of the breast treated between 1997 and 2014 in Salah Azaiez Institute. The purpose of this study is to highlight one of the rarest and interesting variants of breast sarcoma. The patients were four women and one man. The median age at diagnostic was 50 years for the women. The man was 80 years old. The median tumor size was 6.8 cm. All liposarcomas were unilateral. Four patients underwent total mastectomy, and only one had a conservative surgery. Histologically, four tumors were classified as pleomorphic liposarcoma and one as myxoid liposarcoma. None of the patients had axillary lymph node metastases. Four patients had adjuvant treatment involving local radiation therapy, one of them had chemotherapy. None of the patients had regional or distant metastases with a median follow-up of 56 months (range, 12 to 204 months) after surgery. An immunohistochemical study should be considered to avoid misdiagnosis. The mainstay of treatment in breast liposarcoma is surgical excision. Adjuvant chemotherapy and radiation should be considered in high-risk cases.

Keywords: liposarcoma, breast cancer, rare malignancies, breast sarcoma

1. INTRODUCTION

Sarcomas of the breast constitute less than 1% of all malignant breast tumors. Although liposarcoma is considered to be one of the most common soft tissue sarcomas, it is among the rarest tumors in the breast, having an incidence of 0.3% of all mammary sarcomas and approximately 0.003% of all breast tumors. Almost every previous reference to this entity in the medical literature is in the form of isolated case reports. Marshall and Austin (1) published the largest series which included 20 breast liposarcomas in 1986, where there were 13 cases of primary pure breast liposarcomas. In our study, five cases of primary pure liposarcoma, treated between 1997 and 2014 were reviewed retrospectively.

2. CASE STUDY

The patients were four women ranged in age from 35 to 57 (average: 50 years), and one 80-year-old man. All liposarcomas were unilateral, with 3 cases occurring in the left breast and 2 cases in the right breast. In most patients, the mass had been noticed for several months, ranging from 6 to 12 months (average, eight months). Axillary lymph nodes were clinically found in one case. The mass varied in diameter from 1.5 to 13.5 cm (median: 5.8 cm). At mammography, the lesions were scored BI-RADS 5 in four cases and BI-RADS 4 in one case (figure1).
Four patients underwent radical mastectomy, and one patient underwent conservative surgery. Histologically, four tumors were classified as pleomorphic liposarcoma and one as myxoid liposarcoma. The immunohistochemical exam was performed in only two cases and showed positive staining for PS100 and mdm2 antibodies, indicating lipomatous nature of the proliferating cell tumor. None of the patients had axillary lymph node metastases. Four patients had adjuvant treatment consisting of local radiation therapy, one of them had chemotherapy. None of the patients had regional or distant metastases with follow-up of 2 to 17 years after surgery.

3. DISCUSSION

The breast is among the rarest locations of liposarcoma. This malignancy may arise directly from mammary interlobular stromal tissue, or it can develop as a component of cystosarcoma phyllodes. Generally, breast liposarcomas are seen between the ages of 45 and 55. These tumors manifest as slowly growing, painful breast masses of variable duration. This is in contrast to the rapid growth seen in the setting of malignant phyllodes tumor. Breast liposarcoma is generally unilateral at presentation. Pectoral muscle invasion, skin changes, and nipple retraction are rarely seen. In our series, all the tumors were unilateral, with no signs of local extension. The typical gross appearance of these tumors shows a median size of 8 cm in greatest diameter; however, they may grow much larger, reaching up to 20 cm in diameter. These masses are generally well circumscribed or encapsulated. Up to one-third of the tumors show an irregular, infiltrated, or lobular pattern of growth. Liposarcomas that do not contain specific features on radiology are usually evaluated as fibroadenomas. The World Health Organization recognizes five categories of liposarcoma: (1) well-differentiated, (2) myxoid, (3) round cell, (4) pleomorphic, and (5) dedifferentiated. Their behavior and pattern of recurrence depend on their histological subtype.

The differential diagnosis of breast liposarcoma includes silicon granuloma, fat necrosis, malignant fibrous histiocytoma, and signet ring cell carcinoma. The recognition of typical lipoblasts that have scalloped, irregular, hyperchromatic nuclei with sharply defined intracytoplasmic vacuoles and that stain with S100 is the key feature in differentiating liposarcoma from others.

Austin and Dupree suggested that primary liposarcomas arising from cystosarcoma phyllodes behave similarly to primary breast liposarcoma, and so the distinction between the two entities may be of little clinical importance.

This tumor has a broad range of histological appearances, but no clinical or pathologic feature appears to be predictive of a more aggressive clinical course. Sarcomas which act differently from other malignant tumors of the breast spread as distant organ metastasis rather than lymphatic metastasis. Sites of metastasis include lungs, liver, bone and brain. When patients are diagnosed preoperatively, the possibility of distant organ metastasis must be investigated.

There is no established protocol for the treatment of liposarcomas of the breast. Histological grade and the degree of microscopic invasion influence the prognosis. Complete excision is essential even in low-grade liposarcomas, because of the possibility of dedifferentiation to more malignant forms.

Patients must be followed up for local recurrence and distant metastasis in the postoperative period. Factors which affect local recurrence are positive surgical borders and pleomorphic type liposarcomas.
4. CONCLUSION

Although liposarcomas are one of the more common sarcomas found in other tissues, they are among the rarest tumors in the breast. An immunohistochemical study should be considered to avoid misdiagnosis, especially in more pleomorphic tumors when an epithelial differentiation is not apparent and when the biopsy material is limited. Due to the little number of cases in the literature, the choice of treatment and determination of prognosis can be difficult. Surgery, ranging from total excision to mastectomy is still the mainstay of treatment. Since lymphatic dissemination does not occur, lymph node dissection seems to be unnecessary. Radiotherapy can be added to the treatment.

The dimension of the tumor, histological subtype, and clean surgical borders are important in the prognosis.

REFERENCES

6. Mentzel T, PeDeutour F. Myxoid liposarcoma. In: Fletcher CDM, Uni KK, Mertens F, ed. World Health Organization Classification of Tumors,