
Plasmacytoma of the Breast

Caren Greenstein, Natalie Adam*, Kristan Zimmermann and Dan Costin

White Plains Hospital, Montefiore Health System, 41 East Post Road, White Plains, NY

*Corresponding author: Natalie Adam, White Plains Hospital, Montefiore Health System, 41 East Post Road, White Plains, NY, USA. E-mail: natalieadam123@gmail.com

Received: May 10, 2023; **Accepted:** May 19, 2023; **Published:** June 25, 2023

Abstract

Plasmacytoma of the breast is rare. Imaging findings can be similar to those of breast cancer. In a patient with prior history of multiple myeloma, the possibility of extramedullary plasmacytoma should be considered in the differential diagnosis.

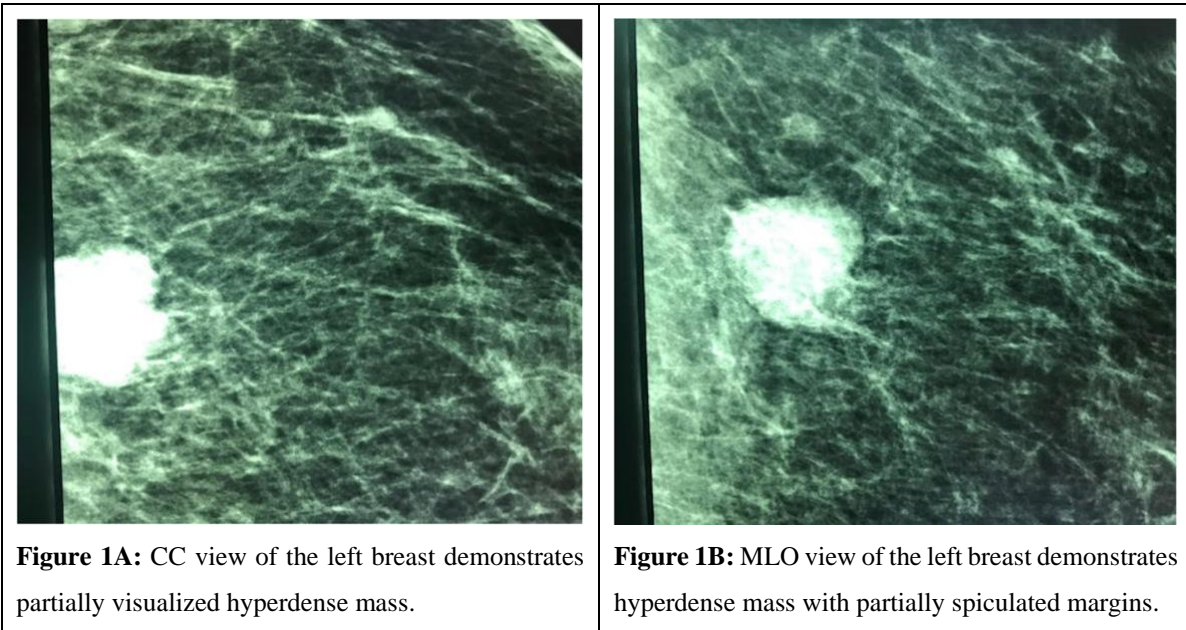
Keywords: Plasmacytoma of the breast; Mammography; Ultrasound

Introduction

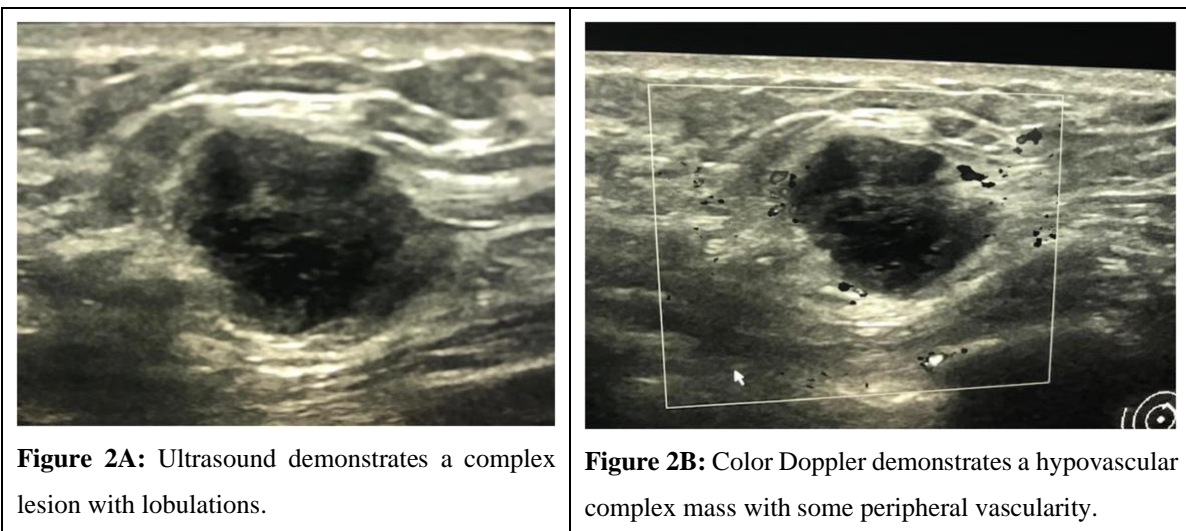
We present a case of extramedullary plasmacytoma in a patient with a prior history of multiple myeloma. Mammography demonstrated a mass with spiculation, and ultrasound demonstrated a complex solid mass. The imaging appearance in our case demonstrates considerable overlap of plasmacytoma of the breast with breast cancer and both possibilities need to be included in the differential diagnosis in patients with prior history of multiple myeloma.

Case Presentation

An octogenarian with last screening mammogram negative 10 months ago, now presented for diagnostic exam for a new palpable left breast lump. The patient had no personal history of breast cancer. Family history revealed that her mother had breast cancer at 72. The patient had a history of hematologic malignancy of multiple myeloma diagnosed 3 years prior which was successfully treated with complete remission, with completion of chemotherapy 8 months prior to presentation. However, one month prior to presentation the patient had a biochemical relapse which was treated with 3 cycles of bortezomib at 1.3mg/m² sq given on a weekly basis, given concurrently with dexamethasone at 20mg orally once a week. Unilateral left mammogram showed predominantly fatty breast tissue. There was a new mass measuring 1.9cm, in the far posterior left 3-4 o'clock position, only partially included on some images (Figure 1A). Its margins were circumscribed with some spiculation (Figure 1B).



No calcifications were seen. Ultrasound showed a complex mass with lobulated margins (Figure 2A). Color doppler showed it to be hypovascular (Figure 2B). A lymph node in the left axilla showed mild diffuse cortical thickening (4mm). Ultrasound core biopsy was recommended, which revealed plasmacytoma. PET Scan was performed for follow-up of abnormal blood chemistry. It showed a subcutaneous soft tissue nodule beneath the left breast measuring 1.8cm with SUV of 1.7, which was suspected to be an inflammatory lymph node. The following month she began treatment with daratumumab, pomalidomide and dexamethasone. Within 3 months of treatment, she again entered into a complete response.



Discussion

Monoclonal proliferation of plasma cells leads to multiple myeloma or, in the case of single site of involvement, plasmacytoma. Plasmacytoma can manifest as an osseous or an extramedullary lesion. Less than 100 cases of plasmacytoma have been described in the breast [1]. In the breast, they occur 85% of the time within the context of a multiple myeloma presentation and 15% of the time they occur as primary solitary plasmacytoma [2]. In the latter scenario the solitary lesion occurs in the absence of multiple myeloma [3]. When plasmacytoma occurs as part of the multiple myeloma spectrum it can be seen in active multiple myeloma [4]. Alternatively, plasmacytoma can occur as a sign of relapse of previously diagnosed multiple myeloma [5]. 83% of patients present with lumps [2]. On mammography, they are typically described as well-circumscribed ovoid or round masses [4-7]. Unlike primary breast plasmacytoma, the prognosis of extramedullary plasmacytoma with pre-existing multiple myeloma is poor [8].

Our case is unique in that spiculated margins were present. Previously reported ultrasound findings are more varied, however, increased vascularity is typical [4,5,7]. This differs from our case, which was hypovascular.

While the differential diagnosis for a mass in the breast is broad and includes infection, hematoma, benign and malignant fibroepithelial lesions, and primary breast cancer, in the setting of prior multiple myeloma plasmacytoma should be considered.

Conclusion

In patients with a history of multiple myeloma presenting with palpable lump and demonstrating imaging features compatible with breast cancer, the possibility of plasmacytoma should be considered. Spiculated margins, though not previously described, was seen in our case and should not deter one from including plasmacytoma in the differential diagnosis.

REFERENCES

1. Vong S, Navarro SM, Darrow M, et al. Extramedullary plasmacytoma of the breast in a patient with multiple myeloma. *J Radiol Case Rep.* 2020; 14: 14-23.
2. Surov A, Holzhausen HJ, Ruschke K, et al. Breast plasmacytoma. *Acta Radiol.* 2010; 51: 498-504.
3. Aagre S, Madabhavi I, Patel A, et al. Primary plurifocal extramedullary plasmacytoma of breast. *Breast J.* 2016; 22: 465-466.
4. Orguc S, Akin M, Aydogdu I, et al. Bilateral plasmacytoma of the breast. *Breast J.* 2018; 24: 210-211.
5. Urano M, Denewar FA, Okabe R, et al. Relapsed multiple myeloma manifesting as extramedullary plasmacytoma of the breast: Imaging findings. *Radiol Case Rep.* 2019; 14: 584-587.
6. Lee HS, Kim JY, Kang CS, et al. Imaging features of bilateral breast plasmacytoma as unusual initial presentation of multiple myeloma: case report and literature review. *Acta Radiol Short Rep.* 2014; 3.
7. Park YM. Imaging findings of plasmacytoma of both breasts as a preceding manifestation of multiple myeloma. *Case Rep Med.* 2016; 2016: 659.
8. Touzeau C, Moreau P. How I treat extramedullary myeloma. *Blood.* 2016; 127: 971-976.