



Cosmetic fat augmentation following breast reconstruction: sonographic appearance with cytopathologic correlation



Elizabeth Kagan Arleo*, Marwa Saleh, Mark H. Schwartz, Carolyn Sharyn Eisen

New York–Presbyterian Hospital, Weill Cornell Medical Center, 425 East 61st Street, New York, NY 10065

ARTICLE INFO

Article history:

Received 5 May 2014

Received in revised form 2 July 2014

Accepted 10 July 2014

Keywords:

Cosmetic fat augmentation

Fat necrosis

Mastectomy

Breast reconstruction

Ultrasound

ABSTRACT

This series presents the history and imaging of patients who had cosmetic fat augmentation following mastectomy and reconstruction. The cases provide the useful reminder that a complete surgical history is essential when assessing the imaging of a post-operative breast patient and that speaking directly with patients can be a critical step in putting together a complete clinical picture and adding value to their care.

© 2014 Elsevier Inc. All rights reserved.

1. Introduction/abstract

In this case series, we present the history and imaging of several patients who had cosmetic fat augmentation following mastectomy and reconstruction, followed by a discussion of the complications and key imaging findings of the procedure. Since, as Pasteur's dictum goes, "chance favors the prepared mind," we present these four cases together here so that others can prepare their minds to suggest the diagnosis if such a clinical scenario and imaging are encountered. The cases also provide the useful reminder that a complete surgical history is essential when assessing the imaging of a post-operative breast patient and that speaking directly with patients can be a critical step in putting together a complete clinical picture and adding value to their care.

2. Case 1

2.1. History

A 67-year-old G2P2 Caucasian female was referred to our Breast Imaging Division by her oncologist for further evaluation of a palpable lump in her left reconstructed breast. She had a personal history of stage 3a breast cancer in 1991 treated with bilateral mastectomies and saline implant reconstruction (sidedness of the cancer unknown, as this was at an outside institution), followed by chemotherapy and then tamoxifen for hormonal control. She achieved remission until

1994, when she relapsed with supraclavicular disease and underwent bone marrow transplant at an outside institution with good response. She was fine until the beginning of 2013, at which time she presented with a leak from her right saline implant. She was treated by a plastic surgeon who exchanged her saline implants for silicone ones and performed an autologous fat transfer procedure from her hip/buttock region to the superior aspect of her implants to minimize a contour deformity the patient complained about. In July 2013, 6 months later, the patient presented with two firm nodules near the superior aspect of her left implant and was referred for ultrasound.

2.2. Imaging findings

Ultrasound targeted to the patient's palpable area of concern at the superior aspect of her left implant was performed, demonstrating in the 12:00 to 1:00 axis, two ovoid circumscribed hypoechoic hypovascular nodules; the largest was 5 cm from the nipple measuring 0.8×0.6×0.4 cm (Fig. 1A), and the smaller was 8 cm from the nipple measuring 0.5 cm in maximal dimension. The radiologist interpreted the findings as having an indeterminate sonographic appearance and classified them as Breast Imaging–Reporting and Data System 4; ultrasound-guided sampling was recommended.

The patient underwent ultrasound-guided fine needle aspiration (FNA) of both nodules. The aspirate specimens were collected in CytoLyt (Hologic, Marlborough, MA) and one Papanicolaou-stained ThinPrep slide was prepared from each. The larger nodule demonstrated scattered clusters of reactive-appearing epithelial cells in a background of debris and necrosis, while the smaller nodule showed a single reactive-appearing epithelial cell (Fig. 1B). The interpreting pathologist reported these findings as suggestive of fat necrosis.

* Corresponding author. New York–Presbyterian Hospital, Weill Cornell Medical Center, 425 East 61st Street, New York, NY 10065. Tel.: +1-212-821-0680; fax: +1-212-821-0671. E-mail address: ela9033@med.cornell.edu (E.K. Arleo).

3. Case 2

3.1. History

A 42-year-old G3P1 Asian female presented to our Breast Imaging Division with a palpable area of concern in her left infraclavicular region. She had a personal history of left breast multifocal ductal carcinoma in situ (DCIS) that presented as calcifications and were detected at age 40 years on routine screening mammography; initially, she was treated with lumpectomies but subsequently she underwent bilateral nipple-areolar-sparing mastectomies with immediate reconstruction involving tissue expanders. She had a family history of breast cancer in her sister at age 38 years; genetic testing was not performed. On physical examination, a palpable area of smooth nodularity was appreciated. The patient was referred for ultrasound at our institution in October 2013, at which time she disclosed – after questioning – that she had undergone recent fat injections at the present site of complaint to optimize cosmesis status post-breast reconstruction.

3.2. Imaging findings

Ultrasound targeted to the patient's palpable area of concern in the left infraclavicular region was performed, demonstrating in the 12:30 to 1:00 axis, 6–7 cm from the nipple, three similarly appearing ovoid circumscribed complex cysts with posterior through transmission, internal echogenicity and septations but no internal color Doppler flow; the largest measured 1.3×0.9×0.5 cm (Fig. 2A), and the two smaller structures measured 0.6 cm and 0.4 cm in maximal dimension, respectively. This was reported by the interpreting radiologist as possibly representing areas of fat necrosis secondary to the fat injections, and sampling of the dominant nodules was recommended to confirm a benign process.

The patient underwent ultrasound-guided FNA of the two largest nodules. At the time of the procedure, white foamy fatty material was visualized in the aspirate from both nodules (Fig. 2B). The aspirate specimens were collected using the same protocol described in Case 1. Cytologic analysis of both specimens demonstrated epithelioid cells, fragments of connective tissue and multinucleate giant cells (Fig. 2C and D). The differential diagnosis, wrote the interpreting pathologist, includes reactive changes in the setting of fat necrosis; definitively neoplastic cells were not identified.

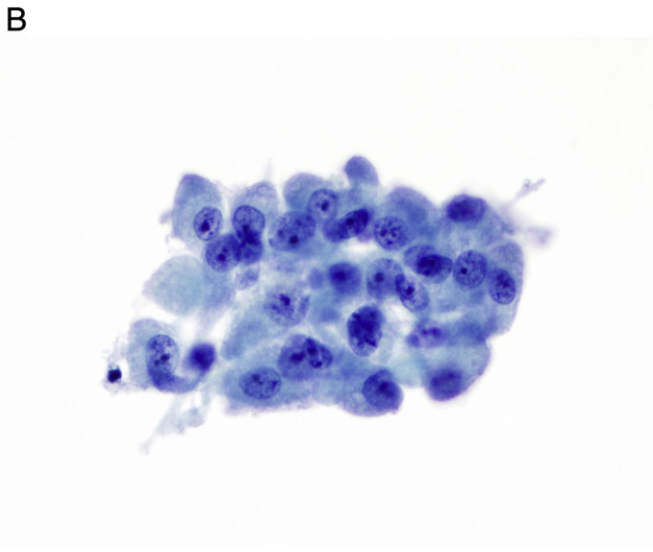
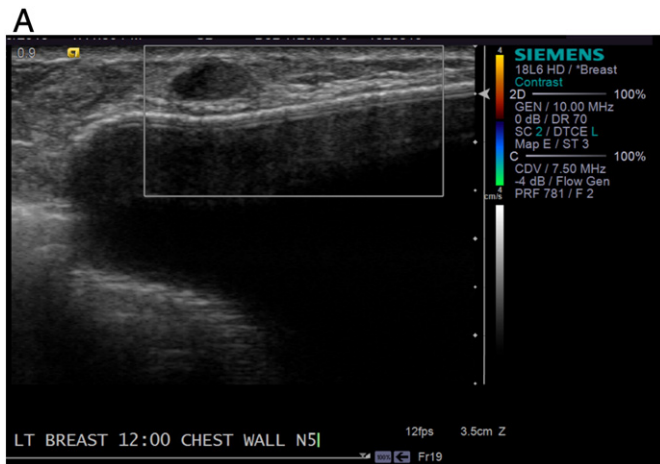


Fig. 1. A 67-year-old female, history of stage IV breast cancer status post-mastectomy and recent implant exchange with fat transfer, presents with a palpable area of concern on the left. (A) Grayscale and color Doppler image of the left at the 12:00 axis, 5 cm from the nipple, demonstrates a hypoechoic nodule with no color Doppler flow. (B) Papanicolaou-stained ThinPrep slide (original magnification × 600) of the FNA aspirate demonstrating scattered clusters of reactive-appearing epithelial cells in a background of debris and necrosis.

4. Case 3

4.1. History

A 48-year-old Caucasian female presented to our Breast Imaging Division with a new palpable area of concern on the left. She had a personal history of stage IIa multifocal invasive ductal cancer status post-right mastectomy in 2006 with transverse rectus abdominis myocutaneous flap reconstruction, as well as chemotherapy and radiation. Subsequent genetic testing revealed a BRCA variant of uncertain significance. She did well until 2011, when she was diagnosed with left breast DCIS and underwent left mastectomy, this time with saline implant reconstruction. In 2013, she was referred by her plastic surgeon with a new palpable lump on the left.

4.2. Imaging findings

Ultrasound of the reconstructed left breast was performed targeted to the area of palpable concern in the upper inner quadrant, demonstrating multiple (approximately 7) similar appearing circumscribed, hypoechoic, avascular, superficial nodules, ranging in size from 0.4 cm to 0.7 cm (Fig. 3A). Ultrasound-guided core needle biopsy of the largest nodule was suggested by the interpreting radiologist, with the additional recommendation that if biopsy yields benign results, then a short interval follow-up of the additional nodules in 6 months should be performed.

On the day of biopsy, the patient then revealed that she had a history of fat injections for cosmesis. Nevertheless, decision was made to proceed with the procedure and the nodule farther away from the patient's implant was targeted. Four cores of yellow-white tissue were collected in formalin and sent to pathology for analysis, yielding benign breast tissue, with reactive changes that appear to be post-inflammatory and comprise of non-specific mild histiocytic reaction and stromal fibrosis. The interpreting pathologist recommended correlation with clinical history and radiological findings. The pathology was felt to be concordant and at 6 month follow-up, and stability was documented (Fig. 3B), supporting a benign etiology; however, the patient elected surgical excision due to palpability and the final pathology also demonstrated benign breast tissue with post-surgical changes and cysts lined by histiocytes, a finding in fat necrosis.

Download English Version:

<https://daneshyari.com/en/article/4221827>

Download Persian Version:

<https://daneshyari.com/article/4221827>

[Daneshyari.com](https://daneshyari.com)