

CASE REPORT

Challenges in the Management of Giant Intraductal Breast Papilloma

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Introduction

Intraductal papillomas are relatively common benign breast lesions, and represent about 5% of proliferative benign breast lesions [1]. They may clinically present either as mammographically detected or palpable breast masses, with or without nipple discharge. Giant intraductal breast papillomas are uncommon and to our knowledge, only seven cases have been reported in the literature [2–7]. Of these cases, three involve pediatric patients [2, 3]. Six of the cases were reported by institutions outside the United States [2–6] and only one case occurred in the United States [7]. All reported cases involved women under the age of 60.

Herein, we report a unique case of giant intraductal papillomas of the breast in a woman aged 80 years highlighting that the differential diagnosis of a large breast mass includes both benign and malignant conditions. We also emphasize that, although benign, papillomas presenting as a large breast mass affecting the skin requires extensive breast surgical treatment.

Key Clinical Message

The differential diagnosis of a large breast mass in a post-menopausal woman can include both benign and malignant etiologies. Although rare, diagnosis of giant intraductal papilloma must be considered in the differential. Furthermore, although benign, papillomas presenting as a large breast mass affecting the skin require extensive breast surgical treatment.

Keywords

Benign breast disease, breast neoplasm, intraductal papilloma, large breast mass.

Case Report

Case history

An 80-year-old woman presented to the Breast Clinic with a left breast mass. The patient reported previous benign excisional biopsy of a breast lump around age 50 with no breast-related concerns since that time. About two years ago, she noticed a lump in the left breast that appeared to increase in size over time. Around the same time, she had a single episode of spontaneous bloody discharge from the left nipple. Due to various personal reasons, she delayed her own care and had not sought breast evaluations until the size of the mass had reached a point that prompted her to have it assessed. She had not experienced any pain, discharge, or skin breakdown in her breast, other than some discomfort related to the fullness. She had no family history of breast or ovarian cancer and no risk factors for breast cancer other than her age.

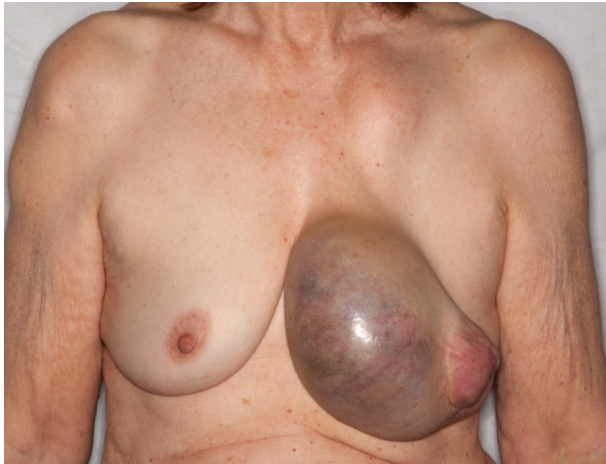


Figure 1. Clinical image of the breasts revealing a large left breast mass.

Clinical examination revealed a large left breast mass measuring ~20 cm involving the inferior and medial left breast. The overlying skin was bluish-purple in color, with a lateral deviation and distortion of the nipple (Fig. 1). Upon palpation, the mass measured ~20 × 15 cm with thickening of the nipple. The patient also had a small mass on the left upper anterior chest that had remained unchanged for several years.

Investigations, differential diagnosis, and treatment

Breast imaging work up included mammography, ultrasound, and magnetic resonance imaging (MRI). Diagnostic mammography revealed a large mass in the left breast and a few scattered coarse calcifications (Fig. 2A). Ultrasound examination demonstrated a complex vascular

mass with a large homogenous fluid component occupying the majority of the left breast with features suspicious of malignancy (Fig. 2B). Bilateral MRI was performed to further characterize the mass, revealing a 13 × 11 × 13 cm mass with both cystic and enhancing solid components abutting the chest wall and the lateral aspect of the mass demonstrating skin involvement (Fig. 2C). Additionally, the small palpable mass on the superior left chest wall was consistent with a lipoma.

Imaging features were suggestive of malignancy and the differential diagnosis included locally advanced breast cancer, papillary cancer, angiosarcoma, intracystic papilloma or hematoma secondary to a lesion. In order to facilitate breast biopsy, the radiologist performed an aspiration of the left breast mass removing 600 cc of brown-gray fluid; cytology negative for malignancy. An ultrasound-guided core-needle breast biopsy was performed with biopsies taken from the mass at the subareolar location and at 10 o'clock position, posterior depth against the chest wall. Both revealed sclerosing papilloma with focal usual ductal hyperplasia and minimal focal cytologic apocrine atypia (Fig. 3). A prominent left axillary lymph node was subject to fine needle aspiration biopsy and was negative for malignancy.

Outcome and follow-up

The patient underwent left total mastectomy. The mastectomy specimen was finely sliced at 4–5 mm intervals throughout and the firm areas were submitted for microscopic examination (Fig. 4). Pathology revealed a giant papilloma in the subareolar left breast with multiple dark red mural papillary nodules lining the cyst wall. The post-operative phase was uncomplicated and the patient was advised routine follow-up care.

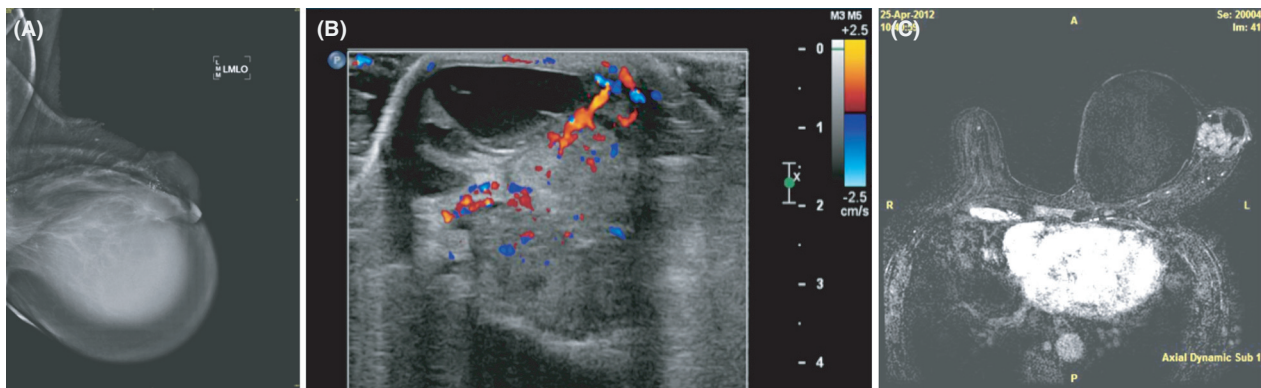


Figure 2. (A) Mammogram (medial-lateral oblique view) of the left breast demonstrating a large central breast mass. (B) Ultrasound with color doppler of the solid, vascular portion of the left breast mass. (C) MR image of the left breast mass demonstrates the large cystic portion and one of the enhancing solid portions of the complex mass.

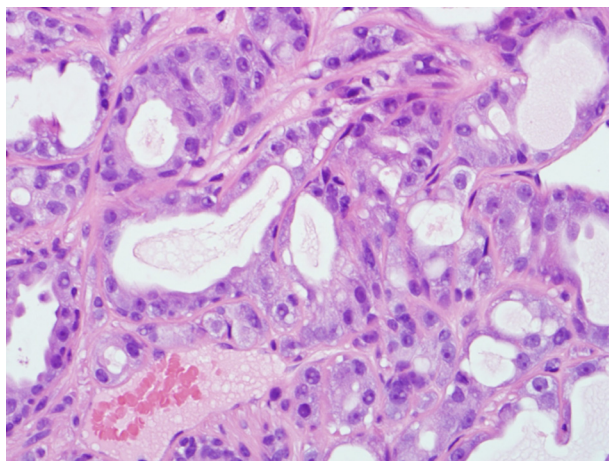


Figure 3. H&E 40×5 – high magnification view of core biopsy sample demonstrates apocrine atypia.

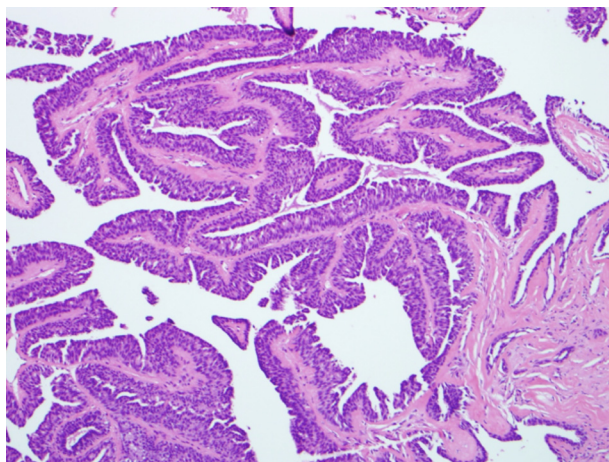


Figure 4. H&E 10×3 – low magnification view of mastectomy sample demonstrates papilloma.

Discussion

Intraductal papillomas are benign breast lesions that are usually asymptomatic but may be diagnosed as mammographically detected abnormalities or clinically present as breast lumps, or nipple discharge. Single intraductal papillomas are most commonly centrally located in the breast in a subareolar location and present with nipple discharge varying in color from milky to green to brown [8]. Multiple intraductal papillomas are generally peripherally located, presenting incidentally as mammographically detected masses or as palpable breast masses [9]. We present an uncommon clinical presentation of a papilloma with an unusually large size at presentation (20 cm \times 15 cm) and bluish-purple discoloration of the overlying skin.

Breast imaging features of papilloma are nonspecific. In this case, three imaging modalities were used to image the breast mass: mammography, ultrasound, and MRI. In general, papillomas do not have a classic appearance on mammography, rather they present as mammographic densities [10]. On ultrasound, they are often seen as an intraductal mass with or without ductal dilatation, intracystic mass, or a solid pattern with the intraductal mass completely filling the duct [11]. There is limited data describing MRI features of papillomas that may include enhancing nodules with or without intraductal components [10] of note, as papillary breast lesions enhance on MRI, this test cannot differentiate between benign and malignant papillary lesions making tissue diagnosis necessary. In this patient, the mammogram revealed a large breast mass and scattered calcifications that were nonspecific. Ultrasound showed a large complex partially cystic mass in the left breast, raising the suspicion for malignancy. MRI revealed a large mass with both solid and cystic components that was highly suggestive of malignancy.

Due to the concern for malignancy and the uncommon presentation of this mass, ultrasound-guided core-needle biopsy was necessary for diagnostic evaluation. The biopsy finding of sclerosing papilloma with cytologic atypia was discordant with the imaging findings that suggested malignancy. Therefore, the final diagnosis was made after surgical excision of the mass, demonstrating the difficulties in diagnosis with an atypical presentation of a benign condition such as giant intraductal papilloma. Benign papillomas often show apocrine metaplasia, some of which are cytologically atypical with enlarged nuclei and prominent nucleoli. Focal minimal cytologic atypia, as in this case, usually has no prognostic significance. However, severe and extensive apocrine atypia in a core biopsy of a papilloma may indicate the existence of possible carcinoma in a large papillary tumor.

Although the standard of care for large papillomas of the breast is excision [3], the size of the mass and severe stretching of the skin limited the opportunities for excision with optimal closure in this patient. Hence, the patient underwent mastectomy of the left breast. Due to the benign findings, the patient remains at age-appropriate risk for future breast cancer development. Based on her excellent overall good health and good 10-year life expectancy, she was advised screening mammogram of the contralateral breast in one year. In our patient, the giant nature of the mass provided unique complications in diagnosis, imaging, and the necessity to pursue mastectomy rather than surgical excision. When approaching the differential diagnosis for a large breast mass, this case highlights the importance of considering the benign entity of giant papillomas of the breast.

Conflict of Interest

None declared.

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