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Case Report

Case report: Malignant-type calcification of the nipple with histologic correlation

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ABSTRACT

Malignant-type calcification of the nipple is a rare lesion, with only 2 cases reported in literature. We present a case of a 48-year-old female who came to us because of noncycle breast pain, where malignant-type calcification of the nipple was incidentally seen on mammography. The final pathology is fibrocystic change with benign calcium in connective tissue. Different diagnosis of malignant and benign histology of malignant-type calcification with no associated mass is difficult or even not eligible so that wedge excision the nipple without making the deformity needs to perform to diagnose the histology.

Case report

A 48-year-old female, with 2 children, no breastfeeding, presented for screening breast cancer because of noncycle breast pain.

Initial clinical examination showed the left nipple was slightly harder than the right nipple, and that the color of both nipples was not different. Breast ultrasound was normal. Mammography had no mass and calcification lesion in parenchyma. At the left nipple, there were coarse heterogeneous calcifications within and right behind the nipple but a few fine pleomorphic calcifications BIRADS 4 (Fig. 1). According to this image, this lesion was malignant-type calcification. To diagnose, we recommended the patient to take breast MRI to confirm whether she had the Paget or not and to perform the wedge excision of the nipple. The patient denied to take breast MRI but agreed to have a wedge excision of the nipple. The pathology was fibrocystic change with calcium in connective tissue (Fig. 2). Follow up at 1 year was performed. The nipple has no deformity. The nipple calcification on the mammography declined (Fig. 3) and the lesion at the left nipple on breast MRI was benign (Fig. 4).

Discussion

The nipple and areola are composed of pigmented squamous epithelium. The nipple-areola complex also contains a layer of circumferential smooth muscle and sebaceous glands that open through small prominences (called Montgomery

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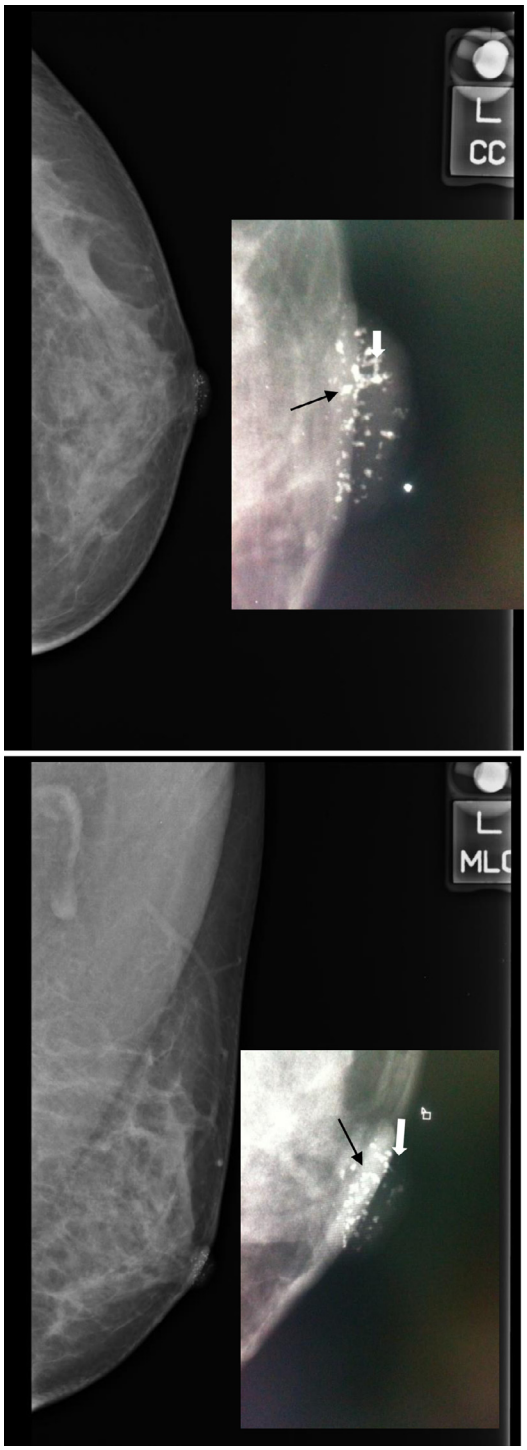

Fig. 1 – mammography on left craniocaudal (LCC) and left mediolateral oblique (LMLO) view reveals calcifications at the nipple which are coarse heterogeneous calcifications within and right behind the nipple (arrow), but a few fine pleomorphic calcification (white arrow) BIRADS 4 on the magnified view.

tubercles) that surround the periphery of the areola. Hence, nipple calcification lesions are generally benign. Rarely do termianl duct loubular unit (TDLUs) arise from the lactiferous sinus portion of main lobar ducts within 5 cm of the nipple

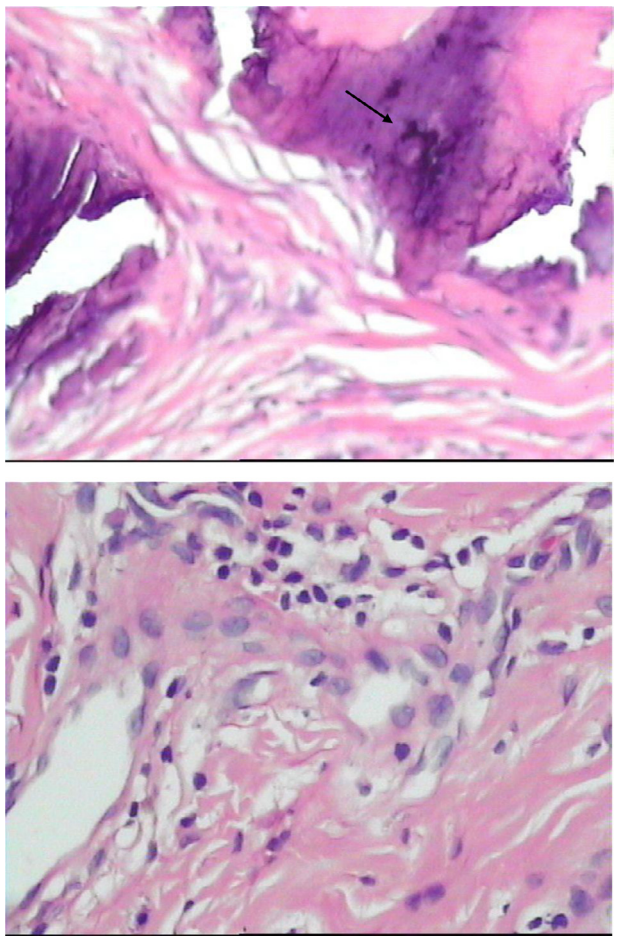

Fig. 2 – Photomicrograph of biopsy specimen shows fibrocystic change with calcium in connective tissue (H&E x40), with calcifications (arrow) in the upper image and chronic inflammatory periductal in the lower image.

[6]. According to Wellings [7], the terminal ductal lobular unit is of central importance because it is the site of origin of: (1) ductal carcinoma in situ; (2) lobular carcinoma in situ; (3) infiltrating ductal carcinoma; (4) infiltrating lobular carcinoma; (5) fibroadenoma; (6) most components of fibrocystic change (cysts, apocrine metaplasia, various forms of adenosis, and epitheliosis). Besides, there are from 6 to 20 ducts opening in the nipple and the skin of the nipple is continuous with the epithelium of the ducts. Cancer in the ducts can extend out into the skin of the nipple, forming Paget's disease of the nipple [3].

In this case, calcifications at the nipple are malignant-type, including coarse heterogeneous calcifications within and right behind the nipple and a few fine pleomorphic calcification. These calcifications are typically seen in grade 2 in situ carcinoma [4]. Distribution of malignant and benign histology of heterogeneous calcifications with no associated mass is 39% and 61% [5]. Different diagnosis is difficult or even not eligible. Hence, punch biopsy or wedge excision of the nipple, a procedure without making deformity, is needed to diagnose. The final histology was fibrocystic change with calcium in connective tissue. According to the literature, there were 2 cases with the similar image reported. One case was

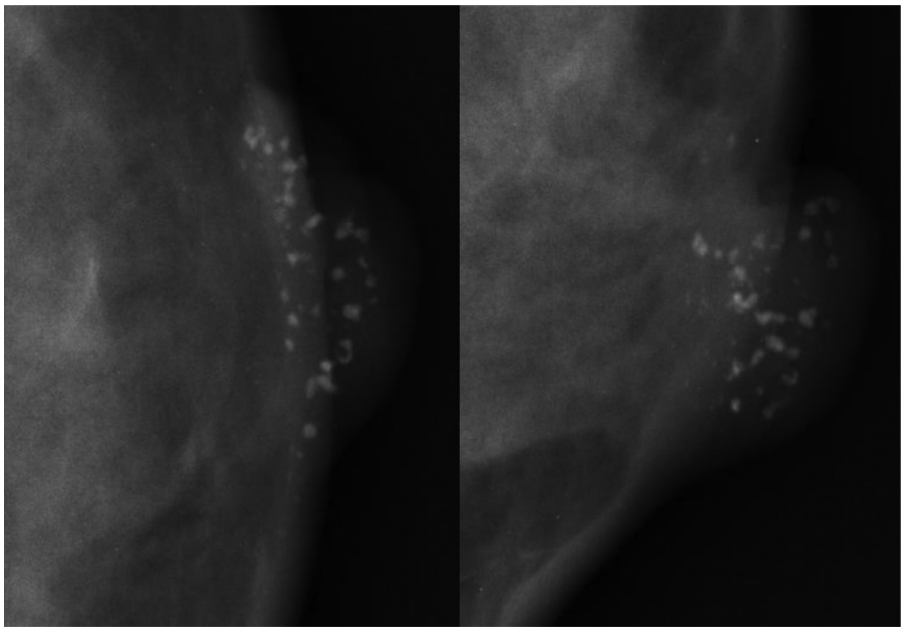

Fig. 3 – The follow-up LCC and LMLO mammography: coarse heterogeneous calcifications within and right behind the nipple BIRADS 4 on the magnified view, declined number of calcifications compared with last year mammography.

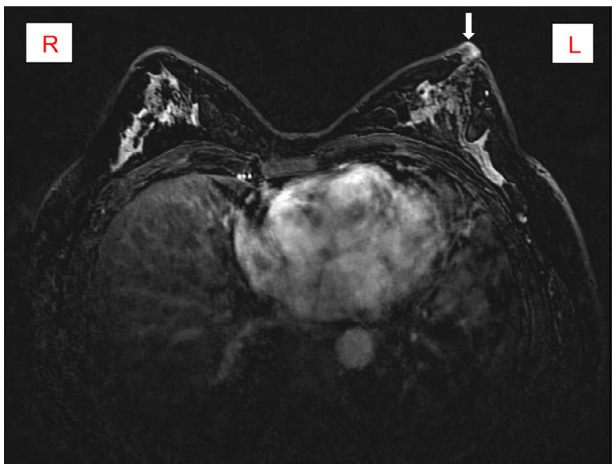

Fig. 4 – The follow-up breast MRI.
There is 2.1 mm thickness of dermal enhancement with a non-enhancement central area (white arrow) at the left nipple.

a patient who underwent previous reduction mammoplasty showed coarse calcifications located circumferentially around the nipple that signifies benign calcifications at a suture site [2]. Meanwhile, case with the final histology malignant basal cell carcinoma was on the male patient [1]. Because the experience of these cases is so rare that this case needs to be reported.

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