Case Report

Papillomatosis and Breast Cancer: A Case Report and Review of the Literature

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Received: June 2, 2019; Accepted: June 29, 2019; Published: June 31, 2019

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Keywords: breast cancer, papillomatosis

Introduction

Papillary lesions of breast have varied morphological, radiological, and pathological features. Such lesions are characterized by formation of epithelial fronds that have both the luminal epithelial and the outer myoepithelial cell layers, supported by a fibrovascular stroma [1]. Papillomas of the breast can be divided into solitary intraductal papillomas, multiple papillomas, papillomatosis, and juvenile papillomatosis [2]. We report a case of a solitary papilloma with ductal carcinoma in situ where patient’s choice of treatment was affected by the anxiety of risk of cancer and decided to opt for modified radical mastectomy.

Case Report

A 69-year-old woman presented with chief complaint of a lump in left breast of two years duration. On examination, a firm 2.2 × 1.1 cm mass was felt in upper outer quadrant (UOQ) of left breast. Mammogram showed irregular dense breast tissue with no detectable lesion or asymmetric density in UOQ of left breast, considering atypical hyperplasia, local malignant transformation to be excluded, suggesting surgical examination. No obvious abnormalities in axillary lymph nodes (Figure 1).

Figure 1: Ultrasound scan in the case presented showed an irregular solid hypoechoic nodule.
Ultrasound scan showed an irregular solid hypoechoic nodule in UOQ of left breast. The size was 2.2 × 1.1 cm, the boundary was inferior, the internal echo was uneven, CDFI, CDE showed a small amount of blood flow signal, PW extracted the arterial spectrum, PS=11.3 cm/s, RI=0.67. Single lymph node enlargement in the left axilla, 2 × 06 cm, clear cortical medullary boundary, no obvious blood flow signal (Figure 2).

**Figure 2:** Mammogram showed irregular dense breast tissue with no detectable lesion or asymmetric density in UOQ of left breast.

The patient underwent a tumor resection. The pathological examination reported intraductal papilloma with ductal epithelial mild to moderate atypical hyperplasia, and focal severe atypical hyperplasia ductal carcinoma in situ. The patient required a modified radical mastectomy with 0/9 metastases in the axillary lymph nodes (Figure 3).
Figure 3: The pathological examination reported intraductal papilloma with ductal epithelial mild to moderate atypical hyperplasia, and focal severe atypical hyperplasia ductal carcinoma in situ. There were 0/9 metastases in the axillary lymph nodes.

Discussion

A solitary papilloma occasionally appears on mammography as a circumscribed subareolar mass or as a solitary dilated retroareolar duct, most frequently observed in women 30 to 50 years of age. They commonly cause a serious or serosanguinous discharge. The discharge is bloodstained in approximately one half of women with these papillomas [3]. The patient in this case presented with a lump in the breast, and there was no history of nipple discharge. Papillomatosis of the breast is defined as severe ductal papillomatosis. Pathologic findings consist of papillomatosis and extensive cyst formation [4]. Patients typically present with a painless, circumscribed, mobile mass, which is easily confused with a cyst [4]. Follow-up studies have suggested that papillomatosis is associated with an increased risk of breast cancer. Patient's female relatives and the patient herself may be at increased risk for developing carcinoma, particularly if the lesion is bilateral and the patient has a family history of breast cancer [5-7]. Therefore, long-term follow up is recommended both for the patient and the family [8].

On sonography, a papilloma is seen as an intraductal mass in a dilated duct, an intracystic mass, or a solid mass with a well-defined border. Indeed, Ultrasound scan in the case presented showed an irregular solid hypoechoic nodule. Mammogram in the case showed irregular breast glandular thickening image rather than soft tissue opacity. However, early or small lesions may remain radiologically occult. Micropapillary DCIS without calcification is difficult to recognize on mammography, or findings may be nonspecific. This would explain the lack of radiological signs of “high density” lesions noted in the left breast in the case reported.

Prognosis of papillary lesions, even though associated with DCIS, remains excellent. Even those with papillary carcinoma have a better prognosis, with less axillary nodal involvement, than those with other forms of ductal carcinomas [9,10]. Multifocality and sizes of lesions, associated risk factors and patients’ wishes may help decide the type of surgery, such as breast conservative surgery or mastectomy. It should be emphasized that patients who undergo breast conservative surgery do not necessarily have a worse prognosis than patients treated by a mastectomy. It is recommended that if breast conservative treatment is undertaken, a clear margin of at least 10 mm should be adhered to [11,12].

Conclusion

Clinicians should be aware of various papillary lesions of breast. Papillomatosis of breast remains a distinct entity, has a high propensity of being bilateral and recurrent, and is associated with in situ carcinomas. It is important
to emphasize such characteristics to the patient while discussing treatment options so that patient can make an informed choice. The secretion of serous or bloody nipple discharge does not distinguish intraductal papilloma from cancer [13]. When a tumor is revealed by delicate palpation it should be characterized in terms of the number of tumors, size, consistency, surface and margin. Deciding on the appropriate surgery for intraductal papilloma is problematic due to the difficulty in discriminating between intraductal papilloma and breast cancer. Moreover, the significance of intraductal papilloma as a pre-cancerous lesion is controversial to surgeons. Patients with papillomas do have an increased risk of developing breast cancer and should be kept under annual review with regular digital mammography if treated conservatively.

**Acknowledgement**

This work was supported by grants from the National Nature Science Foundation of China (No.81860487; No.81560197).

**References**