Original Article

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Papillary Lesions of Breast

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Rezumat

Leziuni papilare mamare

Introducere: Leziunile papilare mamare reprezintă un grup patologic eterogen și sunt caracterizate prin formațiuni dezvoltate la nivelul canalelor galactofore. Scopul acestui studiu a fost de a prezenta, ținând cont de datele existente în literatura, cazuri supuse mastectomiei parțiale ca urmare a prezenței unei formațiuni tumorale mamare, care au prezentat leziuni papilare la examinarea histopatologică.
Material-metode: Datele clinice și buletinele anatomopatologice a 42 de pacienți operați în clinica noastră în perioada 2006-2014, considerate a prezenta leziuni papilare la examenul anatomopatologic, au fost examinate retrospectiv. Pacienții au fost evaluați în funcție de vârstă, sex, acuze, localizarea leziunilor, tipul de operație efectuat, tipul histopatologic al leziunii, perioada de urmărire postoperatorie și leziunile descoperite în timpul urmăririi.
Rezultate: Biopsia excizională sub formă de mastectomie parțială s-a efectuat la 34 de pacienți, raportați ca prezentând leziuni papilare benigne în urma biopsiei aspirative pe ac fin efectuate. În cazul a 11 pacienți leziunile au fost marcate radiologic anterior operației. 33 de pacienți prezentând leziuni papilare benigne la biopsia excizională au fost urmăriți postoperator. Mastectomia radicală modificată a fost efectuată la un număr total de 9 pacienți, dintre care 1 pacient cu leziune papilară malignă la biopsia excizională și 8 pacienți cu leziune papilară malignă la biopsia aspirativă pe ac fin.
Concluzii: Diagnosticul histopatologic trebuie confirmat prin efectuarea unei biopsii excizionale cu rezultat definitoriu la pacienții diagnosticați cu leziuni papilare benigne la biopsia aspirativă pe ac fin, iar urmărirea postoperatorie trebuie efectuată în mod riguros pentru leziunile maligne dezvoltate la pacienți detectați ca prezentând leziuni papilare benigne.

Cuvinte cheie: glandă mamară, papilar, malign, biopsie aspirativă pe ac fin

Abstract

Introduction: Papillary breast lesions constitute a pathological heterogeneous group and are characterized by growth in the milk ducts. In this study, we aimed to present in view of literature patients who underwent lumpectomy due to breast mass and with papillary lesion in histopathological examination.
Material method: The pathology records and informations of 42 patients who were operated between 2006-2014 in our clinic and considered to have papillary lesion in histopathological examination were examined retrospectively. The patients were evaluated for age, gender, complaints, lesion localizations, performed surgery, histopathological type, follow-up period and the lesions occurring during follow-up.
Findings: The excisional biopsy in the form of lumpectomy was made to 34 patients who were reported as benign papillary lesion in coreneedle biopsy performed. The lesion in 11 patients were marked preoperatively by radiology clinic. 33

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patients who had benign papillary lesion in excisional biopsy were followed. Modified radical mastectomy was performed to a total of 9 patients including 1 patient with malignant papillary lesion in excisional biopsy and 8 patients with malignant papillary lesion in coreneed lebiopsy.
Result: Histopathological diagnosis should be confirmed by performing definitely excisional biopsy in patients who detected benign papillary lesions by coreneedle biopsy and strict clinical follow-up should be made for developing malignancies in patients who detected benign papillary lesions.

Key words: breast, papillary, malignant, needlebiopsy

Introduction

Papillary breast lesions constitute a pathological heterogeneous group and are characterized by growth in the milk ducts. Breast papilloma consists of a fibrovascular center, myoepitelium layer and outer cuboidal or columnar epithelium. It constituteslessthan 10% of benign breast lesions and less than 1% of malignant breast cancers (1, 2, 3, 4). Papillary lesions are classified as papillomas (solitary intraductal papilloma, multiple papillomas, papillomatosis and juvenile papillomatosis), sclerosing papillary lesions, intraductal papillary carcinomas and invasive papillary carcinomas (5, 6). It is found often together with epithelial hyperplasia and apocrine metaplasia. Large duct papillomas are often located close to the nipple and are single. Small duct papillomas are often in the deep of the ductal system and tend to be multiple.If papillary lesions are central and solitary, they are called papilloma and if papillary lesions are peripheral and in multiple terminal ductal lobular units, they are called papillomatosis.In clinic, papillomas may appear as palpable masses, bloody or bloodless nipple discharges or densitiesseen onmammography. More than 80% of large papillomas cause nipple discharge. Papillomas can cause bloody nipple discharge as a result of the rotation of its stalk or can cause bloodless nipple discharge as a result ofirritating papilloma duct (7).

In this study, we aimed to present in view of literature patients who underwent lumpectomy due to breast mass and with papillary lesion in histopathological examination.

Material and Method

The pathology records and informations of 42 patients who were operated between 01.01.2006 and 01.11.2014 in our clinic and considered to have papillary lesion in histopathological examinationwere examined retrospectively. The patients were evaluated for age, gender, complaints, lesion localizations, performed surgery, histopathological type, follow up period and the lesions occurring during follow-up.

Findings

All of the patients were female and the average age of them was 44.5 (13-79). Their initial complaints were nipple discharge in 28 (66.6%) patients (bloody in the 2 patients), breast mass in 9 (21.4%) patients, the mass and nipple discharge in 5 (12%) patients. The lesion was centrally located in 27 (64.2%) patients and was peripherally located in 15 (35,8%) patients. All of the patients underwent breast ultrasound. In addition to ultrasound, mammography was made for women over the age of 40, magnetic resonance imaging was made for women under the age of 40. The excisional biopsy in the form of lumpectomy was made to 34 patients who were reported as benign papillary lesion in core needle biopsy performed. The lesions in 11 patients were marked preoperatively by radiology clinic. 33 patients who had benign papillary lesion in excisional biopsy were followed. Modified radical mastectomy was performed to a total of 9 patients including 1 patient with malignant papillary lesion in excisional biopsy and 8 patients with malignant papillary lesion in core needle biopsy. In histopathological examination, it was reported that there were solitary intraductal papilloma in 23 patients (*Fig. 1*), papillomatosis without atypia in 3 patients, atypical papillomatosis in 3 patients (*Fig. 2*), juvenile papillomatosis in 2 patients (*Fig. 3*), multiplepapillomas in 2 patients, papillary carcinoma in 1 patient, invasive papillary cancer in 8 patients (*Fig. 4*). Pathological results and surgical procedures was presented in *Table 1*.

There was also mix (lobular+invasive ductal) carcinoma in the other breastin 1 patient with papilloma on the left breast. There was also tubular carcinoma in the right breast in the other patient with a diagnosis of papillary cancer in the left breast. Modified radical mastectomy was performed to 1 patient with papillary carcinoma in histopathological examination

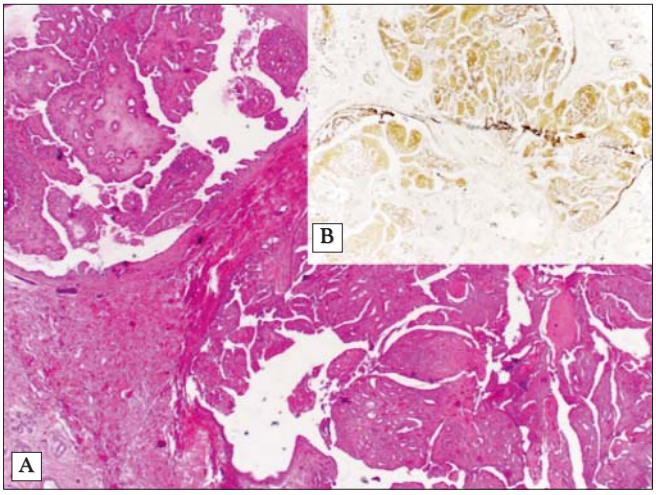

Figure 1. *Benign solitary intraductal papilloma.* ***(A)*** *Tumoral process consisting of papillary structures surrounded by benign epithelial cells (HE x 25).* ***(B)*** *Papillary structuring that are limited by myoepitelium cells in tumoral structuring (SMA x 25)*

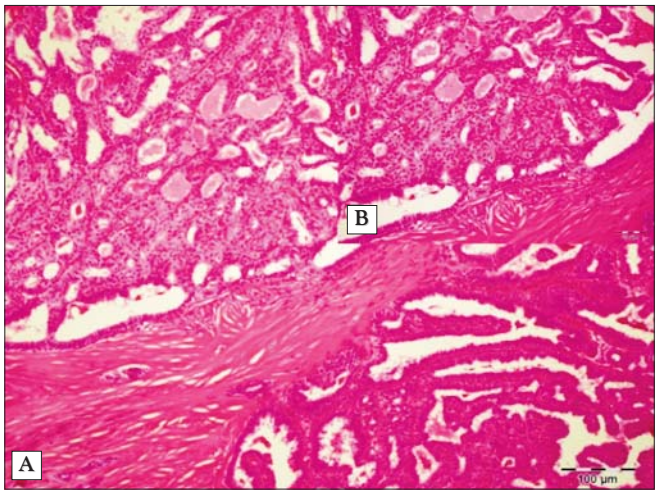

Figure 2. *Atypical intraductal papillomatosis.* ***(A)*** *Papillary tumor structuring that is classified with myoepitelium cells. (HEx100).* ***(B)*** *Nuclear atypia in cells that form papillary tumor structuring (HE x 200)*

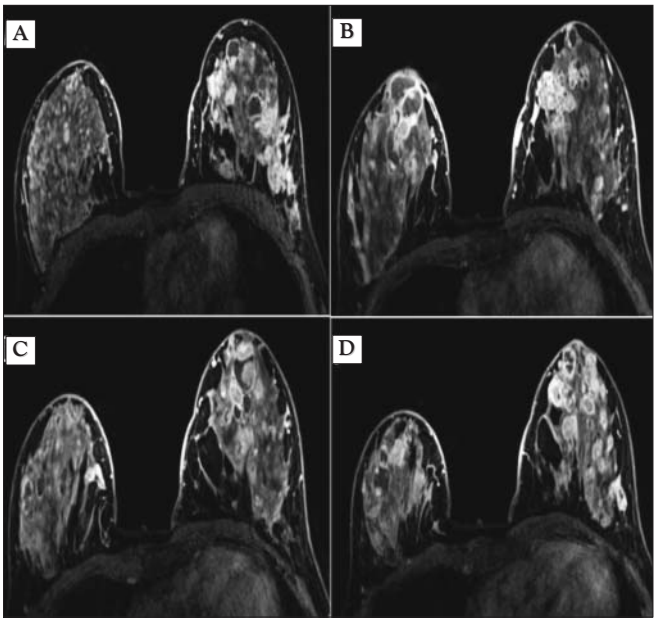

Figure 3. *In post-contrast T1-weighted images, complex cysts that show contrast involvement on the wall in both breasts, sometimes have a dense content and show mural component on the left breast*

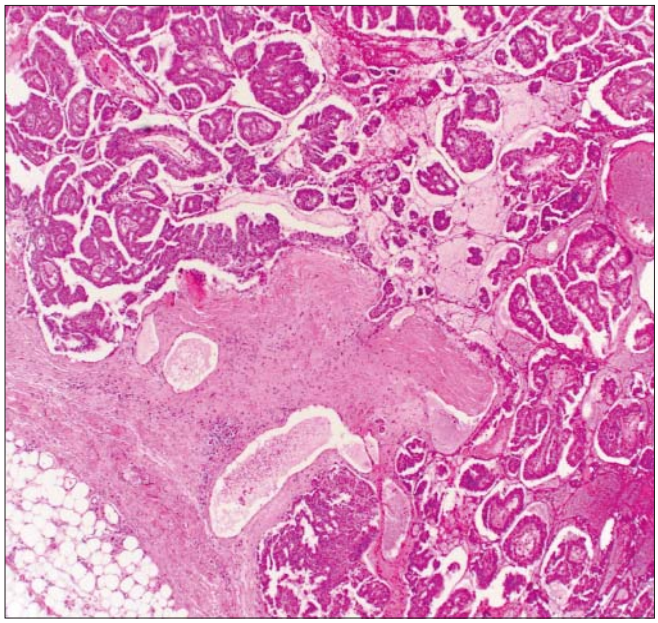

Figure 4. *Invasive papillary carcinoma. Tumoral structuring in papillary configuration has invaded the environmenta stroma by disturbing the basement membrane integrity (HEx25)*

after lumpectomy and 8 patients with papillary carcinoma in histopathologic examination of core needle biopsy. Residual tumor tissue was not observed in all of the pathologies of these patients after mastectomy. There was metastatic axillary lymph node in 2 patients. The average follow-up period was 38.4 (3-82) months in 33 patients with benign papillary lesion. Recurrence or a new malignant lesion was not observed during this period. The average follow-up period was 44.7 (31-66) monthsin 9 patients with malignant papillary lesion. Recurrence or mortality was not observed during this period.

Discussion

Papillomas are the lesions that formed by ductal epithelial proliferation with the development of a fibrovascular stalk (8).They are seen most frequently in postmenopausal women after the age of 50. They are rarely reported in adolescent years and in older age (9). In our study, all of the patients were female and the average age of them was 44.5.

Table 1. *Pathological results and surgical procedures*

Biopsy	Biopsy results	Surgical procedures (first)	Number of patients	Final pathology	Surgical procedures (second)
Tru-cut	Benign papillary lesions	Lumpectomy	23	Solitary intraductal papilloma	-
			3	Papillomatosis without atypia	-
			3	Atypical papillomatosis	-
			2	Juvenile papillomatosis	-
			2	Multiple papillomas	-
			1	Papillary cancer	Modified radical mastectomy
	Malignant papillary lesion	Modified radical mastectomy	8	Invasive papillary cancer	-

While surgical resection is definitely recommended in multiple papilloma and papillomatosis, the treatment of solitary intraductal papilloma is controversial.Because malignant papillomas may be mistakenly identified as benign, what treatment to be preferred is controversial following papilloma diagnosed with percutaneous biopsy. Therefore, common belief is the surgical removal of papillomas (10,11). The rate of missed diagnosis was given as 28 to 36% in the series exemplified by excisional biopsy to lesions that were reported as papillary lesion (atypical or not) after core needle biopsy (CNB). The majority of patients diagnosed with cancer (53-100%) were found to be DCIS (8,12,13). Cyr et al. in their study classified again 20 (24%) of 82 papillary lesions that performed excisional biopsy after core needle biopsy (CNB),determined 10 to be malignant and recommended surgical excision of the lesions diagnosed with a benign papilloma by CNB (10). Sydnor et al. found that 1/38 of papillary lesions that were diagnosed as benign by core needle biopsy (CNB) were malignant and they classified these lesions histologically as DCIS by open excision (14). Renshaw et al. reported thatresection is unnecessary in cases of intraductal papilloma without atypia or is minimally atypical (15). In our study, 3 (8.8%) from 34 patients with benign papillary lesions that were detected as intraductal papilloma by core needle biopsy have been reclassified after lumpectomy. In the histopathological classification after resection, 2 cases of papillomatosis without atypia were reclassified as atypical papillomatosis and 1 case of indraductal solitary papilloma was reclassified as intraductal papillary carcinoma.

Youk et al. reported that the risk of estimating as low-grade is higher in lesion in patients the age of 50 or above compared to patients under the age of 50; Plantadeet al. reported that this ratio is higher in patients under the age of 50 (16,17). In our study, all patients in the malignant group were over 50 years old. Youk et al. reported that the frequency of estimating as low-gradeis more in lesions with ≥3 cm proximity to the nipple compared to papillary lesions with <3 cm proximity to the nipple ($p = 0.046$) (16). Moreover, Kilet al. concluded that malignant papillomas are more peripheral compared to benign lesions ($p = 0.005$) (18). In our study, lesions were peripheral in all patients with malignancy.Kil et al. found in their study that the probability of malignancy is high in papillary tumors with > 1.5 cm of size (18). Plantadeet al. argued that the risk of estimating as low-grade is higher in lesions with > 1 cm of size in radiologic images (17). Chang et al. found in their study thatthere was a statistically significant correlation between malignancy diagnosed after surgical excision and lesion size ($p = 0.04$) (11). In our study, the average size of lesions in patients in the malignant group was 3,1 cm (1,5-7). All of the lesions were larger than 1.5 cm.

The risk of developing cancer from papillary lesion is determined by whether it contains the atypia (19). Papillary lesions without atypia increase cancer risk by 1.5 to 2 fold for both breasts. Papillary lesions with atypia were found to increase breast cancer risk by 7.5-fold (20-21). The development of malignancy was not observedin the average follow-up of 38.4 months of a total of 33 patients with papillary lesions including 3 of those with atypia and 30 of those without atypia.

Ultrasound, mammography, MRI can be used in the imaging of papillary lesions. Core biopsy can provide benefits in malignant and benign differentiation. However, surgical resection is advantageous in order not to miss malignancy (6,22).

Result

Histopathological diagnosis should be confirmed by performing definitely excisional biopsy in patients who detected benign papillary lesions by core needle biopsy and strict clinical follow-up should be made for developing malignancies in patients whodetected benign papillary lesions.

Conflict of interest

No conflicts of interest exist. We have disclosed to study participants potential investigator conflicts of interest.

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