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CASE REPORT/OLGU SUNUMU

A RARE CASE: INVASIVE PAPILLARY CARCINOMA OF BREAST. DIAGNOSTIC CLUES IN FINE NEEDLE ASPIRATION CYTOLOGY

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Bu çalışma, IV.Ulusal Sitopatoloji Kongresinde sunulmuştur.

ABSTRACT

Fine needle aspiration cytology (FNAC) is an easy and rapid method in the differential diagnosis of breast masses. Papillary carcinoma, a rare malignant tumor of the breast, accounts for only 1-2% of the breast tumors. Benign and malignant papillary lesions of the breast can be difficult to distinguish in both cytological and histological preparations. Here we presented a case of suspicious lesion in FNAC, which was diagnosed as invasive papillary carcinoma in tissue.

Keywords: papillary carcinoma, breast, fine needle, aspiration cytology.

NADİR BİR OLGU: MEMENİN İNVAZİV PAPİLLER KARSİNOMU. İNCE İĞNE ASPİRASYON SİTOLOJİSİNDE TANI KOYDURUCU İPUÇLARI

ÖZET

İnce iğne aspirasyon sitolojisi (İİAS) meme kitlelerinin ayırıcı tanısında kolay ve hızlı bir yöntemdir. Papiller karsinom meme tümörlerinin sadece %1-2'ini oluşturan nadir malign tümörlerdendir. Memenin benign ve malign papiller lezyonlarını sitolojik ve histolojik preparatlarda ayırt etmek güç olabilir. Burada İİAS'nde şüpheli lezyon, dokuda invaziv papiller karsinom tanısı alan olgu sunulmaktadır.

Anahtar sözcükler: papiller karsinom, meme, ince iğne aspirasyon sitolojisi

Introduction

Papillary lesions of the breast have been evaluated in a wide spectrum ranging from benign intraductal papilloma (with or without atypia) to papillary carcinoma in situ and invasive papillary carcinoma (1). It could be difficult to distinguish benign and malignant papillary lesions of breast in cytological and histological preparations (2). In this paper, because of the difficulties that could be experienced in differential diagnosis of benign and malignant papillary lesions, we present FNAC findings of a special type of breast cancer, invasive papillary carcinoma, which was rarely encountered.

Case report

A centrally localized, 3 cm solitary mass with irregular contours was seen in the ultrasound evaluation of a 79 year-old female patient who presented to the general surgery outpatient clinic with a mass and bloody nipple discharge in the right breast. FNAC was planned to patient due to prior diagnosis of fibroadenoma and breast carcinoma. US-guided fine needle aspiration cytology was performed and then excisional biopsy was carried out because the mass was diagnosed as suspicious lesion.

There were abundant cells; cell groups which shows pleomorphism, columnar cells which were occasionally formed papillary structures, and scattered as single cells in some situations in the FNAC of firm mass with irregular contours which was fixed to surrounding tissue (Figures 1, 2, 3). Case was diagnosed as suspicious lesion after cytological examination so an excisional biopsy was suggested to distinguish between intraductal papilloma and papillary carcinoma. In the excisional biopsy specimen, a 3 cm mass was seen with irregular borders and central necrosis. Microscopically, it was seen that there were papillary, adenoid, and cribriform structures with increased arrangement around the fibrovascular core that fill the cystic spaces and these structures were lined by columnar epithelium. No myoepithelial layer was observed on the basal (Figures 4,5). Case was diagnosed as invasive papillary carcinoma by histopathological findings. In immunohistochemical staining, 3+ nuclear staining was obtained by estrogen and progesterone, whereas a negative result was obtained by cerB2.

Discussion

Papillary lesions of the breast account for less than 10% of benign breast lesions; while they were accounted from 0.5-2% of all malignant breast tumors (3, 4). Typically, it was seen more commonly in elderly women. Similar to our case, it was mostly seen in postmenopausal women (1, 4). Patients presented with mass and 30% of patients presented with bloody nipple discharge (3). Our patient also presented with bloody nipple discharge and a mass. Fifty percent of papillary neoplasms were located in the central

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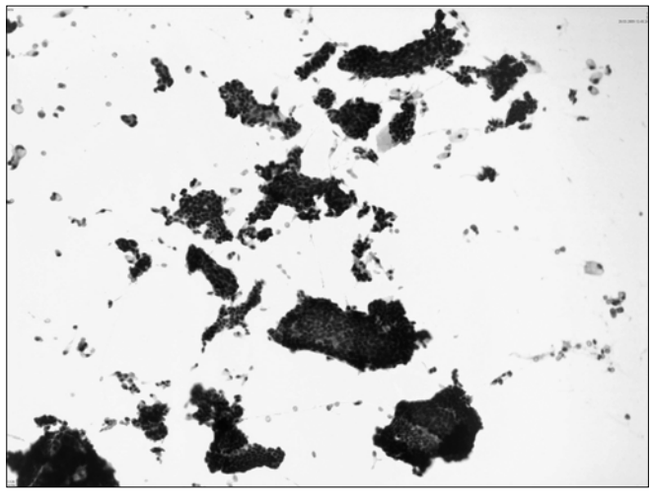

Figure 1. Hemosiderin-loaded histiocytes on cellular background, MGGx10

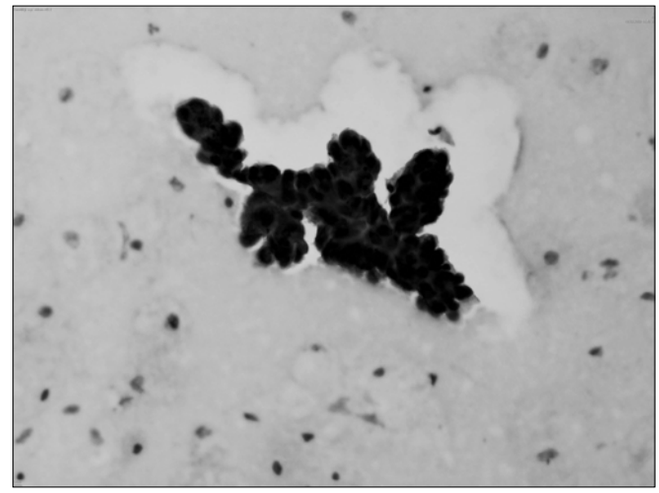

Figure 2. Papillary cell groups with nuclear hyperchromasia PAPx10

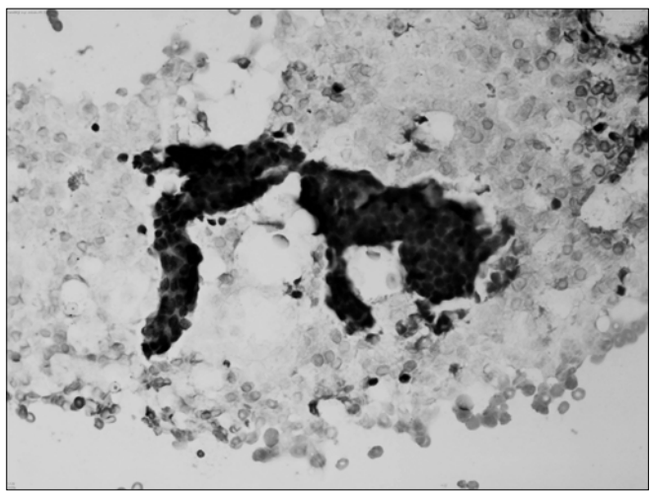

Figure 3. Papillary cell groups on hemorrhagic background PAPx10

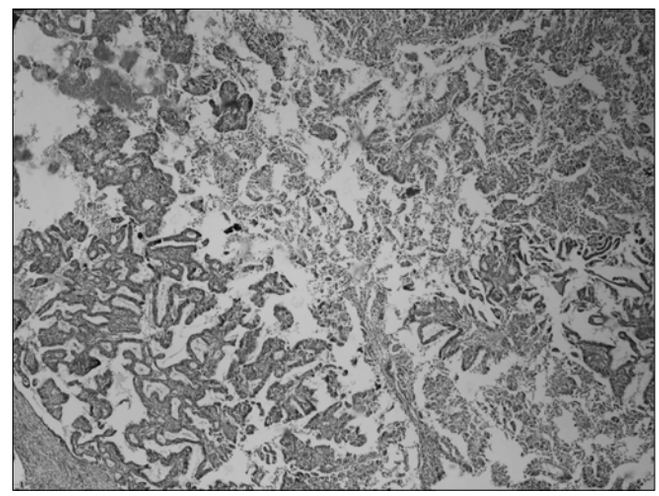

Figure 4. Invasive papillary carcinoma HEx20

region, as it was in our case (Table 1). Prognosis of papillary carcinoma was better when compared to invasive ductal carcinoma.

Papillary lesions of the breast have been evaluated in a wide spectrum ranging from benign papillomas to invasive papillary carcinomas (1, 2). Most papillary carcinomas are in situ lesions. The invasive component of papillary carcinomas could be not only papillary structures extending thorough fibrovascular core but it could also carry the features of invasive ductal carcinoma.

Cytological and histological differential diagnosis between benign and malignant papillary lesions of breast is difficult to establish. Cytological findings including hypercellularity, 3 dimensional cell groups which no longer display papillary structure, hemorrhagic background, hedge-like array of high columnar cells, scattered single cells, mild-moderate cellular atypia, regular or irregular contours, mixed cell type, single cell type, hemosiderin-loaded macrophages with foamy cytoplasm, apocrine metaplasia, mitosis, and calcification were used in the differential diagnosis of papillary lesions of breast (1, 2, 5, 6) (Table 2). Interestingly, in a study by Kumar et. al. (6), presence of eosinophilic bipolar cytoplasmic granules was reported in papillary carcinoma.

Table 1. Clinical findings in papillary lesions of breast

	Papilloma	***Tumor***
Incidence	Frequent	Rare
Age	Young, mean age 40 years	Elder, mean age 50-60 years
Nipple	Serous	Bloody
Size	<3cm	>3cm

In another study, Dawson et. al. (2) reviewed cytological criteria that should be used for discriminating papilloma and papillary carcinoma by comparing 29 fine needle aspiration cytology.

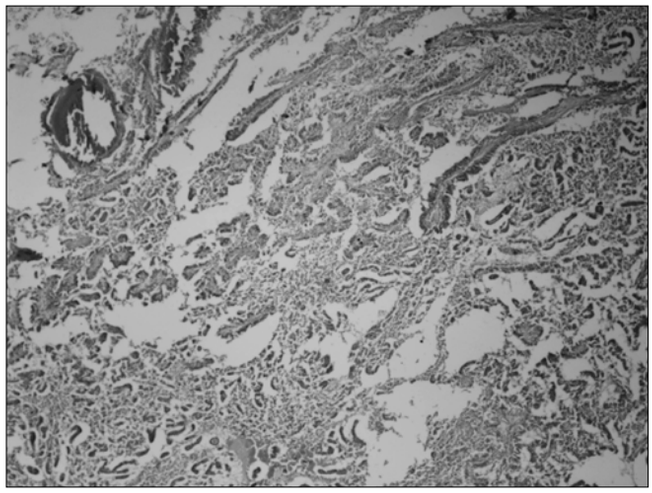

Figure 5. Papillary structures aligned around fibrovascular core HEx20

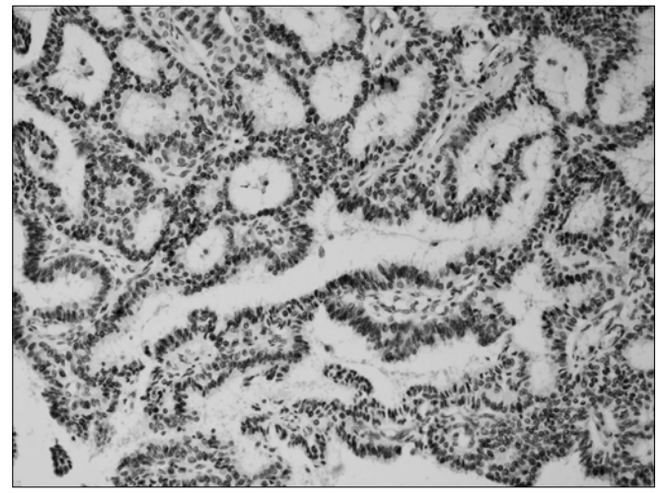

Figure 6. Immunohistochemical estrogen staininx40

Table 2. Cytological criteria those used in papillary lesions of breast

	In Favor of Papilloma	*In Favor of Tumor*	*In Our Case*
Hypercellularity		+	+
3 dimensional cells which no longer display papillary structure		+	+
Hemorrhagic background, necrosis		+	+
High columnar cells		+	
Scattered single cells		+	+
Mixed cell type	+		+
Single cell type		+	
Apocrine metaplasia	+		
Mild-moderate cellular atypia		+	+
Regular contour	+		
Irregular contour		+	+
Macrophages in background	+		
Mitosis		+	
Calcification		+	

Among of these, there was 7 intracystic papillary carcinoma, 6 invasive papillary carcinoma, and 17 intraductal papilloma. All cases underwent evaluation regarding cellularity, single epithelial cell, atypia, and papillary structures. Severely increased cellularity was found in 10 of 12 carcinomas and in 4 of 17 papilloma. Scattered single cell was found in 5 of 12 carcinomas and in 2 of 17 papilloma. There was mild-moderate atypia in most of the cases. Apocrine metaplasia, cells with foamy cytoplasm, and bipolar cells were observed in the background of 9 papilloma. No apocrine metaplasia was seen in any papillary carcinoma in this study. In the discrimination of papillary carcinoma from papilloma, absence of benign cells such as nuclear hyperchromasia, increase in arrangement, and apocrine metaplasia in the background was stated as diagnostic clues (2). In our case, there were nuclear hyperchromasia, single columnar cells, papillary structures, and increased cellullarity, but not apocrine metaplasia (Table 2).

In a study (5) by Simsir et. al., evaluated 70 cases which were consisted of 46 benign (23 intraductal papilloma, 6 intraductal papillomatosis, 11 fibrocystic changes, 6 fibroadenoma) and 24 malignant cases (1 low-grade phyllodes tumor, 23 ductal carcinoma in situ and invasive carcinoma). In this study, it was found that the criteria which show statistical significance between papilloma and carcinoma were cellularity, cellular atypia, and presence of single columnar cells. In the present case, a FNAC showed abundant cells, cell groups with pleomorphism, and columnar cells which were occasionally forms papillary structures and scattered as single cells in some situations. Due to diagnostic difficulties which could be faced in a FNAC, those criteria should be used in differential diagnosis in conjunction with what is presented in literature.

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