Received: October 2017
Accepted: January 2018

Microinvasive Papillary carcinoma of the breast with mucinous differentiation and high grade ductal carcinoma in situ: A case report study

Mazaher Ramezani[1], Farhad Amirian[1], Kowsar Badfar[1], Kaivan Mohammadi[1], Farhad Kavousi[1], Masoud Sadeghi[2*]

1. Molecular Pathology Research Center, Emam Reza Hospital, Kermanshah University of Medical Sciences, Kermanshah, Iran.
2. Medical Biology Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran.

***Corresponding Author:**
Masoud Sadeghi,
Medical Biology Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran.
Tel: (+98)918 596 0644
Email address:
Sadeghi_mbrc@yahoo.com

BCCR
2017; 9(3): 46-49
www.bccrjournal.com

ABSTRACT

A 35-year-old woman had a history of left breast mass without pain, discharge or weight loss. Fine needle aspiration noticed papillary carcinoma. Frozen section diagnosis was invasive carcinoma with papillary feature and free marked margin. Permanent determination on May 4, 2017, showed microinvasive papillary carcinoma with ductal carcinoma in situ, high grade, and mucinous carcinoma. The tumor didn't have frank invasion and metastasis. In conclusion, microinvasive papillary carcinoma is a tumor with minimal intrusion and low axillary lymph node metastasis that can combine with mucinous differentiation and/or ductal carcinoma in situ component and occur in lower ages.

Keywords: Papillary carcinoma, Breast, Mucin, Ductal carcinoma in situ, Case report

INTRODUCTION:

Papillary carcinoma of the breast constitutes about 0.5% of all newly diagnosed cases of breast cancer[1]. Macroscopically, the papillary carcinomas are well-circumscribed and they usually contain hemorrhagic and cystic components[2]. Invasive papillary carcinoma of the breast is a rare form of breast malignancy[3]. Distinction of invasive papillary carcinoma from non-invasive forms is important, as each entity carries a unique prognosis[4]. Immunohistochemistry (IHC) is very useful in the evaluation of invasion[5]. Among myoepithelial markers, smooth muscle myosin heavy chain and P63 are specific; for example, P63 is a special myoepithelial marker which stains the cell nucleus only[6]. Microinvasive breast carcinoma has a good prognosis but specific definitions varied in the past, making the clinical significance of microinvasive carcinoma a subject of debate[7].

Herein, we have reported the first case of microinvasive papillary carcinoma with mucinous differentiation and ductal carcinoma in situ component.

CASE REPORT:

A 35-year-old single housewife was admitted to surgery ward on April 12, 2017, with the history of left breast mass since three months ago. There was no pain, discharge or weight loss. There was no significant past medical or drug history. Open cholecystectomy had been done ten years before. Physical examination was unremarkable except for left breast mass. Considering lab data, hemoglobin level was 11.7 gr/dl. Fine needle aspiration revealed a papillary malignancy. The patient underwent incomplete left breast mastectomy and axillary lymphadenectomy on April 13, 2017. The specimen was sent to the pathology department for frozen section. The gross consisted of a piece of fibro-fatty tissue measuring 10*8*4 cm with tan/red semi-firm gelatinous infiltrative mass, measuring up to 4.3 cm.

Frozen section diagnosis was invasive carcinoma with papillary feature and free marked margin. Permanent diagnosis on May 4, 2017, showed microinvasive papillary carcinoma (**Figure 1**) with ductal carcinoma in situ, high grade and mucinous differentiation (mucinous car-

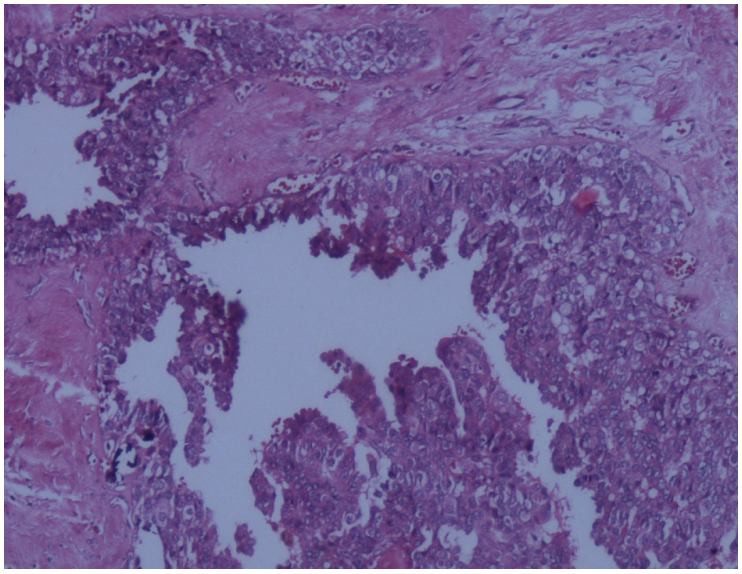

Figure 1. Microinvasive papillary carcinoma (Hematoxylin-Eosin staining, x100)

cinoma) (**Figure 2**). We found the in situ component in 80% of the surface area, and mucinous differentiation (carcinoma) in 20% of the surface area. However, the vascular and perineural invasion was not present. The tumor's greatest diameter was 4.3 cm with free all surgical margins and two isolated lymph nodes. Estrogen receptor (ER), progesterone receptor (PR), P53, androgen receptor (AR), and Epithelial membrane antigen (EMA) were positive and also the human epidermal growth factor receptor 2 (HER2) was intermediate positive (HER2 2+).

DISCUSSION:

The present study is a report on a micro-invasive papillary carcinoma in a 35-year-old female with mucinous differentiation and ductal carcinoma in situ component. Papillary carcinoma of the breast constitutes 0.5% to 1% of all breast malignancies and is localized or diffuse[1,8,9]. Microinvasive breast carcinoma is defined as an invasive carcinoma of the breast with no invasive focus, measuring more than 1 mm[10]. It is associated with a low rate of lymph node metastases[11]. The overall incidence of invasive papillary carcinomas is rare, accounting for less than 1-2% of invasive breast cancers. They are mainly seen in women after menopause and are unique in men[5]. In invasive papillary carcinomas, more than 75% of the cases include ductal carcinoma in situ component[3]. Invasive papillary carcinoma accounts for about 0.5 to 2 percent of all diagnosed invasive breast tumors and is mainly seen in older adults than the usual forms of breast cancers in the seventh decade of life or later[3]. Based on our knowledge, there was no report about microinvasive papillary carcinoma in the English literature.

A case was reported of a solid variant of infiltrating papillary carcinoma of the breast with mucinous differentiation in a 74-year-old female. Macroscopically, the tumor was solid, lobular, and 4.5 cm in diameter[12]. Mucinous differentiation may be seen in some invasive papillary carcinomas of the breast[13]. Although invasive papillary carcinoma of the breast is known as a less aggressive tumor, its presentation may be associated with metastasis and mucin production, unlike non-mucinous primary tumor[14]. Bhosale et al[5]. reported about a 55-year-old woman with invasive papillary breast carcinoma whose tumor size was 3 cm and eight excised

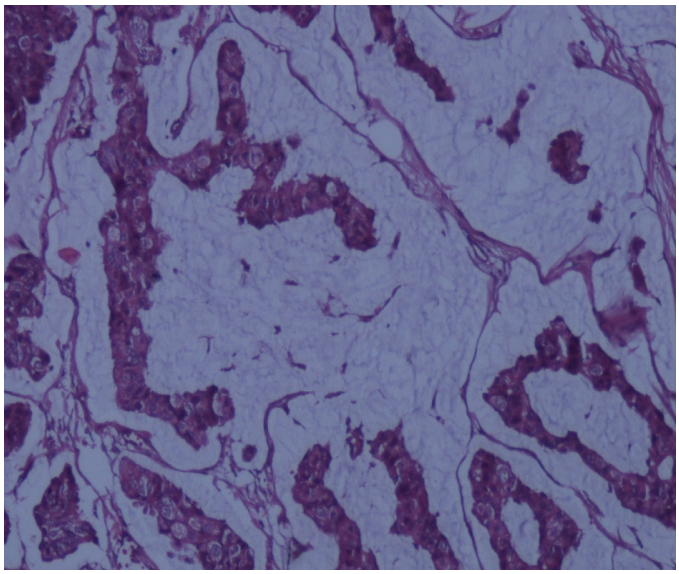

Figure 2. Mucinous carcinoma (Hematoxylin-Eosin staining, x100)

axillary lymph nodes were negative for malignant cells. In the present study, the patient's tumor size was 4.3 cm without axillary lymph node metastasis and invasion and, she was at a young age (35 years).

CONCLUSION:

Microinvasive papillary carcinoma is a tumor with minimal invasion and low axillary lymph node metastasis. This tumor can combine to mucinous differentiation and/or ductal carcinoma in situ component and occur at younger ages. The pathologists must be aware of this entity and consider it in the differential diagnosis of any tumor with papillary features, mucin production or In Situ Component in a young patient.

REFERENCES:

1. Pal SK, Lau SK, Kruper L, Nwoye U, Garberoglio C, Gupta RK, et al. Papillary carcinoma of the breast: an overview. Breast Cancer Res Treat. 2010;122(3):637-45.
2. J B L, Kini RG, Amber S. Invasive (solid) Papillary Carcinoma of the Breast: A Report of Two Cases. J Clin Diagn Res. 2013;7(6):1150-1.
3. Elverici E, Barça AN, Türksoy O, Araz L, Yüksel E. Bilateral invasive papillary carcinoma of the breast. Clin Imaging. 2007;31(6):419–21.
4. Louwman MW, Vriezen M, van Beek MW, Nolthenius-Puylaert MC, van der Sangen MJ, Roumen RM, et al. Uncommon breast tumors in perspective: Incidence, treatment and survival in the Netherlands. Int J Cancer. 2007;121(1):127–35.
5. Bhosale SJ, Kshirsagar AY, Sulhyan SR, Jagtap SV, Nikam YP. Invasive Papillary Breast Carcinoma. Case Rep Oncol. 2010;3(3):410-5.
6. Pervez S, Khan H. Infiltrating ductal carcinoma breast with central necrosis closely mimicking ductal carcinoma in situ (comedo type): a case series. J Med Case Reports. 2007;1:83.
7. Padmore RF, Fowble B, Hoffman J, Rosser C, Hanlon A, Patchefsky AS. Microinvasive breast carcinoma: clinicopathologic analysis of a single institution experience. Cancer. 2000;88(6):1403-9.
8. ollins LC, Schnitt SJ. Papillary lesions of the breast: selected diagnostic and management issues. Histopathology. 2008;52(1):20–9.
9. Ueng SH, Mezzetti T, Tavassoli FA. Papillary neoplasms of the breast: a review. Arch Pathol Lab Med. 2009;133(6):893–907.
10. (American Joint Committee on Cancer) Cancer Staging Manual, 7th edition, Edge SB, Byrd DR, Compton CC, et al (Eds), Springer, New York 2010.
11. Ko BS, Lim WS, Kim HJ, Yu JH, Lee JW, Kwan SB, et al. Risk factor for axillary lymph node metastases in microinvasive breast cancer. Ann Surg Oncol. 2012;19(1):212-6.
12. Kostov M, Tasić-Dimov D, Milenković S, Dimić M, Petrović L, Mijović Z. [Solid papillary breast carcinoma with mucinous differentiation]. Vojnosanit Pregl. 2003;60(4):497-500.
13. Saremian J, Rosa M. Solid Papillary Carcinoma of the Breast: A Pathologically and Clinically Distinct Breast Tumor. Arch Pathol Lab Med. 2012;136(10):1308-11.
14. Ramezani M, Kavousi F, Afzali S, Sadeghi M. Invasive Papillary Carcinoma of the Breast Presenting after Metastatic Mucinous Adenocarcinoma: Report of a Rare Case. Am J Med Sci Med. 2017;5(1):20-2.