

## Case Report

# Invasive papillary ductal carcinoma of the breast – A rare case report


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## Abstract

Invasive papillary carcinoma (IPC) constitutes a distinct entity clinically and morphologically out of all mammary carcinoma. Invasive papillary carcinomas are low grade tumors originating from large or dilated ducts. They are composed of well-circumscribed solid nodules of monotonous neoplastic cells separated by a network of fibrovascular cores. IPC is an uncommon type of breast carcinoma and regardless of whether it is in-situ or invasive, it has excellent prognosis. Hence accurate histological diagnosis is essential.

## Key words

Invasive papillary carcinoma, Low grade tumors, Excellent prognosis.

## Introduction

Papillary lesions of the breast have been evaluated in a wide spectrum ranging from benign intra ductal papilloma (with or without atypia) to papillary carcinoma in situ and invasive papillary carcinoma [1]. Among this group of lesions, solid papillary carcinoma (SPC)

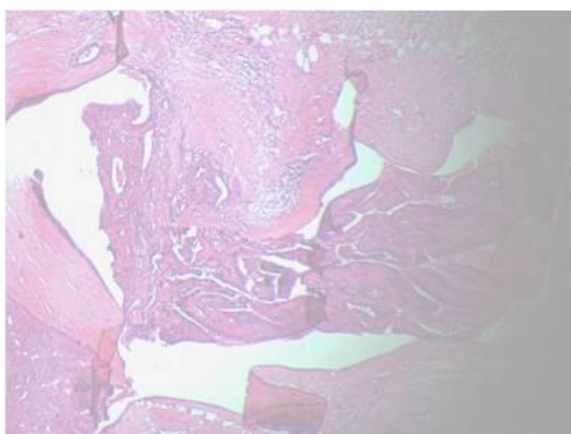
constitutes a distinct entity clinically and morphologically. Solid papillary carcinomas are low grade tumors originating from large or dilated ducts. They are composed of well-circumscribed solid nodules of monotonous neoplastic cells separated by a network of fibrovascular cores [2-5]. These lesions usually

present as subareolar mass and/or nipple discharge, most frequently in elderly women and represent less than 2% of breast carcinomas in females [6]. In this report, we have described clinical, cytological and histopathological findings of this rare entity.

### **Case report**

A 40-year-old woman presented with a mass in the upper internal quadrant of the right breast, without pain or nipple discharge. Physical examination revealed a 2 cm mass, non-well defined, fixed and firm, non-painful, and without skin changes. Mammography showed an oval opacity of the upper internal quadrant with no calcifications. Patient underwent lumpectomy of the right sided breast mass and the specimen was sent to histopathology laboratory. On histopathological examination, the section showed ductal cells in papillary pattern. Individual cells showed mild pleomorphism, hyper chromatism, high N: C ratio and prominent nucleoli. The tumour cells showed infiltration in the stroma with all anaplastic features. Final diagnosis was given as Invasive papillary ductal carcinoma of the right breast. (Microphotograph - 1, 2, 3)

**Microphotograph – 1:** Papillary structures aligned around fibrovascular core (H & E, 10X).

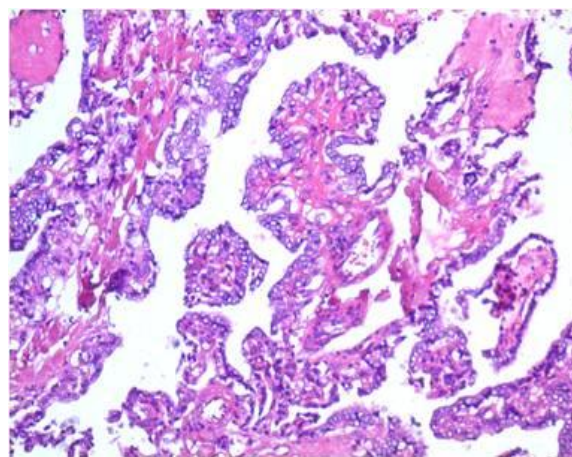


### **Discussion**

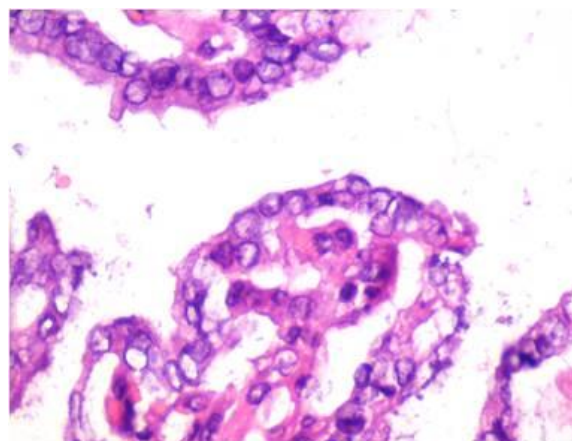
Papillary lesions of the breast account for less than 10% of benign breast lesions; while they were accounted from 0.5-2% of all malignant

breast tumors [7, 8]. Typically, it was seen more commonly in elderly women. Patients presented with mass and 30% of patients presented with bloody nipple discharge [7]. Prognosis of papillary carcinoma was better when compared to invasive ductal carcinoma.

**Microphotograph – 2:** Papillary fronds composed of central fibrovascular cores covered by epithelium (H & E, 20X).



**Microphotograph – 3:** Papillary fronds without myoepithelial cell layer (H & E, 40X).



However, occasionally this tumor can affect patients who are younger than 50 years [9, 10]. Our patient was also having papillary breast carcinoma at the age of 40 years. Rarely, SPC can occur in male patients [9]. Nearly 95% of cases are unilateral, and the majority of tumors arise in the central area of the breast [2, 11].

At the mammography, the intra cystic papillary carcinoma appears as a round, ovular, or lobulated opacity. The margins of the mass are usually circumscribed but may be obscured or indistinct by places testifying inflammation or invasion [12, 13]. There are no speculations. The differential diagnosis on mammographic appearance includes a hematoma, invasive ductal carcinoma, and colloid or medullar carcinoma, benign cyst, or adenofibroma [14].

Ultrasound with color Doppler is the most sensitive methodology for the evaluation of papillary breast lesions. Ultrasound may suggest the presence of a frond like mass within a dilated duct, a complex intra cystic lesion, or a homogeneous solid lesion.

Cytologically, fine-needle aspiration biopsies tend to be very cellular, consisting of small to large discohesive fragments of cells. Cytologic atypia is typically mild to moderate; however, more severe atypia may be seen. Grossly tumor size varies and ranges from less than 1 cm to 15 cm in the literature [2-4, 9]. Macroscopically, the tumors have a nodular configuration and are usually well circumscribed, soft masses [2, 9]. Microscopically it is distinguished by the papillary structural design: proliferation characterized by finger-like projections or fronds composed of central fibrovascular cores covered by epithelium, without myoepithelial cell layer (which differentiate between benign and malignant papillary lesion). It can be divided into invasive and non-invasive forms.

The differential diagnosis ranges from benign to malignant lesions including florid ductal hyperplasia, lobular neoplasia, intra-cystic papillary carcinoma (IPC), and ordinary low-nuclear-grade ductal carcinoma in situ (DCIS). In the absence of invasive carcinoma, SPCs have a favorable outcome. In cases associated with invasive carcinoma, the prognosis will depend upon the invasive component of the tumor [9]. In these cases, distant metastasis can occur without axillary lymph node involvement [2, 9].

Variable management strategies are considered when dealing with this rare form of breast cancer. Treatment options for the breast can involve breast conserving surgery in the form of wide local excision, with or without adjuvant RT, or mastectomy [15-17].

## Conclusion

In conclusion, IPC is an uncommon type of breast carcinoma and regardless of whether it is in-situ or invasive, it has excellent prognosis. Hence accurate histological diagnosis is essential.

## References

1. Reid-Nicholson MD, Tong G, Cangiarella JF, Moreira AL. Cytomorphologic features of papillary lesions of the male breast: a study of 11 cases. *Cancer*, 2006; 108: 222-30.
2. Maluf HM, Koerner FC. Solid papillary carcinoma of the breast: a form of intra ductal carcinoma with endocrine differentiation frequently associated with mucinous carcinoma. *Am J Surg Pathol.*, 1995; 19(11): 1237–1244.
3. Nassar H. Solid papillary carcinoma of the breast. *Pathol Case Rev.*, 2009; 14(4): 157–161.
4. Tsang WY, Chan JK. Endocrine ductal carcinoma in situ (E-DCIS) of the breast: a form of low-grade DCIS with distinctive clinicopathologic and biologic characteristics. *Am J Surg Pathol.*, 1996; 20(8): 921–943.
5. Collins LC, Carlo VP, Hwang H, Barry TS, Gown AM, Schnitt SJ. Intra cystic papillary carcinomas of the breast: a reevaluation using a panel of myoepithelial cell markers. *Am J Surg Pathol.*, 2006; 30(8): 1002–1007.
6. MacGrogan G, Moinfar F, Raju U. Intra ductal papillary neoplasms. In Tavassoli FA, Devilee P eds. *Pathology and Genetics of tumours of the Breast and Female Genital Organs* Lyon: IARC Press 2003, p. 76-80.

7. Masood S, Loya A, Khalbuss W. Is Core Needle Biopsy Superior to Fine- Needle Aspiration Biopsy in the Diagnosis of Papillary Breast Lesions? *Diagn Cytopathol.*, 2003; 28(3): 29-34.
8. Elverici E, Barca AN, Turksoy O, Araz L, Yuksel E. Bilateral invasive papillary carcinoma of the breast. *Clin Imaging*, 2007; 31: 419-21.
9. Nassar H, Qureshi H, Volkanadsay N, Visscher D. Clinicopathologic analysis of solid papillary carcinoma of the breast and associated invasive carcinomas. *Am J Surg Pathol.*, 2006; 30(4): 501–507.
10. Otsuki Y, Yamada M, Shimizu S, et al. Solid-papillary carcinoma of the breast: clinicopathological study of 20 cases. *Pathol Int.*, 2007; 57(7): 421–429.
11. Yamada M, Otsuki Y, Shimizu S, Tanioka F, Ogawa H, Kobayashi H. Cytological study of 20 cases of solid-papillary carcinoma of the breast. *Diagn Cytopathol.*, 2007; 35(7): 417–422.
12. M. Muttarak, A. Samwangprasert, B. Chaiwun. Intra cystic papillary carcinoma of the breast. *Biomedical Imaging and Intervention Journal*, 2005; 1(1).
13. J. Levêque, E. Watier, T. Lesimple, F. Goyat, J.Y. Grall. Carcinome mammaire intrakystique: à propos d'une observation. *Journal de Gynecologie Obstetrique et Biologie de la Reproduction*, 1998; 27(3): 329–332.
14. D. Ravichandran, C. Rubin, N. J. Carty, R. K. Al-Talib, G. T. Royle, I. Taylor. Cystic carcinoma of the breast: a trap for the unwary. *Annals of the Royal College of Surgeons of England*, 1995; 77(2): 123–126.
15. Solorzano CC, Middleton LP, Hunt KK, Mirza N, Meric F, Kuerer HM, Ross MI, Ames FC, Feig BW, Pollock RE, Singletary SE, Babiera G. Treatment and outcome of patients with intra cystic papillary carcinoma of the breast. *Am J Surg*, 2002; 184(4): 364–8.
16. Prajapati ZN, Rathod GB, Gonsai RN, Kadam TB. Matrix producing mammary carcinoma – A rare breast tumour. *International Journal of Current Research and Review*, 2012; 4(15): 62-65.
17. Rathod GB, Rahul Goyal, Rippal kumar Bhimani, Goswami SS. Metaplastic carcinoma of breast in 65 years old female - A case report. *Medical Science*, 2014; 10(39): 77-81.