



ORIGINAL RESEARCH PAPER

General Surgery

CLINICO PATHOLOGICAL ANALYSIS ON PAPILLARY CARCINOMA BREAST

KEY WORDS: Papillary carcinoma breast, solid papillary carcinoma, invasive papillary carcinoma, papillary lesion

Prof. Dr. P.Thangamani

M.S., FMAS., FAES., FICS Professor, Institute of General Surgery, Madras Medical College, Chennai, Tamil Nadu, India.

Dr. K. Anandan

M.S. Assistant Professor, Institute of General Surgery, Madras Medical College, Chennai, Tamil Nadu, India.

Dr. Anto Tiju G*

M.S. Post Graduate, MS General Surgery, Institute of General Surgery, Madras Medical College, Chennai, Tamil Nadu, India. *Corresponding Author

ABSTRACT

Background : Papillary carcinoma of breast is rare and account for approximately 1-2% of newly diagnosed cases of breast cancers. The common age group of presentation is 6-7th decade. These tumours usually present with a painless retroareolar swelling associated with bloody nipple discharge in 50% cases. **Cases :** Case 1) 57 year old most menopausal woman presented with huge ulcerative lump in right breast over a period of 1 year. After confirming diagnosis with incisional biopsy, patient was proceeded with Neoadjuvant Chemotherapy (NACT) followed by Right MRM with SSG. Case 2) 66 year old male patient came with complaints of bloody discharge from nipple for past 1 year. A small subcentimetric lump present in retroareolar region on left breast was present, on which USG guided CNB revealed Invasive Ductal Carcinoma. Patient was proceeded with Left MRM. Case 3) 65 year old male patient presented with painless lump in left breast for 3 months. Clinical examination revealed a 1*2 cm lump in left breast with a single mobile ipsilateral axillary node. Image guided CNB revealed Invasive Papillary carcinoma. Patient was taken up for upfront Left MRM. All 3 patients are on regular follow-up for more than a year, and no recurrence is noted on followup.

INTRODUCTION

Papillary carcinoma of breast accounts for 0.5% of all newly diagnosed instances of breast cancer. Unless coupled with invasion, solid papillary carcinomas have indolent clinical behavior. This case series discusses the prevalence, various appearances, pathology, and follow-up of patients with papillary cancer of the breast.

CASE REPORTS

CASE 1

A 57 year old postmenopausal female presented with complaints of lump in right breast for 1 year. Examination revealed huge 14*16cm lump in right breast with ulceration. Two repeated core needle biopsies revealed benign phyllodes tumour, despite the clinical suspicion of malignancy. Incision biopsy revealed invasive breast carcinoma. After completion of Neo Adjuvant Chemotherapy (NACT), patient was proceeded with right Modified Radical Mastectomy (MRM) with SSG after confirming deeper margin status by frozen section.



Figure 1) Huge ulcerative lump in 57 year old, on repeated CNB revealed Phyllodes Tumour

Figure 2) Post-operative picture with SSG after confirming margin status

Postoperative Histopathological Examination revealed Invasive Papillary Carcinoma Grade II with DCIS component <5%, all 17 lymph nodes negative for malignancy. pT4b N0 M0. Patient was represented in tumour board and was adviced adjuvant chemotherapy, which patient had completely undergone. There is no recurrence on follow-up for 2 years

CASE 2

A 66 year old gentleman came with complaints of bloody discharge in left nipple for 1 year. On examination, 1*1 cm lump in retroareolar region of left breast. Examination of left axilla, right breast, right axilla were clinically normal. Nipple discharge for cytology revealed hemorrhagic material and was suggestive of malignancy. Image guided core needle biopsy from left breast lump revealed Invasive Ductal Carcinoma. Patient was proceeded with left Modified Radical Mastectomy (MRM). Postoperative Histopathological examination revealed Encapsulated Papillary Carcinoma with Invasion, ER,PR 90% positivity, pT1 N0 M0 Adjuvant chemotherapy, radiotherapy were not indicated. Patient is on Tablet Tamoxifen for 2 years, since post-op, no recurrence reported.



Figure 3) Papillary carcinoma in a 66 year old presenting with bloody nipple discharge

CASE 3

A 65 year old gentleman presented with complaints of slow growing lump in left breast for 3 months. Clinical examination revealed a 1*2 cm firm lesion in sub areolar region of left breast with 1*1cm discrete, mobile, nontender firm node in left axilla. Core Needle Biopsy from breast lesion revealed Invasive Papillary Carcinoma. Patient was taken up for upfront left Modified Radical Mastectomy. Postoperative Histopathological examination revealed Invasive Papillary Carcinoma Grade 1 with all 18 nodes negative for malignancy pT₂N₀M₀. Patient is on adjuvant chemotherapy for 1 year, no

recurrence on follow-up has been reported.

DISCUSSION

Solid Papillary Carcinoma is an uncommon breast lesion and constitutes approximately 1% of breast tumours^(2,4,7,11). It is known to arise from the ducts and is considered a variant of ductal carcinoma in situ (DCIS) by some authors. The mean age of presentation is the 7th decade of life^(3,4,8,9,11); however, it can also affect younger women. About 95% of the tumours are unilateral, and approximately 50% arise in the retro-areolar or the subareolar regions^(1,3,4,5); hence, most cases present as a centrally located breast mass with nipple discharge.

BENIGN

- Intraductal Papilloma (solitary)
- Intraductal papillomatosis

ATYPICAL

- Papilloma with atypical hyperplasia
- Papilloma with DCIS

MALIGNANT – NON-INVASIVE

- Papillary Ductal carcinoma in situ
- Encapsulated Papillary Carcinoma
- Solid Papillary Carcinoma

MALIGNANT – INVASIVE

- Invasive Papillary Carcinoma

2 Types Of Invasion

1. Papillary carcinoma associated with conventional type of Invasive Carcinoma^(2,8,7,12), where the invasive component may be composed of a pure Invasive Ductal Carcinoma (IDC), or a mixed morphology composed of mucinous, neuroendocrine-like, IDC, or uncommonly, lobular and tubular subtypes.

2. Predominant papillary carcinoma but with features of stromal invasion, most commonly associated with stromal desmoplasia^(1,8,10)

- Loss of myoepithelial layer highlighted by the immunohistochemical loss of p63 is necessary to distinguish it from Ductal Carcinoma In-Situ (DCIS) and may also confirm areas of doubtful invasion
- Papillary Carcinoma of breast strongly mimics
- Lobular Carcinoma In-Situ (LCIS)
- Atypical ductal epithelial hyperplasia
- Lobular hyperplasia

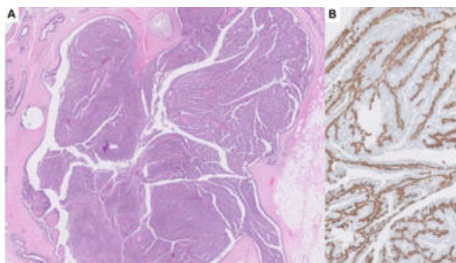


Figure 4 A) An intraductal papilloma with characteristic finger-like fronds as well as a component of usual ductal hyperplasia forming a more solid area of proliferation
Figure 4 B) IHC for p63/CK14 double stain highlights the myoepithelial cells that are subjacent to the negative staining epithelial cells lining the papillae

All three patients presented with painless breast lump around mean age of 60 as mentioned by Lewis JT et al⁽⁶⁾. One patient presented with bloody nipple discharge, which is the most common presenting complaint in papillary carcinoma breast^(4,5,12,13), whereas another patient was twice biopsy proven phyllodes tumour. Sonographically all 3 lesions presented as homogeneous solid lesions. Surgical excision is recommended for papillary lesions following an image-

guided core needle biopsy, specially to rule out malignancy when atypia is diagnosed, which has been emphasized in many studies^(12,13).

Conclusion

Solid papillary carcinoma of breast is seen in elderly with limited lymph node metastasis with a favourable prognosis. It has a morphological overlap with various benign and malignant lesions. It requires a thorough clinical, radiological and immunohistochemical workup to reach a definite diagnosis so that appropriate therapy can be administered for maximum patient benefit.

REFERENCES

1. WHO Classification of Tumours Editorial Board. Breast tumours. WHO classification of tumour series, 5th ed., vol. 2. Lyon (France): International Agency for Research on Cancer; 2019. occasional nuclear grooves. The nuclei of many tumor cells are aligned towards the apical/luminal aspect ("reversed polarity") (A). Immunohistochemistry for IDH2 R172S shows positive staining in tumor cells (B).
2. Murad TM, Contesso G, Mouriesse H. Papillary tumors of large lactiferous ducts. *Cancer*. 1981;48:122-33.
3. Ohuchi N, Abe R, Kasai M. Possible cancerous change of intraductal papillomas of the breast. A 3-D reconstruction study of 25 cases. *Cancer*. 1984;54:605-11.
4. Ali-Fehmi R, Carolin K, Wallis T, Visscher DW. Clinicopathologic analysis of breast lesions associated with multiple papillomas. *Hum Pathol*. 2003;34:234-9.
5. Lewis JT, Hartmann LC, Vierkant RA, Maloney SD, Shane Pankratz V, Allers TM, et al. An analysis of breast cancer risk in women with single, multiple, and atypical papilloma. *Am J Surg Pathol*. 2006;30:665-72.
6. Flint A, Oberman HA. Infarction and squamous metaplasia of intraductal papilloma: a benign breast lesion that may simulate carcinoma. *Hum Pathol*. 1984;15:764-7.
7. Tan PH, Aw MY, Yip G, Bay BH, Sii LH, Murugaya S, et al. Cytokeratins in papillary lesions of the breast: is there a role in distinguishing intraductal papilloma from papillary ductal carcinoma in situ? *Am J Surg Pathol*. 2005;29:625-32.
8. Ichihara S, Fujimoto T, Hashimoto K, Moritani S, Hasegawa M, Yokoi T. Double immunostaining with p63 and high-molecular-weight cytokeratins distinguishes borderline papillary lesions of the breast. *Pathol Int*. 2007;57:126-32.
9. Grin A, O'Malley FP, Mulligan AM. Cytokeratin 5 and estrogen receptor immunohistochemistry as a useful adjunct in identifying atypical papillary lesions on breast needle core biopsy. *Am J Surg Pathol*. 2009;33:1615-23.
10. Page DL, Salhany KE, Jensen RA, Dupont WD. Subsequent breast carcinoma risk after biopsy with atypia in a breast papilloma. *Cancer*. 1996;78:258-66.
11. Jiao YF, Nakamura SI, Oikawa T, Sugai T, Uesugi N. Sebaceous gland metaplasia in intraductal papilloma of the breast. *Virchows Arch*. 2001;438:505-8.
12. Carter D. Intraductal papillary tumors of the breast: a study of 78 cases. *Cancer*. 1977;39:1689-92.
13. Papotti M, Gugliotta P, Ghiringhello B, Bussolati G. Association of breast carcinoma and multiple intraductal papillomas: an histological and immunohistochemical investigation. *Histo-pathology*. 1984;8:963-75.