

Intra-cystic (Encapsulated) Papillary Carcinoma of Breast: A Case Report and Review of Literature

Sachin S Kadam ^{1*}, Hollies Desouza ² and Tejaswini Kadam ³

¹Dept of Surgical Oncology, Currae Cancer & Multispeciality Hospital, Mumbai, India.

²Dept of Medical Oncology, Grace Oncology Clinic & Vedant Cancer Hospital, Mumbai, India.

³Dept of Ophthalmology, Conwest & Jain Super speciality Eye Hospital, Mumbai, India.

***Corresponding Author:** Sachin S Kadam, Dept of Surgical Oncology, Currae Cancer & Multispecialty Hospital, Mumbai, India.

Received date: August 30, 2021; **Accepted Date:** September 02, 2021; **Published Date:** September 06, 2021

Citation: Sachin S Kadam, Hollies Desouza and Tejaswini Kadam (2021) Intra-cystic (Encapsulated) Papillary Carcinoma of Breast: A Case Report and Review of Literature, *Clinical Cancer and Oncology Research*. 1(3). DOI: [10.31579/CCOR-2021/015](https://doi.org/10.31579/CCOR-2021/015)

Copyright: ©2021, Sachin S Kadam, This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Papillary breast cancer is a very rare type of invasive ductal breast cancer that accounts for less than 1% of all breast cancers. A 62 year old lady with Eastern Co-operative Oncology Group Performance Status 1 (ECOG PS- I) without any co-morbidity presented with serous nipple discharge from the right breast for the last 6 months.

Keywords: papillary carcinoma of breast, breast cancer, DCIS

Introduction

Papillary Breast Lesions (PBL) are considered as rarely encountered phenomenon of all breast lesions [1]. They express less than 2% of all breast cancers and less than 10% of all benign lesions [2]. They account for less than 3% of all breast tumors and comprises a wide range of proliferative breast diseases [3, 4]. These lesions poses a diagnostic challenge to the treating team due to their special characteristics. Most of the lesions manifest as intraductal lesions however papillary features have been noted in some of the invasive cancers [5]. PBL represents both, benign and malignant lesions which includes intraductal papilloma (IDP), IDP with atypia or ductal carcinoma in situ (DCIS), papillary DCIS, encapsulated papillary carcinoma (EPC), solid papillary carcinoma (SPC), invasive papillary carcinoma (IPC) and invasive micropapillary carcinoma (IMPC) [6]. Benign intraductal papillomas are the most common PBLs with other names as central or solitary papillomas [7]. It's very important to differentiate and diagnose benign and malignant papillary lesions as their management differs [8]. Papillary lesions are present in atypical ductal hyperplasia and DCIS lesions [9]. IPC and IMPC are very rare entities. Malignant lesions are usually low nuclear grade and manifest in an in situ manner [10]. Most of the patients are asymptomatic and it's difficult to detect and diagnose PBL in these patients [11]. Most commonly they present with palpable breast lesion with or without nipple discharge. We are reporting a case of 62 year old

lady who presented with nipple discharge without palpable lesion and after radiographic and pathologic investigations, diagnosed as intracystic papillary carcinoma of breast.

Case Report

A 62 year old lady with Eastern Co-operative Oncology Group Performance Status I (ECOG PS- I) without any co-morbidity presented with serous nipple discharge from the right breast for the last 6 months. Patient underwent evaluation at a general surgeon's clinic. She had been advised bilateral sono-mammography which was suggestive of a breast lesion of size 1x1cm located at 5 o'clock position at lower and inner quadrant of right breast of BIRADS III grade with another lesion of size 0.4x0.5cm at retro-areolar location with BIRADS II grade. The treating surgeon decided no active surgical intervention with close follow up. She had been called after 3 months for follow up evaluation. Nipple discharge was persistent. She had been advised ultrasound guided core needle biopsy and which was suggestive of papillary carcinoma of breast. In view of carcinoma of breast, PET (Positron Emission Tomography) had been advised. PET was suggestive of same breast lesions as described in sono-mammography without any FDG avid uptake in the breast lesion and no lymphadenopathy in the ipsilateral axilla with no distant metastasis [Figure 1]. With these reports she had been referred to our clinic.

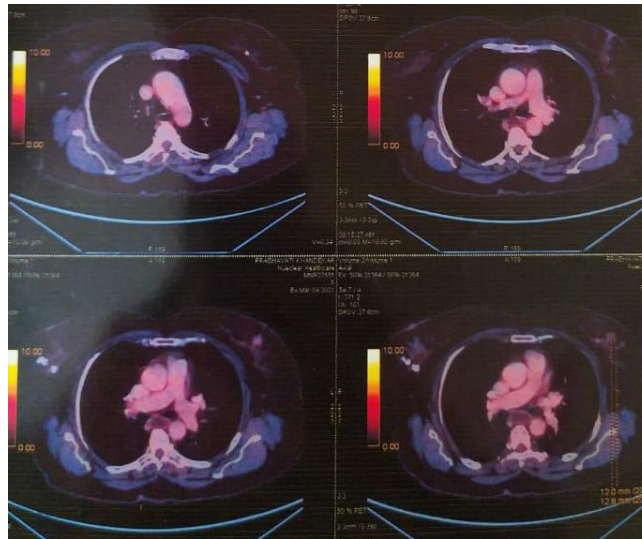


Figure 1: PET CT images of right breast lesion

On clinical examination, there was no palpable breast lesion or axillary lymph nodes except serous nipple discharge on squeezing the nipple. Contralateral breast and axilla were normal and rest of the systemic examination was unremarkable. Case was discussed in our institutional multidisciplinary tumor board and decision was to plan for Breast Conserving Surgery with sentinel axillary lymph node biopsy. Patient and her relatives were explained about the pros and cons of Modified Radical Mastectomy (MRM) versus Breast Conserving Surgery (BCS). They opted for MRM considering chances of recurrences in future. Patient underwent MRM and discharged on 1st postoperative day. Final histopathology report showed a circumscribed nodule with fibrous capsule which was suggestive of intra-cystic papillary carcinoma of breast

without invasion with tumor size measuring 1.5x1cm [Figure 2]. Total 12 lymph nodes were retrieved and all were free from metastasis. Immunohistochemistry was suggestive of estrogen and progesterone receptor positive with HER2Neu receptor negative. As per AJCC 8th edition, it was Stage IA (p T1 N0 M0 / ER + / HER2 Neu - /LVI & PNI – absent). Case was re-discussed in our tumor board for adjuvant treatment. She had been advised only hormonal therapy in view of non-invasive papillary carcinoma without nodal spread. She had been started on tamoxifen 20mg. She is in periodic follow up with us as per our institutional follow up protocol and after one year of completion of her treatment, she is disease free.

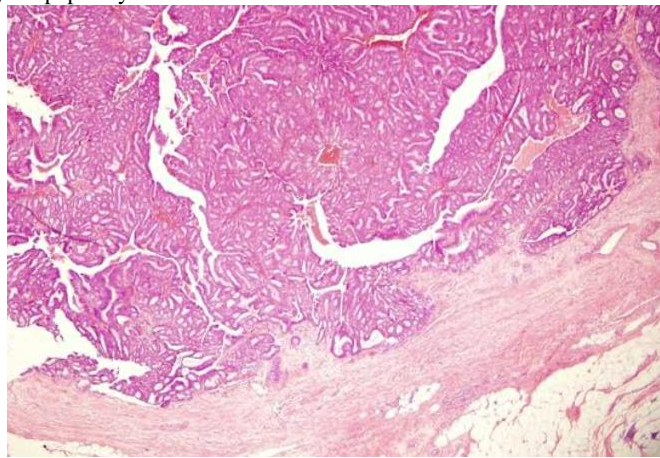


Figure 2: Microscopic examination of EPC

Discussion

The most common presentation of this carcinoma is with circumscribed friable mass within a cystic cavity, hence it is named as intra-cystic papillary carcinoma. It is also called as encapsulated papillary carcinoma. It occurs most commonly in elderly population with an age range of 60-65 years [12]. It accounts for 0.5-1 % of all breast cancers [13]. Traditionally they have been classified as non-invasive tumors however, due to absence of myoepithelial cells in the tumor–stromal interface, these are considered as invasive tumors supported by recent literature [14]. In 2012 the WHO classified encapsulated papillary carcinoma as a subgroup of papillary breast lesions and a type of breast papillary carcinoma [15].

The size of the tumor ranges from 1–10 cm [16]. The classification of papillary lesions is as follows

Benign papillary lesions

1. Intraductal papilloma (solitary)
 2. Intraductal papillomatosis
- Atypical papillary lesions
1. Intraductal papilloma with atypical hyperplasia
 2. Papilloma with DCIS

Malignant papillary lesions

Noninvasive:

1. Papillary ductal carcinoma in situ
2. Encapsulated papillary carcinoma
3. Solid papillary carcinoma

Invasive:

1. Invasive papillary carcinoma
2. Invasive micropapillary carcinoma

Their clinical presentation is with nipple discharge, a palpable mass or an asymmetric lesion [17]. Ultrasound or mammogram are not diagnostic for these types of cancer however, they can help in planning the treatment [18]. Mammography has a sensitivity and specificity of 78% and these increase to 91% when ultrasound is used along with it [19]. MRI findings have not been well documented for these cancers however, it has proven helpful for detection of DCIS around the lesion. In the index case, sonomammography and PET-CT was done and both were non diagnostic. Histopathologically, their presentation is with absence of myoepithelial cells in the periphery of the lesion and a fibrous capsule which separates it from the rest of the stroma [10]. The index case was diagnosed only after core needle biopsy. Encapsulated Papillary Carcinoma (EPC) can be associated with DCIS or invasive ductal carcinoma [15]. In the present case, it was a non-invasive lesion and EPC have an excellent prognosis in the absence of invasive elements with a mean survival rate of 60–95% for in situ cancer [17]. The frequency of lymph node involvement is up to 11%. The frequency of distant recurrence is up to 4%, whereas frequency of local recurrence goes up to 70% [16].

The standard and documented treatment for EPC is wide local surgical excision with negative surgical margins to avoid unnecessary mastectomy. But, in the present case, consent was given for mastectomy, hence we proceeded with MRM. When EPC is associated with DCIS or an invasive component, axillary lymph node dissection is considered along with consideration of adjuvant treatment. [17]. we did level II axillary lymph node clearance. Hormonal therapy is considered useful adjuvant treatment as EPC has a high frequency of positive estrogen and progesterone receptors. The index case had been started on adjuvant hormonal therapy. The role of radiotherapy still remains unclear.

Conclusion

Encapsulated papillary carcinoma is a rare breast carcinoma. Lack of literature support and knowledge may lead to over diagnosis and over treatment. It is difficult to differentiate between in situ and invasive cancer. It is team work of pathologist, radiologist and oncologist in diagnosing this difficult and rare case.

References

1. Kuehner G, Darbinian J, Habel L et al. (2019) Benign papillary breast mass lesions: favorable outcomes with surgical excision or imaging surveillance. *Ann. Surg. Oncol.* 26(6), 1695–1703.
2. Bloom C. (2015) Breast papillomas: a comprehensive review. *J. Diagn. Med. Sonogr.* 31, 282–289.
3. Brookes MJ, Bourke AG. (2008) Radiological appearances of papillary breast lesions. *Clin. Radiol.* 63(11), 1265–1273.
4. Chen P, Zhou D, Wang C, Ye G, Pan R, Zhu L. (2019) Treatment and outcome of 341 papillary breast lesions. *World J. Surg.* 43(10), 2477–2482.
5. Wei S. (2016) Papillary lesions of the breast: an update. *Arch. Pathol. Lab. Med.* 140(7), 628–643.
6. Basavaiah SH, Minal J, Sreeram S et al. (2016) Diagnostic pitfalls in papillary lesions of the breast: experience from a single tertiary care center. *J Clin. Diagn. Res.* 10(8), EC18–EC21.
7. Rakha EA, Ellis IO. (2018) Diagnostic challenges in papillary lesions of the breast. *Pathology* 50(1), 100–110.
8. Jorns JM. (2016) Papillary lesions of the breast: a practical approach to diagnosis. *Arch. Pathol. Lab. Med.* 140(10), 1052–1052.
9. Ni YB, Tse GM. (2016) Pathological criteria and practical issues in papillary lesions of the breast – a review. *Histopathology* 68(1), 22–32.
10. Rakha EA, Ellis IO. (2018) Diagnostic challenges in papillary lesions of the breast. *Pathology* 50(1), 100–110.
11. Hong YR, Song BJ, Jung SS, Kang BJ, Kim SH, Chae BJ. (2016) Predictive factors for upgrading patients with benign breast papillary lesions using a core needle biopsy. *J. Breast Cancer* 19(4), 410–416.
12. Collins LC, O'Malley F, Visscher D, Moriya T, Ichihara S, Reis-Fiho JS. (2012) Encapsulated papillary carcinoma. In: Lakhani SR, Ellis IO, Schnitt SJ, Tan PH, van de Vijver MJ, eds. WHO Classification of Tumours of the Breast. Lyon, France: IARC Press; 106–107.
13. Richards S, Li Y, Ioffe OB. (2016) Encapsulated and solid papillary carcinoma of the breast: case reports and review of clinicopathologic features. *AJSP Rev. Rep.* 21(1), 32–36.
14. Rakha EA, Gandhi N, Climent F et al. (2011) Encapsulated papillary carcinoma of the breast: an invasive tumor with excellent prognosis. *Am. J. Surg. Pathol.* 35(8), 1093–1103.
15. Jiang T, Tang W, Gu Y, Xu M, Yang W, Peng W. (2018) Magnetic resonance imaging features of breast encapsulated papillary carcinoma. *J. Comput. Assist. Tomogr.* 42(4), 536–541.
16. Farrokh D, Abedi M, Fallah Rastegar Y. (2013) An intracystic papillary carcinoma of the breast. *Iran J. Cancer Prev.* 6(2), 118–121.
17. George K, Anna Z, Evanthia K, Vassilios K. (2013) Encapsulated papillary carcinoma of the breast: an overview. *J. Cancer Res. Ther.* 9(4), 564–570.
18. Lam WW, Chu WC, Tang AP, Tse G, Ma TK. (2006) Role of radiologic features in the management of papillary lesions of the breast. *AJR Am. J. Roentgenol.* 186(5), 1322–1327.
19. Bloom C. (2015) Breast papillomas: a comprehensive review. *J. Diagn. Med. Sonogr.* 31, 282–289.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here: [Submit Manuscript](#)

DOI: [10.31579/CCOR-2021/015](https://doi.org/10.31579/CCOR-2021/015)

Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more auctoresonline.org/journals/clinical-cancer-and-oncology-research-