



Invasive Papillary Carcinoma of Male Breast – A Rare Case Report

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Abstract

Male breast cancers accounts for less than 1% of all breast cancer cases. Invasive papillary carcinoma of breast is a rare form of breast carcinoma. Here we report a case of invasive papillary carcinoma of breast in a 60 year old male who presented with a swelling in the right breast of 5 months duration. FNAC was done and the diagnosis was papillary neoplasm with cystic component. The patient underwent mastectomy following an excisional biopsy. In our patient after mastectomy the patient had undergone chemotherapy and radiotherapy and he is doing well now. We report this case due to its rarity and due to limited nature of data.

Keywords: *Invasive papillary carcinoma, Male breast cancer, Mastectomy.*

Introduction

Breast cancer is rare in men. Invasive papillary carcinoma of breast is an uncommon entity which accounts for 5-7% of all male breast cancers^[1]. It tends to affect older age group and also appears to be more frequent in men as a proportion of total cases. One of the characteristic features in histology of invasive papillary carcinoma is a fibrovascular frond of papillary tumour having thick fibrotic wall. Usually there is no myoepithelial cell layer within the papillae^[2]. Papillary carcinoma is one subtype of breast carcinoma which may be intracystic or intraductal and maybe invasive and non invasive^[3]. Prognosis is excellent for 10 year survival rate for invasive papillary carcinoma is 100%, recurrence free survival rate is 96% and 77% at 10 years and adjuvant therapy is still controversial^[4]. Most of the patients present with a painless palpable lump but a diffuse swelling or a bloody nipple discharge

are not uncommon findings. Grossly and microscopically it is similar to its female counterpart. As far as we are aware only a few case of papillary carcinoma of male breast have been published in the literature. Here we discuss a case of invasive papillary carcinoma of breast in a 60 year old male patient.

Case Report

A 60 year old man attended our surgery OPD with a swelling in the right breast of 5 months duration which was gradually increasing in size. There was no history of pain or discharge and there was no other comorbidities. His routine investigations were as follows: Hemoglobin 12.1 gm%

Total count – 5900 /cumm

DC – P₆₀L₃₂E₈

ESR – 20 mm/hr

RBS – 179

Blood Urea – 39

Serum creatinine – 1
 Sodium/ potassium – 136/4.3
 OT/PT – 25/12
 Urine routine – within normal limits
 HIV
 HBS Ag } negative
 HCV }

On examination there was a swelling in the right breast 8x8 cm with nipple destruction and skin involvement with pectoral fixity. Opposite breast was normal. FNAC was done. The diagnosis we offered was a papillary neoplasm with a cystic component and excision biopsy was advised. Excision biopsy was done and specimen was sent for histopathological examination. We received an yellowish fibrofatty tissue measuring 3x2x1 cm filled with blackish granular material.

Microscopy – Section from breast showed a cystic neoplasm with papillary structures within the cyst. Cells lining the cyst and papillae are oval to columnar with moderate to abundant cytoplasm, pleomorphic vesicular nuclei with coarse granular chromatin and some with nucleoli. Neoplasm is seen infiltrating the fibrocollagenous tissue outside the cyst. The diagnosis given was papillary cystic carcinoma.

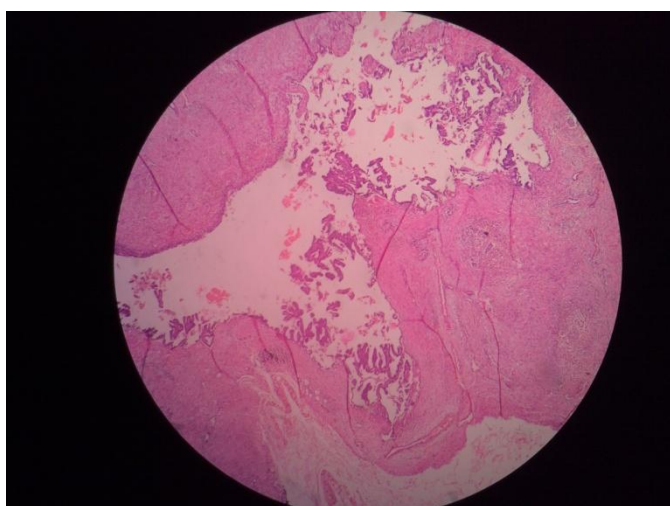


Figure 1: Shows a cystic neoplasm with papillary structures within the cyst

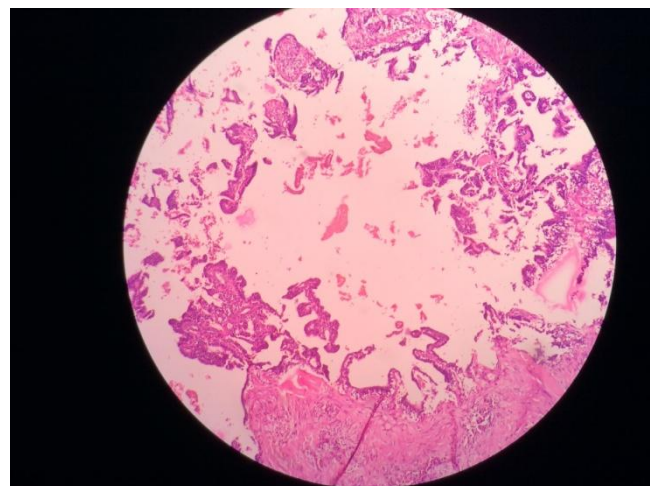


Figure 2: Neoplasm is seen to infiltrate fibrocollagenous tissue outside the cyst. Cells lining the cyst and papillae are oval to columnar with moderate to abundant cytoplasm with pleomorphic vesicular nuclei

Subsequently we received right mastectomy specimen. We received skin attached fibro fatty tissue bearing nipple and areola measuring 11.8x9.5x3.5 cm. Surface of skin showed an irregular module measuring 7x6.5 cm. Cutting through the nipple identified an irregular grey white granular lobulated mass measuring 6.5x4x4.6 cm with multiple cystic spaces filled with haemorrhagic and mucoid material which is situated almost involving the overlying skin and base of resection with a clearance of 1 cm from 1 resected margin and 1.5 cm from other resected margin.

Microscopy

Section from breast showed an invasive neoplasm composed of branching delicate papillary pattern. Cells are pleomorphic with moderate eosinophilic cytoplasm with vesicular nuclei. Nuclear crowding and stratification noted. Mitosis 4/10 HPF. Base of resection and underlying muscle free of neoplasm.

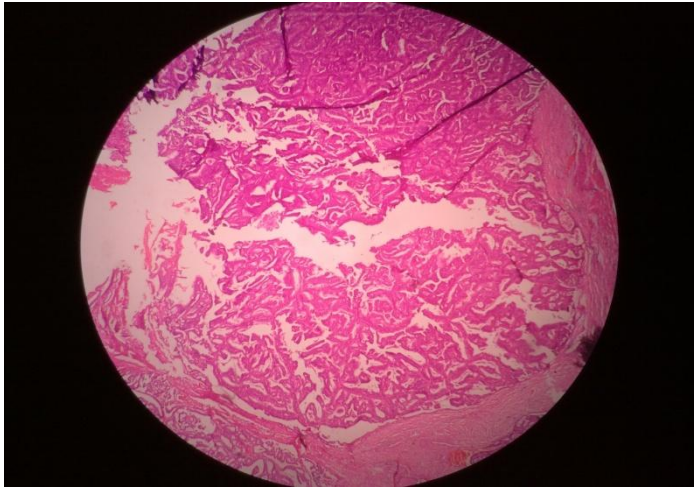


Figure 3: Section from breast showing an invasive neoplasm composed of cells in branching papillary pattern

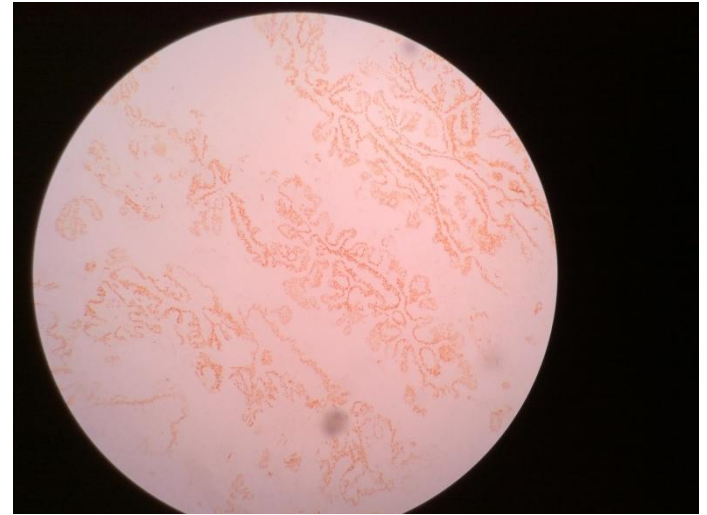


Figure 6: Neoplastic cells shows positivity for PR



Figure 4: High power view of the papillae lined by cells with pleomorphic vesicular nuclei with moderate eosinophilic cytoplasm. Overlying epidermis free of neoplasm. All resected margins free of neoplasm. No lymphnodes were identified. The neoplastic cells were positive for ER and PR.

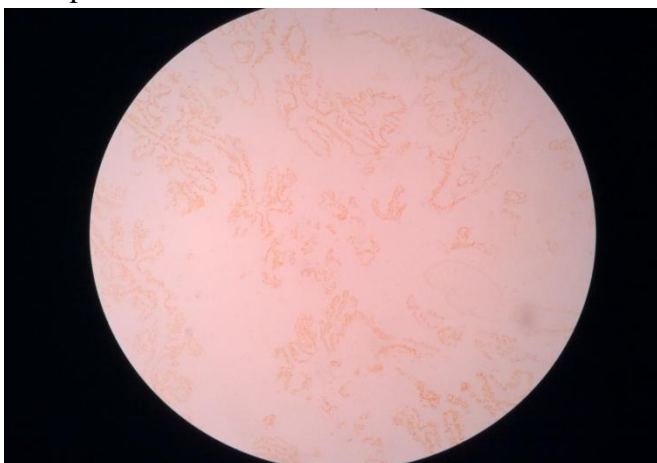


Figure 5: Neoplastic cells shows positivity for ER

Discussion

Breast carcinomas are rarely observed in males and the average incidence of which is 1% of all mammary carcinomas and less than 1% of all carcinomas in men^[5]. The majority of breast cancers in male patients are invasive ductal carcinomas and papillary carcinomas is extremely rare^[6]. The etiology of male breast cancer remains unclear but hormonal levels and testicular abnormalities play a role in etiological factors. BRCA₂ mutation is another important risk factor of breast cancer in men^[7]. Other risk factors include radiation exposure, family history of breast cancer, Klinefelters syndrome, mumps orchitis, undescended testis and obesity^[8]. In our case there was no specific risk factor. Most common clinical finding in 75-90% of patients is a painless mass which is centrally located in 70-90% of cases. The disease has a predilection for left breast. Mammographically papillary carcinoma is usually seen as round or oval shaped lesions. Usually they are seen with sharp margins but the lesions may also have obscure margins, coarse heterogenous or pleomorphic calcifications can be observed^[9]. Histologically papillary carcinoma is divided into intraductal and intracystic which is further subdivided into invasive and noninvasive. In majority of cases the tumour cells are intermediate grade and histological grade of tumour is 2 (Modified Scarff Modified Bloom Richardson grading system)^[10].

Microscopically invasive papillary carcinoma are characteristically circumscribed show delicate or blunt papillae and show solid areas of tumour growth. There is fibrovascular proliferation by loss of myoepithelial cells within fibrovascular papillae^[11]. The main differential diagnosis is intraductal papilloma when the invasion is focal in nature. In papillary carcinoma fibrovascular stroma is less conspicuous due to pronounced epithelial component proliferate in discontinuous fashion and have hyperchromatic nuclei, high nucleocytoplasmic ratio and variable mitotic figures^[12]. Treatment of invasive papillary carcinoma varies according to staging and presence of hormone receptors. Lumpectomy and mastectomy is followed by adjuvant chemotherapy, radiotherapy and hormone therapy^[13]. In our patient after mastectomy patient had undergone chemotherapy and radiotherapy and patient is doing well now. Papillary cancer has a good prognosis as compared to other histological subtypes. The 10 year survival rate is almost 100% and recurrence free survival rate is 96% at 2 years and 77% at 10 years.

Conclusion

Invasive papillary carcinoma of males is an uncommon disease and carries a favourable prognosis. Early diagnosis and treatment with mastectomy and adjuvant chemotherapy give favourable results. To study the molecular and biological properties of male breast cancer more research needs to be done.

References

1. Cutulib, LE- Nir C C, Serin D, Kirova Y et al. Male Breast Cancer Evolution of Treatment and Prognostic Factors. Analysis of 489 cases. Crit Rev Oncol Hematol. 2010; 73(3): .246-54(DOI) Pub med.
2. Noriko Y, et al, " Synchronous Bilateral Solid Papillary carcinomas of the Breast" Case reports in surgery 2013; 1155: 8121-8129.

3. Salem A, Mrad K, Driss M, Hamsa R, Minif N. Intracystic Papillary Carcinoma of Breast. J Radiol 2009, 90(4): 515-518.
4. Solorzano C C, Middleton L P, Hunt K Ketal, Treatment and Outcome of Patients with Intracystic Papillary Carcinoma of the Breast. AmJ Surg. 2002, 184(4): 364-368 pp.
5. Anderson F F, Devassa S S. In situ Male Breast Carcinoma in the Surveillance, Epidemiology and End Results, Database of the National Cancer Institute, Cancer 2005, 104: 1733-1741.
6. Mathew J. Perkins G H, Stephens T, Middleton L P, Yang W T. Primary Breast Cancer in Men, Clinical Imaging and Pathologic Findings In 57 Patients, AJAR AmT Roentgenol 2008, 191(6): 1631-9(DOI) Pub med.
7. Korde L A, Zujewski J A, Kamin L, Giordano. S, Domchek S, Anderson W T et al, Multidisciplinary Meeting on Male Breast Cancer, Summary and Research Recommendations, J clin Oncol 2010, 28(12) :2114-22(DOI) Pub med.
8. Lakhani S R, WHO classification of tumours, Pathology and Genetics of Tumours of the Breast and Female Genital Organs, 2012, Pg 35.
9. Schneider J A, Invasive Papillary Breast Carcinoma: Mammographic and sonographic appearance Radiology(1989), 171(2): 377-9(DOI) Pub med.
10. Ruchika Gupta, Alok Sharma, Amit Kumar Dinha. Invasive Papillary Carcinoma of Male Breast, Vol. 53, p 135-137, Indian Journal of Pathology and Microbiology.
11. Sinha S, Hughes R G, Ryley N G, , Papillary Carcinoma in Male Breast Cyst, A diagnostic challenge. 2006, Ann R Coll Surg. Engl 88 w 3-5.
12. Kraus F T, Neubecher R D, Differential Diagnosis of Papillary Tumors of Breast Cancer, 1962; 15, 444-55, Pub med.

13. Ozsovy A, Barca N, Akdal B, Kayacetin S, Araz L etal. Invasive Solid Papillary Carcinoma of Male Breast: A Rare Case Report, Iran J Radiole: e 14384 DOI: 5812/ Iran J Radiole 14384.