

Intracystic Papillary Carcinoma in the Male Breast: A Case Study and Comprehensive Literature Review

Radia Benyahia^{1*}, Kamel Hail², Lounas Benghanem³, Mazouzi Chahira⁴, Salah Eddine Bendib¹

¹Department of Medical Imaging, Pierre and Marie Curie Center, University of Algiers 1, Algeria.

²Department of Surgery, Mustapha Hospital, University of Algiers 1, Algeria

³Department of Gynecology, Mustapha Hospital, University Hospital, Algeria

⁴Department of Medical Oncology, Bejaia University Hospital, Algeria

DOI: [10.36347/sjmcr.2020.v08i12.018](https://doi.org/10.36347/sjmcr.2020.v08i12.018)

| Received: 02.10.2020 | Accepted: 15.11.2020 | Published: 30.12.2020

*Corresponding author: Radia Benyahia

Abstract

Case Report

The incidence of breast cancer in men is exceedingly low, accounting for less than 1% of all breast cancer cases. However, the rarity of this pathology should not overshadow the significance of its diagnosis and management, which can be particularly challenging due to low awareness and limited knowledge on the subject. Among various histological subtypes of male breast cancer, intracystic papillary carcinoma remains exceptionally rare, constituting between 0.5% and 2.4% of female breast cancers and 5% to 7.5% in males. It is distinguished by its unique morphological characteristics in imaging and clinical presentation. This article aims to delve deeply into the role of medical imaging in diagnosing, primarily based on mammography and ultrasound, and monitoring male papillary breast cancer, supported by an illustrative case study and an exhaustive review of the existing literature.

Key words: Intracystic Papillary Carcinoma ; Male Breast Cancer; Ultrasound ; Mammography.

Copyright @ 2020: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

INTRODUCTION

The incidence of breast cancer in men is exceedingly low, accounting for less than 1% of all breast cancer cases. However, the rarity of this pathology should not overshadow the significance of its diagnosis and management, which can be particularly challenging due to low awareness and limited knowledge on the subject. Among various histological subtypes of male breast cancer, intracystic papillary carcinoma remains exceptionally rare, constituting between 0.5% and 2.4% of female breast cancers and 5% to 7.5% in males. It is distinguished by its unique morphological characteristics in imaging and clinical presentation. This article aims to delve deeply into the role of medical imaging in diagnosing, primarily based on mammography and ultrasound, and monitoring male papillary breast cancer, supported by an illustrative case study and an exhaustive review of the existing literature.

OBSERVATION

A 42-year-old male patient with no significant pathological history presented with a palpable mass in

the right breast without inflammatory signs or nipple discharge. Clinical examination revealed bilateral gynecomastia with a mass in the retroareolar region of the right breast, approximately 20 mm in diameter, soft but firm, and mobile relative to both superficial and deep planes without skin changes or ipsilateral axillary lymphadenopathy. Mammography identified a deep retroareolar mass in the right breast with high density, lobulated shape, and partly indistinct contours, homogeneously without microcalcifications within (Figure 1). Supplementary ultrasound imaging revealed a solid-cystic mass measuring 20×15 mm in diameter with lobulated shape and micro-lobulated contours showing posterior enhancement. Doppler study revealed vascularization within the solid component (Figure 2). The radiological file was classified as BI-RADS 4 according to ACR criteria. Microbiopsy performed on the solid part of the mass under ultrasound guidance favored a diagnosis of Papillary Carcinoma. Post-mastectomy histopathological examination confirmed the histological appearance of an intracystic papillary carcinoma with positive hormone receptors and a Ki67 index of 10% without lymph node involvement (Figure 3).

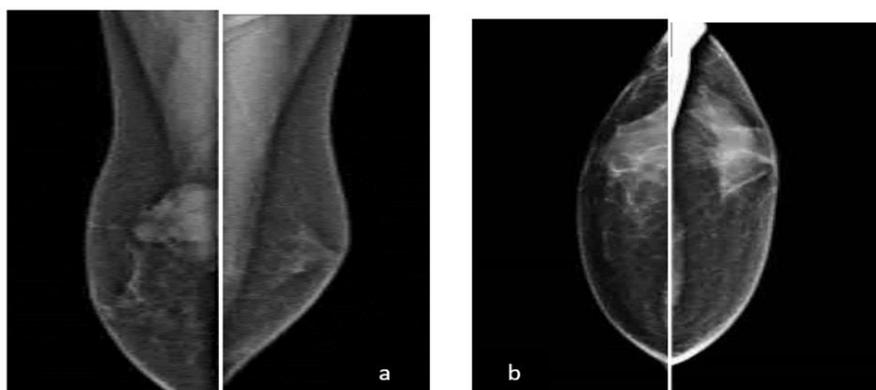


Figure 1: Mammography images showing a dense, lobular mass, with circumscribed contours in places hidden in other homogeneous places, without microcalcification within it (a: oblique incidence, b: frontal incidence).

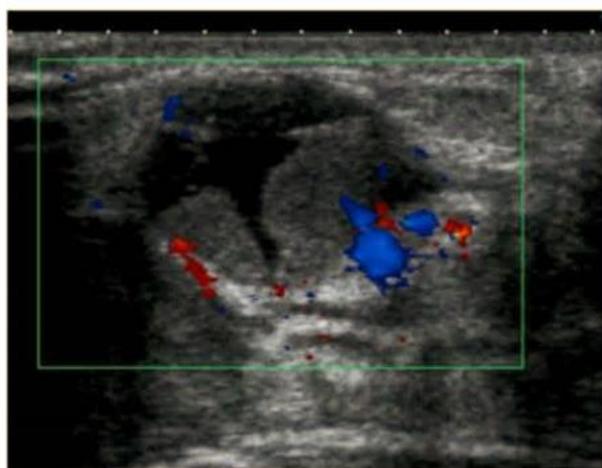


Figure 2: Ultrasound showing a mass of the superouter quadrant of the heterogeneous right breast with dual cystic and tissue components.

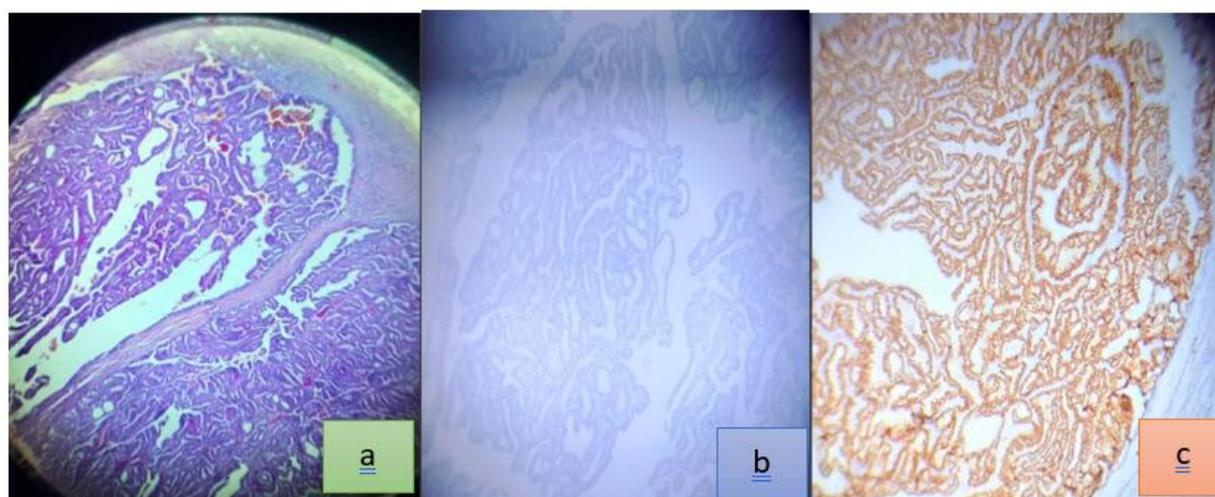


Figure 3: Histological appearance (a) Intracystic proliferation of papillary tubulo architecture in HEx10 (b) Immunohistochemistry CK5/6 negative (c) Highly positive hormone receptors

DISCUSSION

Breast cancer in men is a rare clinical entity, making up less than 1% of all male cancers[1]. Intracystic papillary carcinoma represents an even rarer subcategory of this cancer[2], with increased prevalence

in men with gynecomastia [3]. Patients typically present with a palpable central breast mass, occasionally accompanied by nipple discharge [4]. Imaging plays a pivotal role in diagnosing intracystic papillary carcinoma in men. While mammography may not

reveal small tumors, it can identify larger lesions appearing as oval or polylobed masses with circumscribed contours, though they can be obscured or indistinct in some areas [5,6,7]. Ultrasound might misleadingly only show the liquid component, describing a pure cyst. However, it is the first-line imaging method for distinguishing cysts from solid masses and pure cysts from complex breast cysts. Classic features include a complex cyst with a solid component that may exhibit posterior shadowing echoes indicative of spontaneous hemorrhages. Doppler imaging typically shows vascularization [8,9]. Magnetic resonance imaging (MRI), although not specific for papillary tumors, aids in diagnosis by revealing septation and mural nodules [9]. Biopsy remains crucial for confirming the diagnosis, as fine-needle aspiration is limited by a high rate of false negatives. The therapeutic management of intracystic papillary carcinoma is not unanimous, ranging from conservative options for non-invasive forms to mastectomy for invasive types. Continuous monitoring is imperative, regardless of the chosen approach. Given the rarity of lymph node involvement and the low rate of local recurrence, complete tumor excision without lymphadenectomy may suffice [10]. The utility of sentinel lymph node biopsy should be assessed on a case-by-case basis. Moreover, hormone therapy, even for tumors expressing hormone receptors, has not shown prognostic improvement, necessitating further evaluation to justify its use. Compared to intracanalicular carcinomas, intracystic papillary carcinoma is characterized by slow progression and an excellent prognosis, as reported in the literature, with a survival rate of 91% to 96.8% at 10 years [11].

Conflict of Interest: The authors declare no conflict of interest.

Author Contributions: All authors have read and approved the final version of the manuscript.

REFERENCES

1. Sasco AJ, Lowenfels AB, Pasker-de Jong P. Epidemiology of male breast cancer. A meta-analysis of published case-control studies and discussion of selected aetiological factors. *Int J Cancer* 1993;53(4):538–49.
2. Sonksen CJ, Michell M, Sundaresan M. Case report: intracystic papillary carcinoma of the breast in a male patient. Departments of radiology and histopathology, Kings College Hospital, London, UK. *Clin Radiol* 1996;51(6):438–9.
3. Kinoshita T, Fukutomi T, Iwamoto E, Takasugi M, Akashi-Tanaka S, Hasegawa T. Intracystic papillary carcinoma of the breast in a male patient diagnosed by core needle biopsy: a case report. *Breast* 2005;14(4):322–4.
4. Ait benkaddour Y, El Hasnaoui S, Fichtali K, Fakhir B, Jalal H, Kouchani M, Aboufalah A, Abbassi H. Intracystic papillary carcinoma of the breast: report of three cases and literature review. *Case Rep Obstet Gynecol* 2012; 2012:979563
5. Lam WWM, Tang APY, Tse G, and Chu WCW. Radiology-pathology conference: papillary carcinoma of the breast, *Clinical Imaging* 2005 ; vol. 29, no. 6, pp. 396–400
6. Abounouh N, Belkouchi FZ, Zidane F, Yousfi M, Amrani S, Bargach S. Carcinome Papillaire Mammaire Intra Kystique: A Propos De Deux Cas. *Global Journal of Medical Research: E Gynecology and Obstetrics* 2017 Volume 17 Issue 1
7. Salem A, Mrad K, Driss M, Hamza R, Mnif N. Intracystic papillary carcinoma of the breast. *J Radiol.* 2009 Apr; 90(4):515-518.
8. Larribe M, Thomassin-Piana J, JalaguierCoudray A, *Cancers mammaires de forme ronde :corrélations imagerie-anatomopathologie, Journal de Radiologie Diagnostique et Interventionnelle* 2014 ; Volume 95, Issue 1, Pages 40-50.
9. Brookes MJ, Bourke AG. Radiological appearances of papillary breast lesions. *Clinical Radiology* 2008 ; vol. 63, no. 11, pp. 1265–1273
10. Harris KP, Faliakou EC, Exon DJ, Nasiri N, Sacks NP, Gui GP. Treatment and outcome of intracystic papillary carcinoma of the breast. *Br J Surg* 1999;86:1274.
11. Grabowski J, Salzstein SL, Sadler GR, Blair S. Intracystic papillary carcinoma: a review of 917 cases. *Cancer.* 2008;113(5): 916-920.