

SHORT COMMUNICATION

ENCAPSULATED PAPILLARY BREAST CARCINOMA IN A MALE PATIENT IN ASSOCIATION WITH MICRODEPOSITS OF CARCINOMA CELLS IN THE NEEDLE TRACK AND SENTINEL LYMPH NODE TREATED CONSERVATIVELY

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We present an encapsulated papillary breast carcinoma in a male patient, in association with microdeposits of carcinoma cells within the needle track, in the lymphatic spaces of the breast parenchyma and subcapsular sinus of two sentinel lymph nodes in which conservative treatment has been recommended. Both in females and males, papillary tumours and particularly encapsulated papillary breast carcinoma can be associated with microdeposits mechanically displaced, which have to be differentiated from true invasion and metastases and treated conservatively.

Key words: encapsulated papillary carcinoma, breast, male, displaced cells.

Dear Sir, we read with great interest the paper of Douglas-Jones and colleagues [1] regarding difficulty in diagnosis arising from displaced epithelium after core biopsy in intracystic papillary lesions of the breast. That paper described this phenomenon in two cases of 76- and 69-year-old female patients, respectively. In those two cases, despite the fact that after a previous biopsy (performed with a 14G biopsy needle) the authors found groups of epithelial cells within the granulation tissue outside the cystic space containing the papillary tumour, as well as in the vascular spaces of the breast parenchyma (in one case), subsequent axillary lymph node sampling showed no evidence of metastases. In contrast, we report here a 75-year-old male patient presented for left breast mass and with nipple bloody discharge. Tru-cut biopsy revealed a papillary proliferation of epithelial cells

with minimal atypia and lack of myoepithelial cells. Total mastectomy with sentinel lymph node (SLN) dissection was performed. Within the breast specimen, a cystically dilated space of 40 mm diameter was identified, containing a 25 mm diameter grey, friable, and bosselated mass attached to the cystic wall (Fig. 1A). Microscopic examination revealed a papillary proliferation surrounded by a thick fibrous capsule. The papillary projections were lined by several layers of cells with low/intermediate nuclear grade and few atypical mitotic figures (Fig. 1B, C). Immunohistochemical stains revealed the complete absence of myoepithelial cells in both papillary projections and at the periphery of the lesion (Fig. 1D, E). In the vicinity of the lesion, areas of low-grade ductal *in situ* carcinoma were observed, as well as two areas of small groups of entrapped tumour cells on

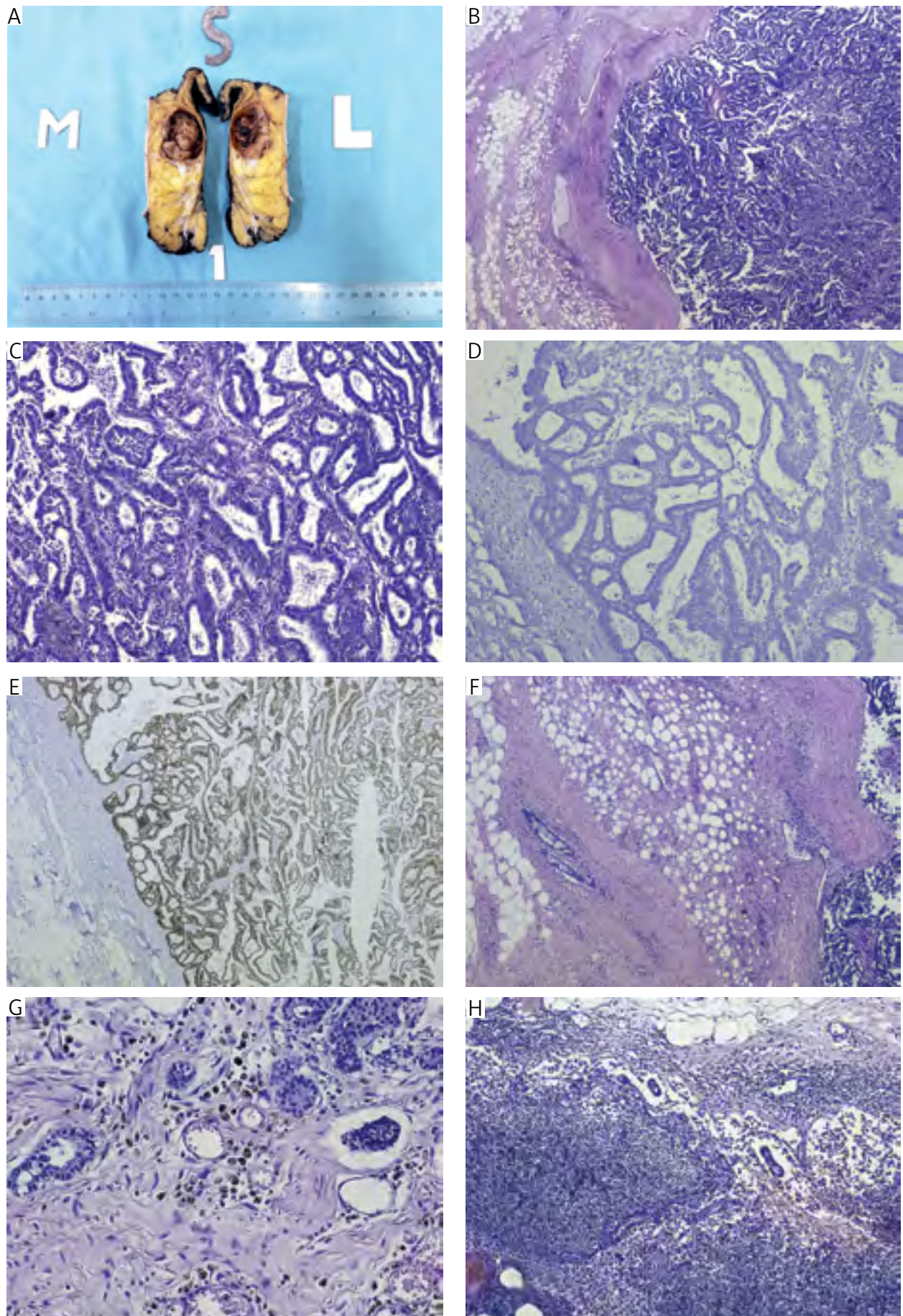


Fig. 1. cont. next page

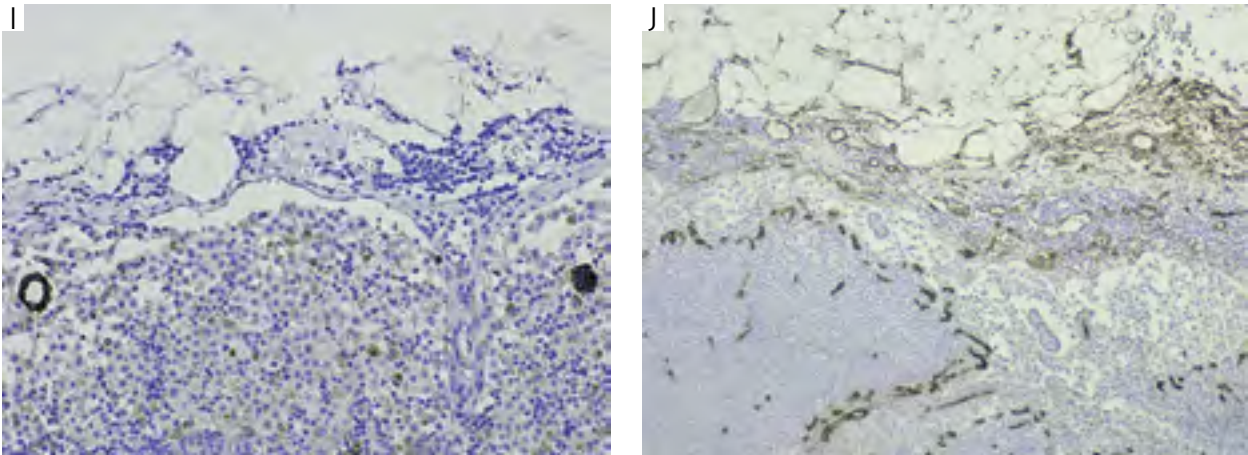


Fig. 1. Breast specimen presenting a cystically dilated space containing a grey, friable, and bosselated mass attached to the cystic wall (A); the tumour was represented by a papillary proliferation surrounded by a thick capsule (B); the papillary projections were lined by several layers of epithelial cells with low/intermediate nuclear grade and few mitotic figures (C); p63 stain revealed complete absence of myoepithelial cells in both papillary projections and at the periphery of the lesion (D); 100% of the tumour cells were positive for oestrogen receptor (E) as well as progesterone receptor, while Ki67 index was very low and HER2 was negative (data not shown); areas of entrapped tumour cells on the previous site of biopsy, in the vicinity of the lesion (F) and involving some vascular spaces (G); foci of tumour cells within the subcapsular sinus in both removed SLNs (H), positive for pan-cytokeratin (I), while CD34 is negative within the surrounding space (J)

the previous biopsy site (in association with granulation tissue and hemosiderin pigment) and involving some vascular spaces (Fig. 1F, G, H). Examination of the two SLNs revealed several similar foci of tumour cells within the subcapsular sinus (Fig. 1I, J).

Approximately 85% of male infiltrating mammary carcinomas are of NST (no special type) [2, 3]. Papillary male breast carcinoma of invasive or *in situ* type are relatively more common among men than women [3, 4, 5, 6, 7, 8, 9, 10, 11, 12]. However, except for the case of a 78-year-old patient with an invasive papillary breast carcinoma, all the other anecdotal case reports of papillary lesions in male breast were of *in situ* type [4]. The encapsulated papillary breast carcinoma is a very rare lesion, characterised by the presence of a proliferation with papillary architecture located within an apparent cystic space lined by a thick capsule. Both papillary structures and the fibrous capsule lack myoepithelial cells, raising the possibility that encapsulated papillary carcinoma may represent a minimally invasive, low-grade, indolent form of invasive carcinoma rather than an *in situ* lesion. The lesion has been recently described in elderly women as a mass located in the subareolar area and associated with nipple discharge, similar to the present case. In the absence of an infiltrative component this tumour has a very favourable prognosis. Because of their fragile structure, papillary lesions are especially vulnerable to epithelial displacement after needling procedures [1]. Small clusters of atypical cells may be found in the track of the needle embedded in reactive changes, as well as, although very rarely reported, in regional lymph nodes, but never re-

ported in males, in association with an encapsulated papillary breast carcinoma [13]. Although one study mentioned a higher rate of recurrence associated with the presence of epithelial displacement, the potential risk for local recurrence is ameliorated because the biopsy site and needle track have been surgically removed [14]. In the present case, carcinoma cells within lymphatic spaces in the breast parenchyma and in the vicinity of the needling procedure were associated with several tumour deposits in the subcapsular sinus of two SLNs. This raises the hypothetical possibility that these displaced cells migrating to the axillary lymph nodes could persist for a variable period of time and acquire invasive characteristics. However, according to recent literature emphasising that these displaced epithelial cells do not have clinical significance, axillary dissection was not recommended [15]. The patient underwent radiotherapy followed by hormonal therapy and is well with no signs of local recurrence or distant metastases 17 months after the diagnosis.

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The authors declare no conflict of interest.

References

1. Douglas-Jones AG, Verghese A. Diagnostic difficulty arising from displaced epithelium after core biopsy in intracystic papillary lesions of the breast. *J Clin Pathol* 2002; 55: 780-783.

2. Burga AM, Fadare O, Lining RA, et al. Invasive carcinomas of the male breast: a morphologic study of the distribution of histologic subtypes and metastatic patterns in 778 cases. *Virchows Arch* 2006; 449: 507-512.
3. Stolnicu S, Moncea D, Dema A, et al. Androgen receptor (AR) expression in invasive male breast carcinoma (MBC): an international multi-institutional review of 168 cases emphasizing the potential use of AR as a therapeutic target. *Appl Immunol Mol Morphol* 2017; 25: e18-e20.
4. Pant I, Joshi SC. Invasive papillary carcinoma of the male breast: report of a rare case and review of the literature. *J Cancer Res Ther* 2009; 5: 216-218.
5. Olu-Eddo AN, Ohanaka CE. Intracystic papillary carcinoma of the breast in a Nigerian male: case report. *Niger Postgrad Med J* 2008; 15: 270-271.
6. Imoto S, Hasebe T. Intracystic papillary carcinoma of the breast in a male: case report and review of the Japanese literature. *Jpn J Clin Oncol* 1998; 28: 517-520.
7. Hussain A, Sweeney KJ, Salman R, et al. Intracystic papillary carcinoma of the male breast: a case report and review of the literature. *Ir J Med Sci* 2012; 181: 329-331.
8. Romics L Jr, O'Brien ME, Relihan N, et al. Intracystic papillary carcinoma in a male as a rare presentation of breast cancer: a case report and literature review. *J Med Case Rep* 2009; 3: 13.
9. Heller KS, Rosen PP, Schottenfeld D, et al. Male breast cancer. A clinicopathologic study of 97 cases. *Ann Surg* 1978; 188: 60-65.
10. Wolff M, Reinis MS. Breast cancer in the male: Clinicopathologic study of 40 patients and review of the literature. In: *Progress in surgical pathology*. Vol. III. Fenoglio M., Wolff M (eds.). Masson Publishers, New York 1981; 77-109.
11. Visfeldt J, Sheike O. Male breast cancer. I. Histologic typing and grading of 187 Danish cases. *Cancer* 1973; 32: 985-990.
12. Norris HJ, Taylor HB. Carcinoma of the male breast. *Cancer* 1969; 23: 1428-1435.
13. Carter BA, Jensen RA, Simpson JF, et al. Benign transport of breast epithelium into axillary lymph nodes after biopsy. *Am J Clin Pathol* 2000; 113: 259-265.
14. Chen AM, Haffty BG, Lee CH. Local recurrence of breast cancer after breast conservation therapy in patients examined by means of stereotactic core needle biopsy. *Radiology* 2002; 225: 707-712.
15. Giuliano AE, Ballman K, McCall L, et al. Locoregional Recurrence After Sentinel Lymph Node Dissection With or Without Axillary Dissection in Patients With Sentinel Lymph Node Metastases: Long-term Follow-up From the American College of Surgeons Oncology Group (Alliance) ACOSOG Z0011 Randomized Trial. *Ann Surg* 2016; 264: 413-420.

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