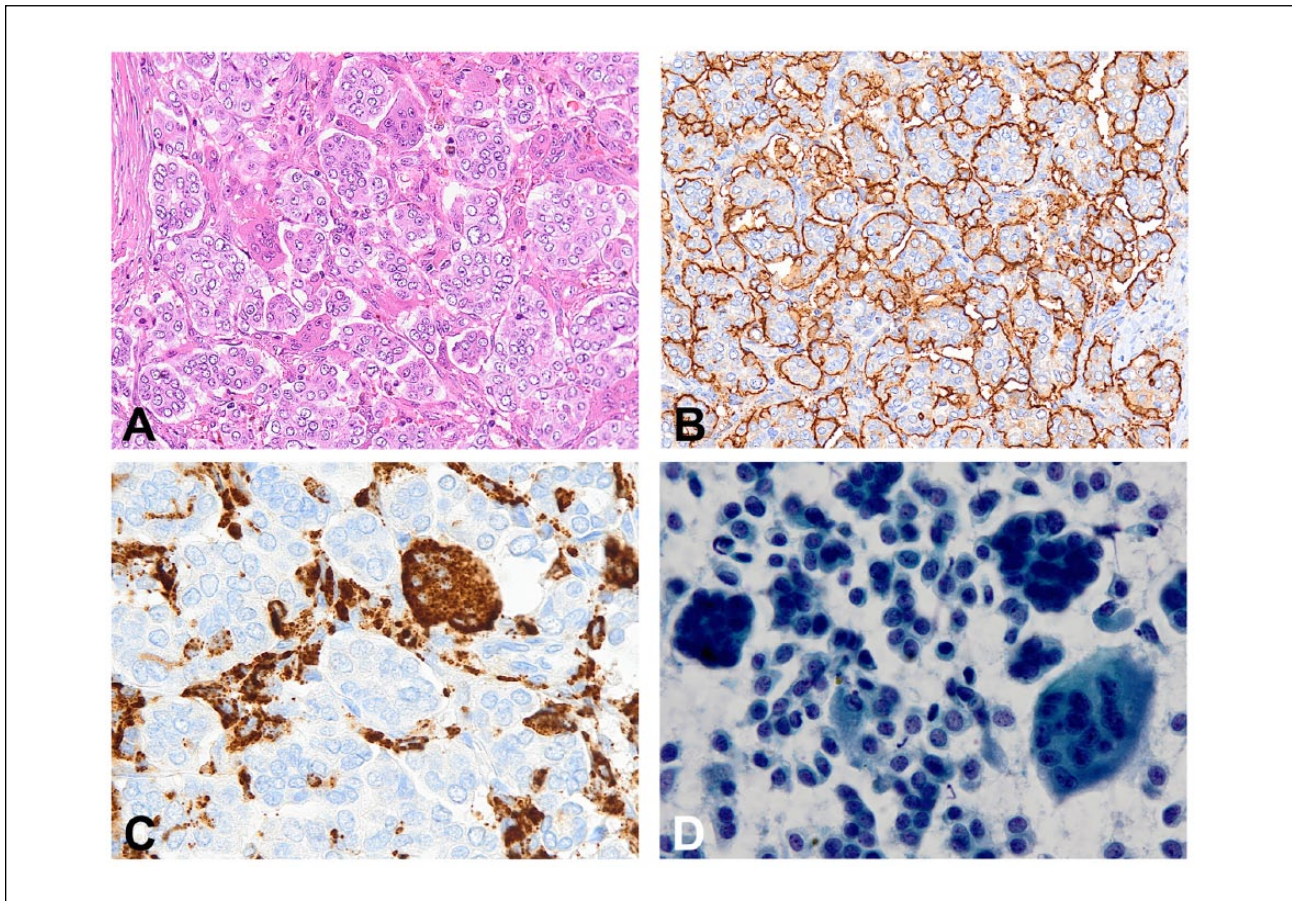


# “Giants in a Microcosm”: Multinucleated Giant Cells Populating an Invasive Micropapillary Carcinoma of the Breast

International Journal of Surgical Pathology  
2015, Vol. 23(8) 654–655  
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DOI: 10.1177/1066896915605616  
ijs.sagepub.com  
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**Figure 1.** Micropapillary carcinoma of the breast with an osteoclast-like giant cell component. Pure invasive micropapillary carcinoma: neoplastic cells are arranged in small cell clusters immersed in a spongy stroma (A), showing the so-called “inverted polarity” (MUC1 expression lining the stroma-facing border of the morulae) (B). Intensely eosinophilic syncytial-multinucleated giant cells of histiocytic origin (CD68+, MUC1–) percolating the stromal bands (A, C). Following review of cytological specimens of presurgical diagnosis, multinucleated giant cells scattered among small cell clusters of neoplastic cells were also identified (D).

On examination of a breast mass surgically excised in a 69-years-old woman, a pure invasive micropapillary carcinoma (MPC) was diagnosed (Figure 1). At close examination, intensely eosinophilic syncytial-multinucleated giant cells (CD68+) percolating the stromal bands were identified (Figure 1). The breast carcinoma illustrated here shows therefore a combination of 2 rarities, namely, an invasive micropapillary growth pattern and an osteoclast-like giant

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cell (OGC) component. The World Health Organization blue book classifies the “carcinoma with osteoclast-like stromal giant cells” among rare variants of invasive carcinomas of no special type (IC-NSTs)<sup>1</sup>; however, OGCs can also accompany a variety of breast cancer special types (cribriform, tubular, mucinous, papillary, lobular, squamous and other metaplastic patterns<sup>1,2</sup>). Identification of giant cells populating MPCs can be challenging as they feature the same size as the micropapillae and only differ in staining (more eosinophilic cytoplasm) (Figure 1).

Osteoclast-like giant cells are hypothesized to derive from macrophages by syncytial fusion but not by mitosis without cell division<sup>3</sup>; however, the mechanism of OGC formation and accumulation in breast carcinoma is still largely unknown.<sup>2</sup> An open question remains about their prognostic significance: a study on metaplastic carcinomas with an OGC component reported a 5-year survival rate fairly similar to that of patients affected by IC-NST.<sup>1</sup> Further studies on large cohorts would be needed to definitively ascertain whether or not a diagnosis of breast carcinoma with osteoclast-like stromal giant cells may affect patient clinical outcome.<sup>1</sup>

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: We would like to acknowledge AIRC grant support (MFAG 13310) to CM.

## References

1. Lakhani S, Ellis IO, Schnitt S, Hoon Tan P, van de Vijver MJ. *WHO Classification of Tumours of the Breast*. Lyon, France: IARC Press; 2012.
2. Rosen PP. Mammary carcinoma with osteoclast-like giant cells. In: *Rosen's Breast Pathology*. 3rd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2009:571-580.
3. Shishido-Hara Y, Kurata A, Fujiwara M, Itoh H, Imoto S, Kamma H. Two cases of breast carcinoma with osteoclastic giant cells: are the osteoclastic giant cells pro-tumoural differentiation of macrophages? *Diagn Pathol*. 2010;5:55.