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RESEARCH ARTICLE

INVASIVE MICROPAPILLARY BREAST CARCINOMA DISCOVERED DURING THE INVESTIGATION OF ACUTE RESPIRATORY DISTRESS IN A POSTPARTUM WOMAN: A CASE REPORT

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Abstract

Invasive micropapillary carcinoma of the breast is a rare histological entity among breast cancers, representing 2 to 3% of breast carcinomas. Its clinical and radiological presentation is similar to other carcinoma entities. Diagnosis is primarily histological but remains challenging and dependent on the operator. It is an aggressive tumor with both local and distant extension (lymphatic, cutaneous, etc.). In this study, we present a case of invasive micropapillary carcinoma of the breast discovered during acute respiratory distress due to serous extension (pleural effusion). Through this case, we will discuss the various clinical, radiological, therapeutic, and particularly histological aspects of this rare type of carcinoma.

Introduction:-

The new classification of breast carcinomas established by the World Health Organization (WHO) in 2002-2003 has defined new rare entities that are now recognized and well-defined. Invasive micropapillary carcinoma is one such entity. This type represents less than 3% of all breast carcinomas. It is an aggressive carcinoma with distinctive histopathological features. These tumors generally have an unfavorable prognosis due to the presence of vascular emboli and lymph node metastases. However, the micropapillary aspect itself is not an independent prognostic factor.

Case presentation:

Mrs. KM, 41 years old, married, G5P4 (3 full-term vaginal deliveries, 1 full-term vaginal breech delivery, 1 miscarriage), diabetic for 4 years on insulin therapy, presented to our service on postpartum day 5 after a cesarean delivery for mastodynia (breast pain) with an increase in the volume of the left breast.

Clinical examination revealed a conscious patient with a Glasgow Coma Scale (GCS) score of 15/15, tachypnea, and cardiac auscultation revealed muffled heart sounds (B1, B2) with predominant bilateral basithoracic dullness, more prominent on the left side.

On a breast examination:

1. Left breast: Increased volume, presence of a mass involving both upper quadrants, firm and painful upon palpation, fixed relative to the surrounding tissue, with an appearance of orange peel skin. The nipple is inverted.
2. Left axillary lymph nodes: 3 cm in size.

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3. Clinical staging: T4dN1Mx.
4. Milk production present in both breasts.

Postpartum examination: Lochia is of normal appearance and abundance.

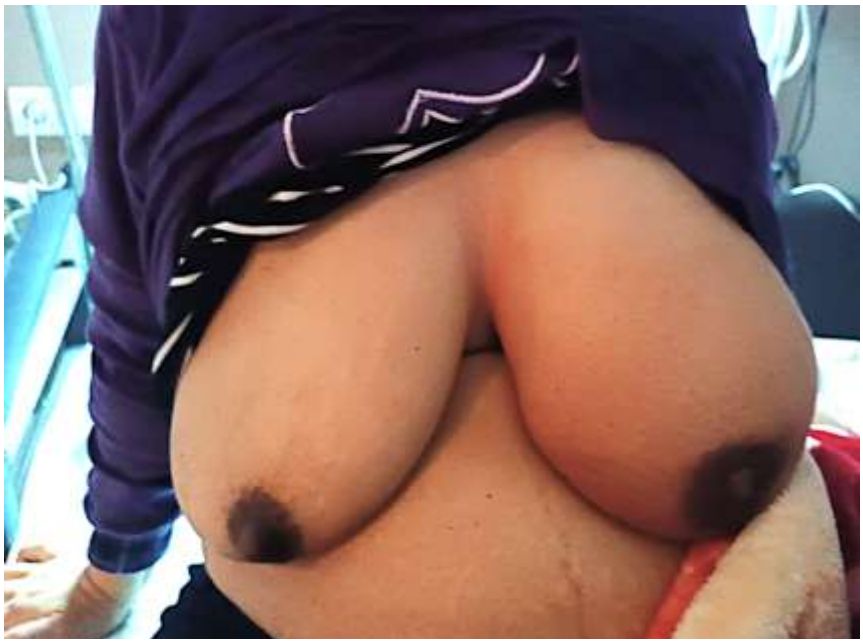

Figure 1:- Clinical appearance of both breasts showing mammary asymmetry with inflammation in the left breast.

The patient initially underwent a thoracic CT angiography:

1. No signs of pulmonary embolism.
2. Large abundance of left pleural effusion.
3. Large abundance of pericardial effusion.
4. Significant infiltration of the left breast gland.
5. Left axillary and bilateral supraclavicular lymph nodes.

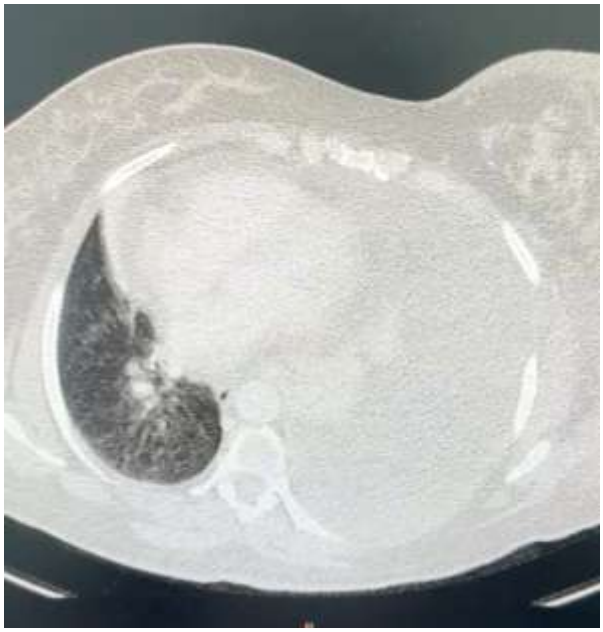

Figure 2:- Scannographic section showing a large abundance of left pleural and pericardial effusion.

Due to respiratory distress, the patient underwent a diagnostic and evacuative pleural puncture with pleural biopsy, the histopathological results of which favored:

Secondary localization of a poorly differentiated adenocarcinoma compatible with a mammary origin, IHC not performed (lack of means).

Breast ultrasound-mammography:

1. Two lesions in the upper outer quadrant (QSI) of the right breast: Birads 5.
2. Lesion and area in the upper inner and outer quadrant of the left breast: Birads 5.
3. Significant infiltration of the left breast gland + skin thickening (carcinomatous mastitis).
4. Left axillary lymph nodes showing magma

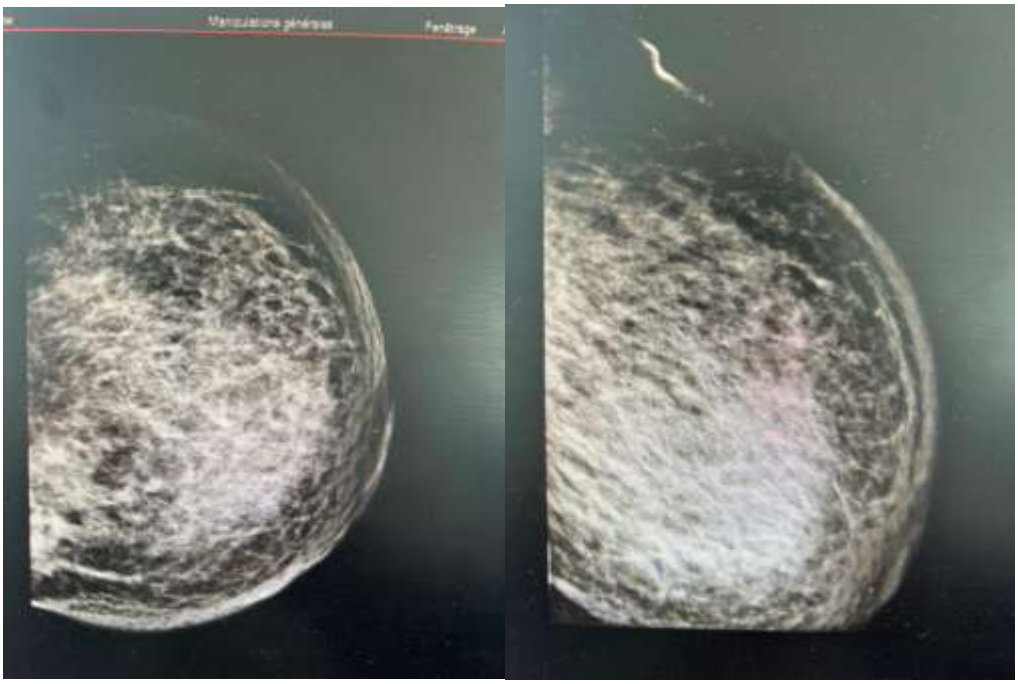

Figure 3:- Mammography ACR 5.

Microbiopsy with tricut of the left breast:
Infiltrating micropapillary carcinoma of the left breast, grade 3, absence of vascular emboli or ductal carcinoma in situ (CIS)

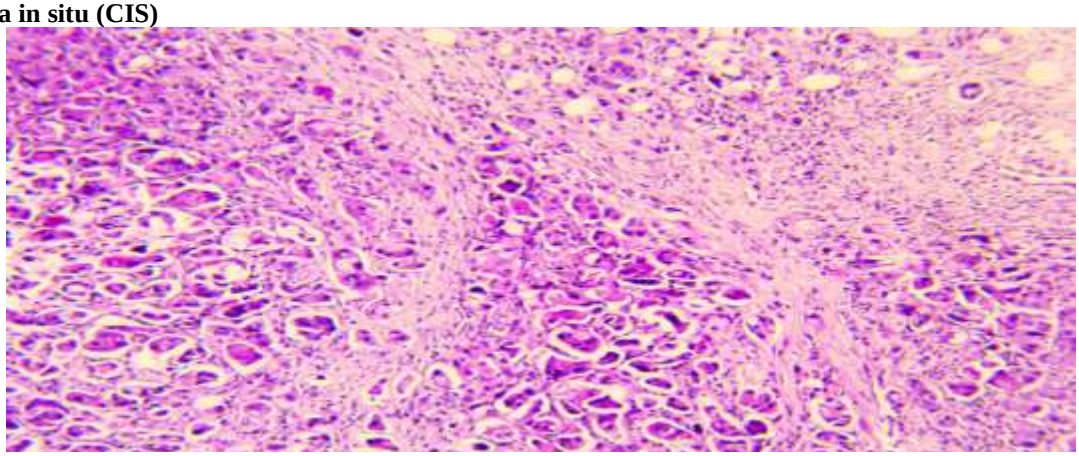

Figure 4:- Histological section at high magnification showing a mammary carcinomatous proliferation with a micropapillary architectural pattern.

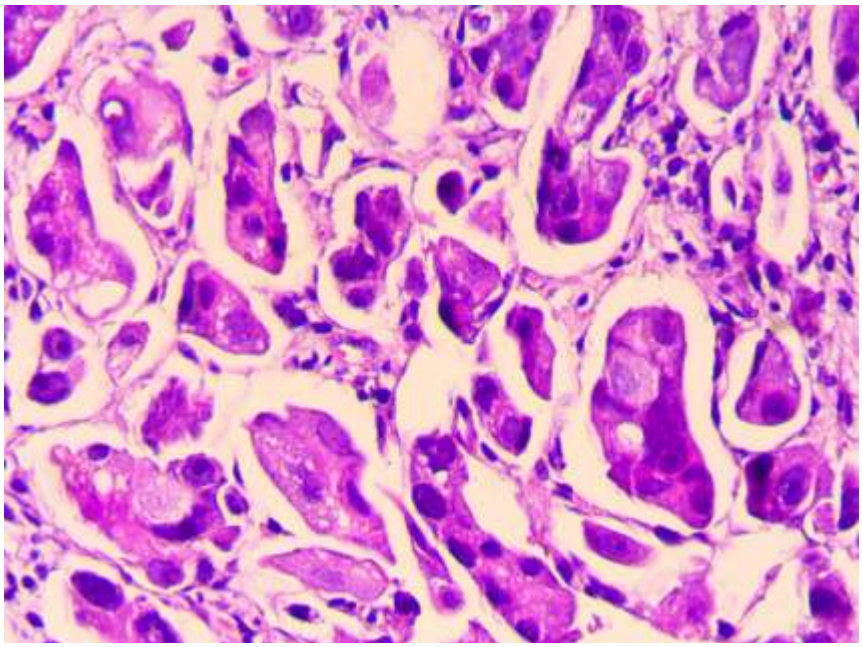

Figure 5:- Cellular character.

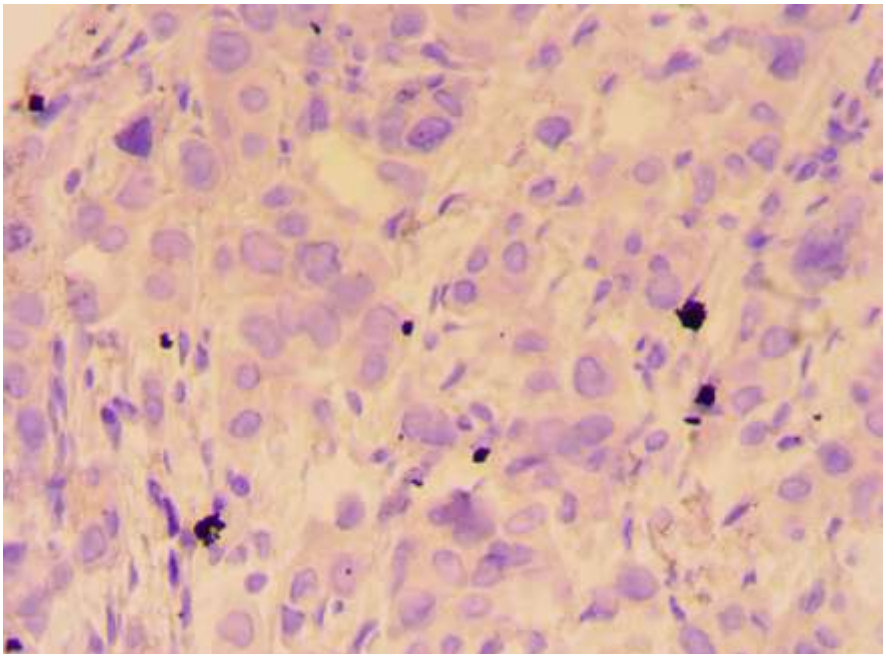

Figure 6:- Receptor: RE (Estrogen Receptor)

1. **Staining Pattern:** Negative nuclear staining of tumor cells
2. **Internal and External Controls:** Positive

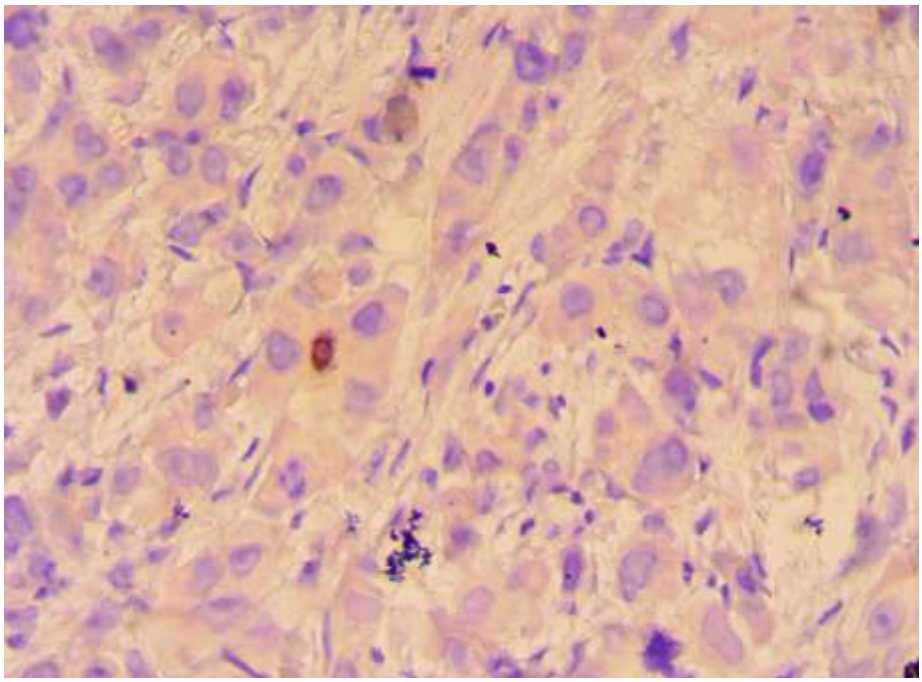

Figure 7:- **Receptor:** RP (Receptor for Progesterone).

1. **Staining Pattern:** Negative nuclear staining of tumor cells
2. **Internal and External Controls:** Positive

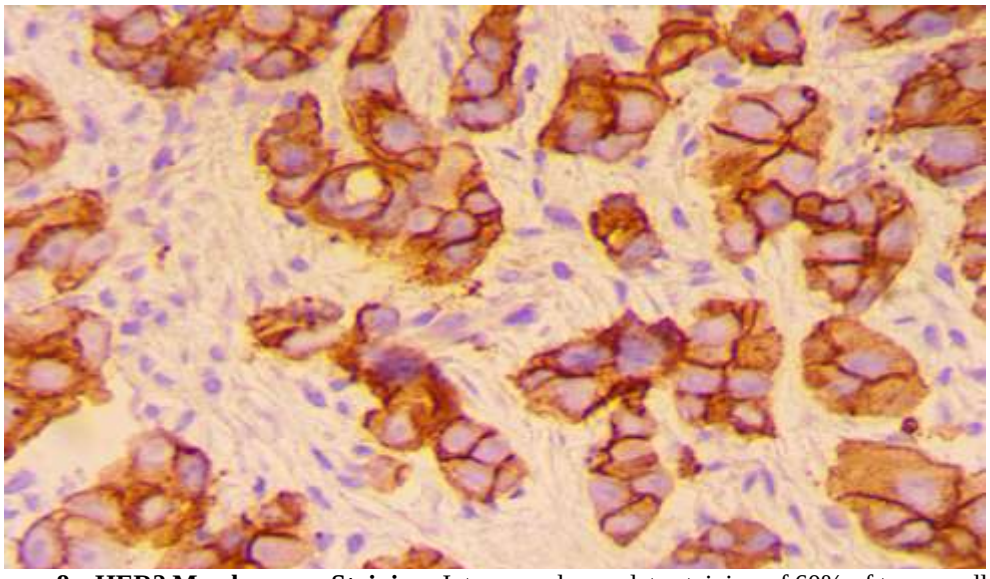

Figure 8:- HER2 Membranous Staining: Intense and complete staining of 60% of tumor cells

HER2 Score: 3 (indicating a high level of HER2 expression)

CTAP (Computed Tomography Angiography of the Pulmonary Arteries):

1. Large left pleural effusion
2. Large pericardial effusion
3. Bilateral osteocondensation plaque of the sacroiliac joint of secondary origin

CA 15-3 (Cancer Antigen 15-3) level:
Normal at 11 units/ml

The patient is referred to the oncology center for primary chemotherapy.

Discussion:-

The invasive micropapillary carcinoma of the breast is a rare and distinct histological variant of breast cancer, accounting for 2 to 3% of all breast carcinomas [1,2].

It was first described by Fisher et al. in 1980 [10] and later recognized as a separate entity by Siriangkul et al. in 1993 [11].

The age range is between 32 and 87 years, with an average of 52 years [4].

The clinical and radiological presentation is not specific and resembles other histological entities [5].

The macroscopic appearance is also non-specific, allowing no diagnostic assumptions [6].

Diagnosis primarily relies on histological study. It is an aggressive histological type due to frequent involvement of the skin, vascular system, and lymph nodes [3], which is consistent with our case. Additionally, the discovery in our patient occurred during an initial pleural biopsy performed by the attending pulmonologists.

Histologically, the tumor exhibits an infiltrating carcinomatous proliferation with focal or predominant micro-papillary architecture. Tumor cells are arranged in nests, clusters, or tubules with reduced lumina within clear spaces lacking endothelial lining. These spaces are considered artifacts related to fixation or may sometimes contain mucoid material staining with mucins [3].

This histological entity is characterized by a lymphophilic profile, as a high incidence of lymph node metastases has been found by several authors, consistent with our case (axillary and supraclavicular lymph node conglomerates were discovered on CTAP scan as part of the staging). The number of affected nodes appears to be an important parameter for prognosis [3] [12].

On immunohistochemical examination, micropapillary carcinoma shows a recognizable inverted polarity with positive staining for EMA [7]. The HER2 staining may also exhibit a peculiar aspect, with negativity in the outer pole of the cells [8,9]. Paradoxically, hormonal receptors as well as HER2 are positive. In our case, hormonal receptors were negative with positive HER2.

Micropapillary carcinoma of the breast presents a challenge in the pathological differential diagnosis with invasive papillary carcinoma, characterized by complex arborescent structures without peripheral clear spaces and often associated with low nuclear grade [3]. Mucinous carcinoma may also be confused with micropapillary carcinoma, as the latter can occasionally secrete mucin without forming the extracellular mucin pools observed in mucinous carcinoma. Micropapillary carcinoma should be distinguished from invasive ductal carcinoma (IDC) without further indication, which includes numerous images of lymphatic emboli [5].

In terms of progression, micropapillary carcinoma of the breast is characterized by its aggressive locoregional nature, manifested by frequent vascular invasion [4], involvement of the skin above, early lymph node metastases, and local recurrence observed in up to 64% of cases within 2 years following treatment [13].

In our patient, locoregional aggressiveness is manifested by lymph node involvement and skin invasion, in addition to serous involvement, making our case exceptional.

However, with equal nodal status, survival is the same as with a classic invasive ductal carcinoma of the same grade. The lack of sufficient data and recent and limited knowledge about this rare entity do not, as of now, allow for a change in the therapeutic protocol. The sentinel lymph node method is not recommended due to the significant risk of lymph node metastasis.

Similarly, the high risk of local recurrence calls for close monitoring of these patients [13,9]. However, the minimal surgical excision margins do not differ from those required for other varieties of breast carcinomas.

Unfortunately, given the advanced stage of detection of this pathology, our patient was initially referred to the oncology center for ongoing primary chemotherapy.

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