

Metaplastic Carcinoma of the breast: How do they present at imaging studies?

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BACKGROUND: The term metaplastic carcinoma of the breast (MCB) includes a rare and diverse group of malignancies that have high-grade nature. Due to their large heterogeneity and different developmental profile, their new pathological sub-classification is descriptive. They clinically manifest as a palpable rapid growth mass. Some series highlighted that they have a poor response to adjuvant chemotherapy relatively to other triple negative tumors.

HYPOTHESIS: MCB account for less than 1% of all invasive breast carcinomas. Pose as a little known and studied entity, probably due to the scarce number of diagnosed cases or to cases misinterpreted as triple negative ductal carcinoma. The literature is conflicting regarding their presentation to imaging methods: in some studies, it's generalized as similar to ductal invasive carcinomas (DIC), while others emphasize their differences. Since they are a pathologically varied group, and they present clinical and therapeutic sensitivity divergences to the DIC, we suggest heterogeneous radiological features within subgroups of MCB and distinct presentation from breast DIC, mainly related to prior's high biological aggressiveness.

METHODS: Cases of MCB of an oncology center were demonstrated in different imaging methods. It was performed histopathological correlation and it was compared to literature data, seeking to create recognizable patterns to better predict prognosis and therapeutic decision.

RESULTS: The MCB does not have a specific descriptor and nor uniform features to imaging methods that allow their characterization as distinct radiological entity. In general, they don't follow the classic pattern of DCIS: the prototype of irregular lumps of spiculated margins in mammography and halo or acoustic shadow in the ultrasound study. In turn, the MCB show signs denoting rapid growth and high aggressiveness as irregular margin but without spikes and central necrosis. In mammography, they are characterized by a hyperdense solitary mass without suspicious microcalcifications associated. In the subtype with bone differentiation, it's important to remark coarse calcifications. To the ultrasound imaging it's described a complex internal echogenicity mass, indicating necrosis and cystic degeneration at pathology, with regular or microlobulated margins. At MRI, they present as a mass with the hypo to isosignal in T1WI, with areas of hyperintensity in T2WI, ring enhancement, and uptake contrast curves type 2 or 3.