

Usefulness of immunohistochemical markers of myoepithelial cells in the diagnosis of invasive carcinoma of the breast

Utilidad de los marcadores inmunohistoquímicos de células mioepiteliales en el diagnóstico de carcinoma invasor de la mama

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Breast cancer is the most common type of cancer worldwide according to statistical analyses by GLOBOCAN (2018), with an incidence rate of > 45 cases per 100 000 inhabitants, followed by prostate and lung cancer. In Mexico, it is the 2nd most common type of cancer among the population only second to prostate cancer. However, this type of cancer has the highest incidence rate among the female population, accounting for 25% of the cases, and has an estimated mortality rate of 16 cases per 100 000 women older than 20 years, meaning that it is the leading cause of cancer death among women in Mexico, being those between 50 and 59 years old the most affected of all¹.

In the interesting article "Predictive factors of invasion in ductal carcinoma in situ diagnosed by core-needle biopsy"², the authors present a series of factors determining the risk of invasion for patients with ductal carcinoma in situ (DCIS), among which they evaluated the results of immunohistochemical studies for estrogen receptor markers, progesterone receptors, HER-2, and Ki-67 proliferation index, without finding a statistical association between the results of these studies and the risk of presenting invasive carcinoma. In this study, immunohistochemical staining for myoepithelial cells was not considered a determining factor for the disruption of intralobular stroma and the subsequent development of invasive carcinoma².

Myoepithelial cells are a normal component of the acini and ducts of exocrine glands, where they are located between secretory epithelial cells and the basal membrane. Morphologically, they are thin and

spindle-shaped, similar to smooth muscle cells, with an irregular cellular nucleus, adjacent to the basal membrane, and display a stellate appearance cytoplasm, with numerous extensions interdigitating with similar extensions of adjacent myoepithelial cells³.

These cells have multiple functions, including assisting in secretion progression through their contractions, serving as a barrier between connective tissue and epithelium by forming the basal membrane, performing support functions, as well as paracrine functions of organization and polarity. They are present in sweat glands, salivary glands, mammary glands, lacrimal glands, and the prostate⁴.

Invasive breast carcinoma is defined as a histopathological lesion in which neoplastic breast tissue penetrates the basal membrane of the ductal lobular unit, spreading into the adjacent stroma with a higher risk of generating disseminated disease through lymphatic or neural routes³.

The immunohistochemical markers that allow delineation of the basal membrane of the acinar structures of the breast are mainly p40, p63, the heavy chain of smooth muscle myosin, calponin, CK5/6, and CK5, which highlight the intact surrounding layer of myoepithelial cells but may be attenuated vs normal ductolobular mammary structures, especially in patients with high-grade DCIS, thus confirming the diagnosis of invasive carcinoma⁵.

Considering the ability of these immunohistochemical markers to determine invasion of mammary stroma, their application in the study to determine the

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development of invasive carcinoma would have been useful. Therefore, these variables should be analyzed in subsequent studies to determine the risk for patients.

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Conflicts of interest

None declared.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors declare that no patient data appear in this article.

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