A subset of breast cancer predisposes to brain metastasis.


Department of Pathology, Shenzhen Affiliated Hospital, Guangzhou University of Traditional Chinese Medicine, Shenzhen, China.

Abstract

This study evaluated the expression of biological markers of breast cancers with brain metastases. Eighteen paired tumors were assessed, with 42 non-brain-metastasizing breast cancers that were stained with ER, PR, HER2, CK5/6, p63, and Ki67, and were also classified into intrinsic subtypes. The expression patterns between the breast tumors with brain metastases were compared to the brain metastases and the controls. Breast cancers with brain metastases were of higher grade and showed higher incidence of lymph node metastases at initial diagnosis and higher EGFR, p63, and Ki67 expression. In the group of breast cancers with brain metastases, the brain metastases showed higher HER2, CK5/6, and Ki67 expression compared to the breast primaries. There was also a higher incidence of basal subtype and a lower incidence of luminal subtype. When tumors metastasized, changes in hormonal receptor (22%) and HER2 (6%) status were observed. We concluded that breast cancers with higher grade, lymph node involvement at diagnosis, high EGFR, p63, and Ki67 expression, and of basal subtype were at higher risk for brain metastases, and that both hormonal receptors and HER2 status may change in brain metastases.

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