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Clinicopathological Characteristics of Breast Tumors with Neuroendocrine Features: A Retrospective Case Series

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Abstract

Introduction: Breast neoplasms with neuroendocrine characteristics form a rare and heterogeneous group that includes both invasive carcinomas showing neuroendocrine differentiation and primary neuroendocrine tumors arising in the breast. Because these lesions are uncommon, their clinicopathological features and biological behavior are still not fully elucidated.

Methods: We conducted a retrospective analysis of 22 patients diagnosed with breast tumors showing neuro-endocrine features and treated in 1st Surgical Unit of Regional Institute of Oncology, Iasi. Clinicopathological characteristics, immunohistochemical profile and treatment patterns were analyzed.

Results: The median age at diagnosis was 66.1 years (range: 35–83). Most tumors corresponded to invasive carcinoma of no special type with neuroendocrine differentiation, while a smaller subset fulfilled the criteria for primary neuroendocrine neoplasms of the breast. Immunohistochemical analysis revealed a predominantly luminal immunophenotype, characterized by strong estrogen receptor expression and absence of HER2 overexpression. T0he median Ki-67 proliferation index was 40.3%. Lymph node involvement was observed in 45.5% of cases. All patients were treated according to standard breast cancer protocols, including surgery, chemotherapy, endocrine therapy and radiotherapy when indicated. The median follow-up was 26 months. Survival analysis included 20 patients with available follow-up data, while 2 patients were lost to follow-up. During the follow-up period, 9 deaths were recorded, corresponding to an overall mortality rate of approximately 45%.

Conclusions: In our study, breast tumors with neuroendocrine features exhibited a luminal immunophenotype and did not demonstrate a clearly distinct clinical behavior compared with conventional hormone receptor–positive breast cancer. Neuroendocrine differentiation may therefore represent a morphological feature within the luminal spectrum rather than a distinct biological entity.

Keywords: breast cancer, neuroendocrine differentiation, breast surgery, multidisciplinary management