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# Can Morphological and Molecular Parameters of the Primary Breast Tumor Predict the Positivity of Nonsentinel Lymph Nodes After Positive Sentinel Lymph Node Biopsy?

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**Abstract**
*Background:* Sentinel lymph node (SLN) biopsy is the gold standard in the evaluation of the axillary status in patients with breast cancer. In cases meeting the Z0011 criteria, no further surgery is needed, while in the remaining cases axillary dissection is required. The aim of the study was to evaluate which morphological and molecular parameters of primary breast tumor or positive SLN can predict the positivity of nonsentinel lymph nodes (NSLN) in order to avoid unnecessary axillary lymphadenectomy.
*Methods:* We conducted a retrospective study on 170 consecutive invasive breast carcinomas, in which SLN biopsy was performed for staging.
*Results:* 42 (24%) cases presented SLN metastases, of which 11 were micrometastases, 6 cases met the Z0011 criteria, requiring no subsequent surgery. 25 patients underwent subsequent ANLD, but only 7 cases (28%) had positive NSLN. In this series, only the tumor diameter >20 mm can predict positive nonsentinel lymph nodes (p= 0.058; CI: 0.05787 to 0.8224). Other parameters such as patient's age (p=0.280; CI:0.7544 to 7.998), histological type (p=0.231; CI: 0.05374 to 9.271), histological grade (p=0.929; CI: 0.2351 to 3.515), molecular profile of the tumor (p=0.362; CI: 0.2416 to 4.663), number of positive SLN (p=0.378; CI: 0.1083 to 1.570), presence of extracapsular extension (p=0.625; CI: 0.5066 to 13.96) and lymph node ratio (p=0.656; CI: 0.5068 to 5.768) cannot predict the presence of metastasis in the NSLN.
*Conclusion:* In cases in which the patient does not meet the Z0011 criteria and/or these criteria are not used, axillary lymph node dissection is the surgical treatment of choice.
**Key words:** breast cancer, metastasis, sentinel lymph node