CLINICAL AND HISTOPATHOLOGICAL AXILLARY ASSESSMENT

Avaliação clínica e histopatológica axilar após esvaziamento por câncer de mama

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ABSTRACT

Introduction: The proper selection of patients for sentinel lymph node biopsy is essential and depends on the evaluation of the patient's prediction for lymph node involvement and an evaluation of the accuracy of the clinical examination. Objective: This study aimed to evaluate the axillary contents of 102 breast cancer patients with tumors between 3 and 5 centimeters who underwent axillary dissection between January 2010 and December 2013. Methods: The data were categorized according to positive or negative axillary clinical evaluation and positive or negative anatomopathological evaluation. Results: The value for positive predictive values for physical examination was 83.5% and the negative predictive value was 34.88%. In addition, axillary physical examination showed 63.6% sensitivity and 60% specificity. Most patients with axillary involvement in the anatomopathological evaluation correlated with tumor grade, size, location and angiolymphatic invasion. Conclusion: It is believed that a better evaluation of the prediction of lymph node involvement, considering some clinicopathological risk factors in patients with suspicious lymph nodes, should be performed to aid the preoperative study of the axilla and the axillary approach screening.

KEYWORDS: Breast cancer; sentinel lymph node; diagnostic techniques, surgical.

RESUMO

Introdução: Atualmente, precisamos selecionar adequadamente as pacientes a serem submetidas à biópsia de linfonodo sentinela. Para isso, são imprescindíveis a avaliação da predição daquele paciente acerca do comprometimento linfonodal e a avaliação da acurácia do exame clínico. Objetivo: O presente estudo teve como objetivo avaliar o conteúdo axilar de pacientes portadoras de câncer de mama com tumores entre três e cinco centímetros submetidas ao esvaziamento axilar entre 2010 e 2013, por meio da análise de 102 prontuários. Métodos: Os dados foram categorizados segundo a avaliação clínica axilar positiva ou negativa e a avaliação anatomopatológica positiva ou negativa. Resultados: Observaram-se valor preditivo positivo do exame físico de 83,5% e preditivo negativo de 34,88%. O exame físico axilar mostrou sensibilidade de 63,6% e especificidade de 60%. A maioria das pacientes com comprometimento axilar no anatomopatológico mostrou correlação com o grau tumoral, tamanho, localização e invasão angiolinfática. Conclusão: Acredita-se que uma melhor avaliação quanto à predição do comprometimento linfonodal, levando em consideração alguns fatores clinicopatológicos de risco nas pacientes com linfonodos suspeitos, deve ser feita como auxílio no estudo pré-operatório da axila e triagem no tocante à abordagem axilar.

PALAVRAS-CHAVE: Neoplasias da mama; linfonodo sentinela, técnicas de diagnóstico por cirurgia.

INTRODUCTION

Lymph node surgery in the treatment of breast cancer is focused on sentinel lymph node biopsy (SLNB)[1,2]. Currently, one of the principal contraindications for SLNB is the presence of clinically suspicious axillary lymph nodes. Despite this, physical examination is not a sensitive or reliable method to determine axillary status, since metastatic lymph nodes are often not palpable and reactive lymph nodes can be confused with metastatic nodes[3]. Thus, clinical examination of the axilla is highly susceptible to false-positive results and insufficiencies and cannot justify axillary lymphadenectomy[4].

The objective of this study was to evaluate lymph node involvement and the accuracy of the clinical examination of patients with tumors between 3 and 5 centimeters in order to compare the axillary approach.

MATERIALS AND METHODS

A retrospective study was carried out by analyzing the medical records of 102 breast cancer patients with invasive carcinoma of no special type (NST), with tumors between 3 and 5 centimeters, who underwent axillary lymph node dissection in the Mastology Service of the Liga Norte-Riograndense Contra o Câncer (LNRCC), in Natal, Rio Grande do Norte, Brazil, from 2010 to 2013. Patients receiving neoadjuvant chemotherapy were excluded. According to the LNRCC protocol at

this time, all patients with tumors greater than 3 centimeters were automatically submitted to axillary lymph node dissection. Axillary dissection analysis was performed by standard techniques on hematoxylin/eosin stained from each lymph node sampled.

RESULTS

It was observed that 57.84% of the 102 patients were classified with positive axillary clinical staging, and, after the anatomopathological evaluation (AP), 75.49% of them presented a positive pathological axillary exam (Table 1). Thus, 83.05% of the patients with a clinically positive axilla had axillary involvement confirmed in the AP, with *odds ratio* (OR) = 23.84; 95% confidence interval (95% CI) 11.39–49.87, and p <0.0001. However, 65.12% of the patients who were

Table 1. Anatomoclinical correlation of axillary evaluation.

Physical exam	Positive axilla AP n (%)	Negative axilla AP n (%)	Total n (%)	OR (95%CI)	p
Positive (n=59)	49 (83.05)*	10 (16.95)	59 (100)	23.84 (11.39–49.87)	<0.0001
Negative (n=43)	28 (65.12)*	15 (34.88)	43 (100)	3.44 (1.92–6.16)	<0.0001

AP: anatomopathological evaluation; OR: *odds ratio*; 95%CI: 95% confidence interval; *statistically significant (p <0.0001) using Fisher's exact test.
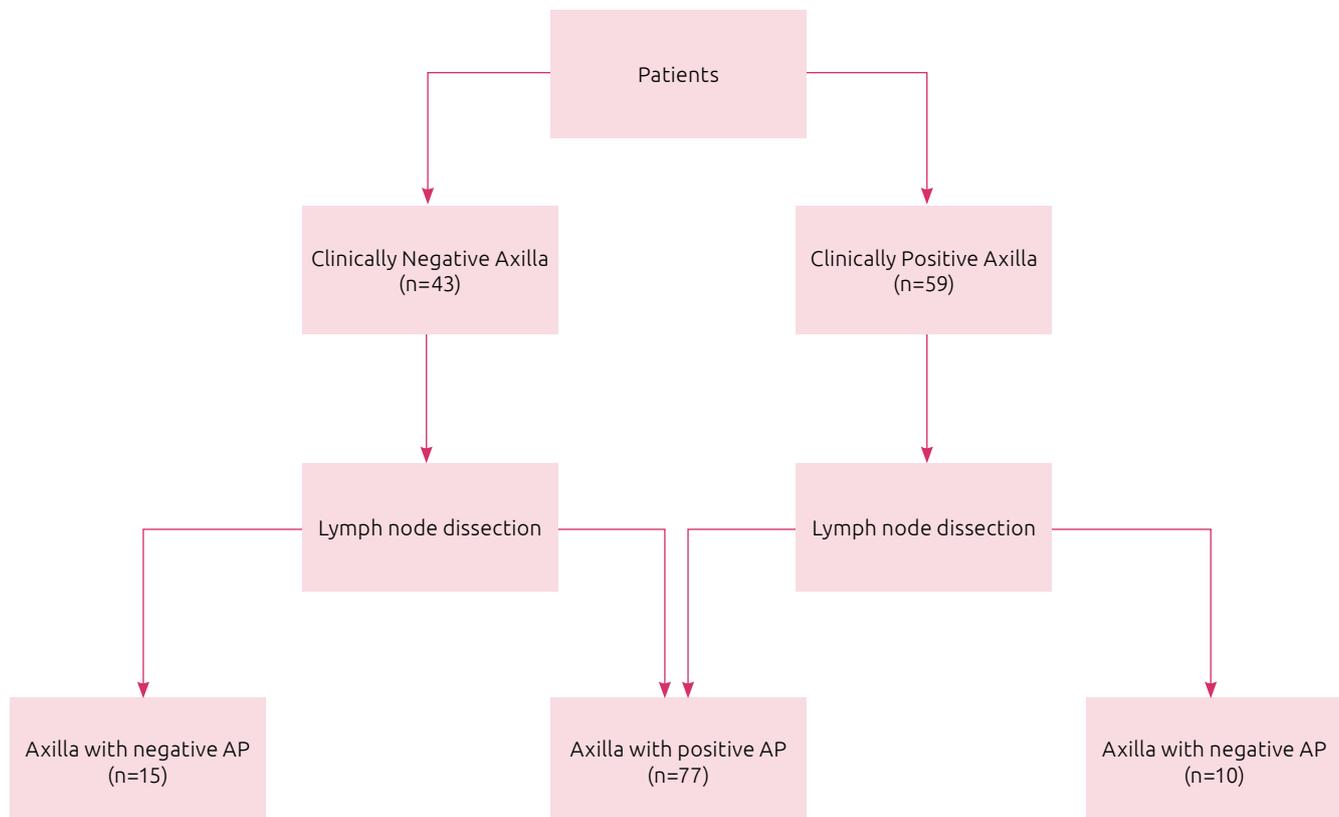
AP: anatomopathological evaluation.
Figure 1. Distribution of patients by clinical and pathological evaluation.

clinically negative in the clinical axillary examination had involvement in the AP (OR = 3.44; 95%CI 1.92–6.16; p <0.0001) (Table 1).

Regarding the level of axillary involvement, according to the TNM staging system, 44.90% of the patients with a clinically positive examination were classified as N1 during the AP, and 20.40% were classified as N3. Among the patients who had a negative clinical examination with axillary anatomopathological involvement (false-negative), 71.43% were classified as N1 and 10.71% as N3. Predominance of four or more involved lymph nodes in the AP of patients with a clinically positive axilla on physical examination was observed (OR = 11.22; 95%CI 5.8–21.6) (Table 2).

DISCUSSION

In the present study, it was observed that 57.84% of the patients had a positive axillary clinical staging, but 16.95% had negative histopathological result. A similar result was found by Lanng et al.[5], in which 16.9% of the patients with palpable lymph nodes were histologically negative. However, these false-positive rates were lower than the National Surgical Adjuvant Breast and Bowel Project (NSABP) 4, in which 30% of the lymph nodes considered to be clinically positive had no metastasis upon histological examination[6], and the study performed at the Memorial Sloan Kettering Cancer Center (MSKCC)[4], in which the clinical examination failed in 41% of the cases. In the present study, the false-negative was high (65.12%), while the positive predictive value (PPV) was 83.51%, the negative predictive value (NPV) was 34.88%, and the accuracy was 62.75%. The results are similar to those of Lanng et al.[5], with a NPV of 38.5% and PPV of 84.4%[5]. In the present investigation, we observed an unnecessary axillary lymph node dissection in 16.95% of the cases, due to SLNB being contraindicated.

71.43% of the patients with negative clinical examination with axillary histopathological involvement, *i.e.*, the false-negatives, were classified as N1, and only 10.71% were classified as N3. These data are important for the study principles of the American College of Surgeons Oncology Group (ACOSOG) Z0011, as the majority of patients with clinically negative axilla (71.43%) was classified as N1 and could benefit from a resection of only up to three lymph nodes, if only one or

two sentinel lymph nodes were involved, and thus not altering the overall survival rate or local recurrence[7], showing the correlation of axillary clinical evaluation with lymph node tumor load.

Finally, the majority of patients with anatomic pathological axillary involvement showed correlation with tumor grade, size, location and angiolymphatic invasion (Table 3).

Table 3. Clinical and pathological factors and axillary involvement.

	Positive axilla AP n (%)	Negative axilla AP n (%)	OR (95%CI)	p
Age				
<50	21 (84.0)**	4 (16.0)	27.56 (12.94–58.72)	<0.0001
≥50	56 (72.7)**	21 (27.3)	7.31 (3.91–13.65)	<0.0001
Tumor size				
3–3.99 cm	37 (67.0)**	18 (33.0)	4.12 (2.28–7.43)	<0.0001
4–5 cm	40 (85.0)**	7 (15.0)	32.11 (14.77–69.80)	<0.0001
Angiolymphatic invasion				
Yes	34 (81.0)**	8 (19.0)	18.17 (8.96–36.85)	<0.0001
No	42 (71.0)**	17 (29.0)	5.99 (3.25–11.04)	<0.0001
No information	1 (100.0)**	–	–	<0.0001
Histological grade				
1	–	1 (100.0)	–	<0.0001
2	23 (69.7)**	10 (30.3)	5.44 (2.97–9.97)	<0.0001
3	54 (79.4)**	14 (20.6)	14.15 (7.16–27.95)	<0.0001
Nuclear grade				
1	–	1 (100.0)	–	<0.0001
2	16 (61.5)*	10 (38.5)	2.66 (1.50–4.71)	0.0011
3	61 (81.3)**	14 (18.7)	18.17 (8.96–36.85)	<0.0001
Immunohistochemistry				
Luminal A/B	52 (74.3)**	18 (25.7)	8.10 (4.30–15.24)	<0.0001
Triple -	5 (55.5)	4 (44.4)	1,62 (0.92–2.83)	ns
HER-2 +	8 (100)**	–	–	<0.0001
Hybrid	9 (90.0)**	1 (10.0)	81 (32.15–204.1)	<0.0001
No information	3 (60.0)*	2 (40.0)	2.25 (1.27–3.96)	0.0071

AP: anatomopathological evaluation; OR: *odds ratio*; 95%CI: 95% confidence interval; ns: not significant; *statistically significant (p≤0.01) by Fisher's test; **statistically significant (p≤0,0001) using Fisher's exact test.

Table 2. Level of axillary involvement.

Positive axilla AP (n=77)	Clinically positive axilla n (%)	Clinically negative axilla n (%)	Total n (%)	OR (95%CI)	value
N1	22 (52.3)	20 (47.7)	42 (100.0)	1.17 (0.67–2.04)	ns
N2	17 (77.3)*	5 (22.7)	22 (100.0)	11,22 (5.8–21.6)	<0.0001
N3	10 (77.0)*	3 (23.0)	13 (100.0)	11.22 (5.8–21.6)	<0.0001

AP: anatomopathological evaluation; OR: *odds ratio*; 95%CI: 95% confidence interval; ns: not significant; *statistically significant (p <0.0001) using Fisher's exact test.

CONCLUSION

Clinical axillary evaluation as a criterion for the indication for SLNB is imprecise. Clinical examination of the axilla is highly susceptible to false-positive and negative results and is insufficient for the justification of axillary lymphadenectomy. A better evaluation of the prediction of lymph node involvement is important, considering some clinical and pathological risk factors in patients with suspicious lymph nodes.

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