PS5-06-17 Sentinel lymph node biopsy after neoadjuvant chemotherapy in patients with breast cancer using blue dye alone: Results from a multicenter study in Public Hospitals in Brazil

Carolina. Teixeira de Assis Lopes[1], **Rafael Henrique Szymanski Machado**[2], Silmara Teixeira Alves Trota[1], Tâmara Caldas Orge[3], L.orena Varjão Oliveira[3], Daniele Pitanga Torres[2], Filipe Bacellar de Faria[3], Stéphane Paiva[2], Luriê Kramer Piana[2], José Bines[4]
1. Instituto Oncologico Juiz de Fora, Juiz de Fora, Brazil, 2.Hospital Federal da Lagoa, Rio de Janeiro, Brazil, 3.Hospital da Mulher, Bahia, Brazil, 4.Instituto Nacional do Câncer, Rio de Janeiro, Brazil

Abstract

Introduction: Breast cancer surgery has evolved from radical procedures to more conservative approaches, with emphasis on sentinel lymph node biopsy (SLNB) in recent decades. The safety of this technique in cN1/N2 scenarios remains a reason for discussion, especially given the lack of resources such as dual tracer techniques (using both blue dye and technetium for sentinel node identification) and lymph node clip placement in public health systems of developing countries. **Methods:** This multicenter retrospective study analyzed 369 breast cancer patients treated with NAC between 2017 and 2021 at three public hospitals in Brazil. **Objective:** The primary objective was to evaluate axillary recurrence in patients who were initially cN1/N2 and converted to cN0 using blue dye alone. **Results:** Among patients who underwent SLNB using blue dye alone as the sole mapping method, the axillary recurrence rate was 2.4% in the group initially with clinically negative axilla (cN0) and 2.6% in the initially cN1/N2 group, with no statistical difference. Overall survival (OS) was also similar, at 94.1% in the cN0 group and 89.7% in the cN1/N2 group, without statistical significance (p=0.255), as were the other survival outcomes analyzed. When comparing initially cN1/N2 patients who underwent SLNB or ALND, similar axillary recurrence rates were observed: 2.6% in the SLNB group and 2.3% in the ALND group. OS of 89.7% and 87.8%, respectively, also showing no statistically significant difference. Other outcomes, including local and locoregional recurrence, disease-free survival, distant disease-free survival and overall survival, also showed similar results between groups. **Conclusion:** SLNB with blue dye alone, even without complementary techniques, demonstrated acceptable oncologic safety in patients who converted to cN0 after NAC.

Introduction

Breast cancer surgery has evolved from radical procedures to more conservative approaches, with emphasis on sentinel lymph node biopsy (SLNB) in recent decades,. This surgical procedure reduces morbidity without compromising oncologic control. The introduction of neoadjuvant chemotherapy (NAC) has expanded the use of SLNB, even in patients with initially clinically positive axilla (cN1/N2) who converted to clinically negative status after treatment. However, the safety of this technique in cN1/N2 scenarios remains a reason for discussion, especially given the lack of resources such as dual tracer techniques (using both blue dye and technetium for sentinel node identification) and lymph node clip placement in public health systems of developing countries.

Methods

Patients diagnosed with breast cancer cT1-3 N0 or cN1/2 at three public hospitals in Brazil from 2017 to 2021, treated with neoadjuvant chemotherapy and converted to cN0 were included. These patients received SLNB using only blue dye or received ALND after NAC.

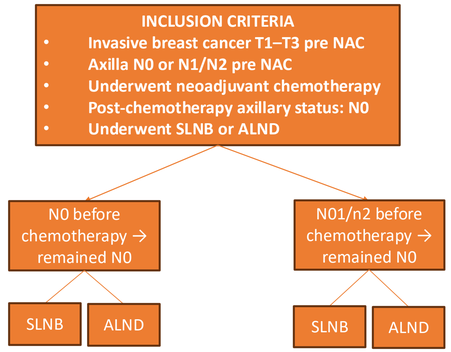


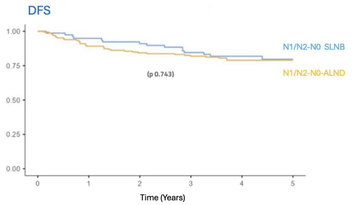
Figure 1. Study Design

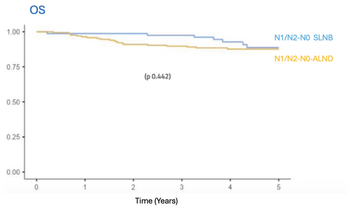
Table 1. Comparison of outcomes between the groups undergoing SLNB and ALND, regardless of initial axillary status

Group	Axillary Recurrence	Local Recurrence	Locoregional Recurrence
N0→N0→SLNB + N1/N2→N0→SLNB	4 (2.5%)	9 (5.5%)	25 (15.3%)
N0→N0→ALND + N1/N2→N0→ALND	4 (1.9%)	9 (4.4%)	33 (16.0%)
p-value	**0.736**	**0.610**	**0.858**

Results

Among patients who underwent SLNB using blue dye alone as the sole mapping method, the axillary recurrence rate was 2.4% in the group initially with clinically negative axilla (cN0) and 2.6% in the initially cN1/N2 group, with no statistical difference. Overall survival (OS) was also similar, at 94.1% in the cN0 group and 89.7% in the cN1/N2 group, without statistical significance (p=0.255), as were the other survival outcomes analyzed. When comparing initially cN1/N2 patients who underwent SLNB or ALND, similar axillary recurrence rates were observed: 2.6% in the SLNB group and 2.3% in the ALND group. OS of 89.7% and 87.8%, respectively, also showing no statistically significant difference. Furthermore, when all 163 patients who underwent SLNB were grouped regardless of initial axillary status and compared to the 206 patients who underwent ALND, the axillary recurrence rates remained comparable: 2.5% in the SLNB group and 1.9% in the ALND group. Other outcomes, including local and locoregional recurrence, disease-free survival, distant disease-free survival and overall survival, also showed similar results between groups.





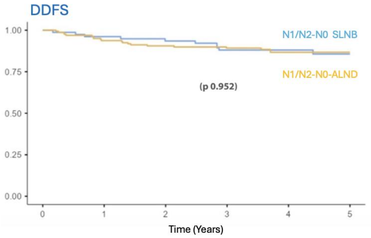


Figure 2. Disease-free survival, overall survival, and distant disease-free survival – comparison between the initial cN1/N2 group undergoing SLNB and the initial cN1/N2 group undergoing ALND

Discussion

In this multicenter retrospective study, we observed that patients with initially positive axilla (cN1/N2) who achieved a complete clinical response in the axilla after neoadjuvant therapy (NAT) and underwent SLNB with a single marker showed axillary, local, and locoregional recurrence rates similar to those of patients who underwent axillary dissection. Moreover, there were no statistically significant differences in disease-free survival (DFS), distant disease-free survival (DDFS), or overall survival (OS) between the groups (Figure 2). These findings are particularly relevant considering the median follow-up time of 4.7 years, suggesting that, even with the potential for a higher false-negative rates, SLNB using blue dye alone after NAC is a safe strategy in this study scenarios.

Conclusions

SLNB with blue dye alone, even without complementary techniques, demonstrated acceptable oncologic safety in patients who converted to cN0 after NAC. These findings are especially relevant in resource-limited settings and support the use of less invasive strategies to reduce complications without compromising therapeutic effectiveness.

Contact

Carolina Lopes
E-mail: carollopes1809@hotmail.com

1. Filipe Bacellar
E-mail: filipe.bacellar@gmail.com

Rafael Machado
E-mail: rafaszymanski@hotmail.com

Daniele Pitanga
E-mail: danipitangatorres@yahoo.com.br

Jose Bines
E-mail: jose_bines@yahoo.com

References

1. KAHLER-RIBEIRO-FONTANA, Sabrina et al. Long-term standard sentinel node biopsy aftemeoadjuvant treatment in breast cancer: a single institution ten-year follow-up. EuropeanJournal of Surgical Oncology, v. 47, n. 4, p. 804–812, abr. 2021.
2. BOUGHEY, Judy C. et al. Changes in Surgical Management of the Axilla Over 11 Years –Report on More Than 1500 Breast Cancer Patients Treated with Neoadjuvant Chemotherapyon the Prospective I-SPY2 Trial. Annals of Surgical Oncology, v. 30, n. 11, p. 6401–6410,out. 2023.
3. CAUDLE, Abigail S. et al. Improved Axillary Evaluation Following Neoadjuvant Therapy forPatients with Node-Positive Breast Cancer Using Selective Evaluation of Clipped Nodes:Implementation of Targeted Axillary Dissection. Journal of Clinical Oncology, v. 34, n. 10,p. 1072–1078, 1 abr. 2016.
4. CAVALCANTE, Francisco Pimentel et al. The use of blue dye alone for sentinel lymph nodebiopsy after neoadjuvant chemotherapy in patients with initially node-positive breast cancer.European Journal of Surgical Oncology, v. 50, n. 3, p. 107967, mar. 2024
5. BOILEAU, Jean-Francois *et al.* Sentinel Node Biopsy After Neoadjuvant Chemotherapy in Biopsy-Proven Node-Positive Breast Cancer: The SN FNAC Study. Journal of ClinicalOncology, v. 33, n. 3, p. 258–264, 20 jan. 2015.
6. BOUGHEY, Judy C. Sentinel Lymph Node Surgery After Neoadjuvant Chemotherapy in patients with Node-Positive Breast Cancer: The ACOSOG Z1071 (Alliance) Clinical TrialJAMA, v. 310, n. 14, p. 1455, 9 out. 2013.
7. KUEHN, Thorsten *et al.* Sentinel-lymph-node biopsy in patients with breast cancer before and after neoadjuvant chemotherapy (SENTINA): a prospective, multicentre cohort study. The Lancet Oncology, v. 14, n. 7, p. 609–618, jun. 2013.

This presentation is the intellectual property of the author/presenter. Contact them at rafaszymanski@hotmail.com for permission to reprint and/or distribute.

© Poster Template by Genigraphics® 1.800.790.4001 www.genigraphics.com