

Differentiating Transient Fluid Retention From True Lymphedema: A Novel Perspective After LYMPHA With Axillary Surgery In Breast Cancer Survivors

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INTRODUCTION

- Lymphedema remains a major concern for Breast Cancer Survivors undergoing axillary surgery
- We hypothesize that immobility can lead to measurable changes in bioimpedance spectroscopy (BIS), which may be reversible six months after surgery and distinct from true lymphedema characterized by anatomical disruptions in lymphatic flow
- This essential aspect that remains unexplored pertains to the temporal relationship between lymphedema and the timing of surgery
- We introduce the concept of "Transient fluid retention," referring to the development of abnormal BIS post-axillary surgery, with the encouraging observation that many patients experience resolution within a year or more during follow-up

AIM

- To compare changes in the L-DEX (BIS) measurement after surgery with respect to time every 3 months after surgery

METHODS

- **Study Design:** Retrospective cohort study
- **Inclusion Criteria:** Breast cancer patients undergoing axillary dissection with LYMPHA (Lymphatic Microsurgical Preventing Healing Approach)
- **Time period:** February 2021 and June 2022
- **Follow-up:** 1.5 years
- An L-DEX (Bioimpedance spectroscopy) score outside the normal range (± 10 L-DEX unit) or ≥ 10 L-DEX unit increase above the patient's baseline was considered abnormal

RESULTS

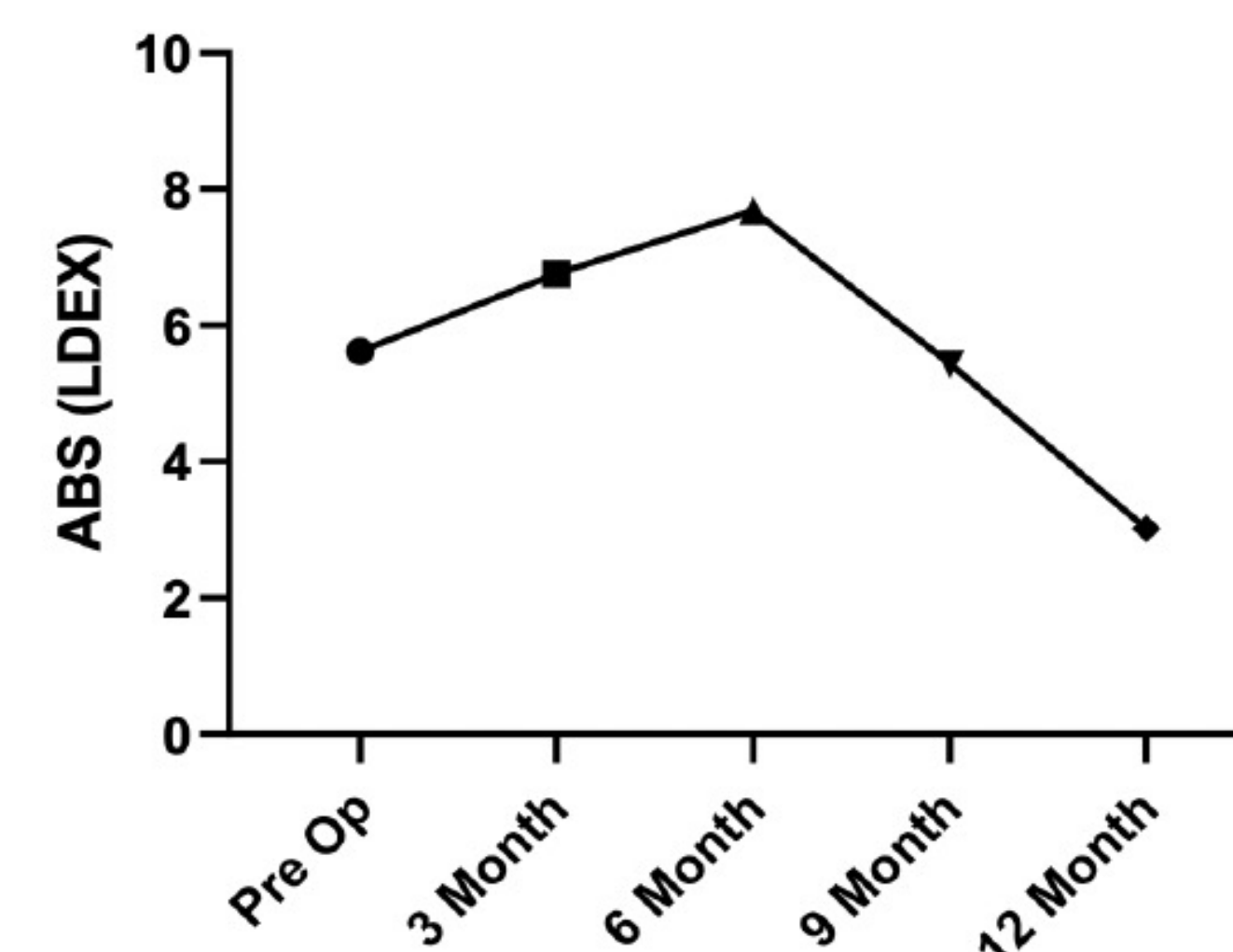


Figure 1: The absolute value of the LDEX score of the 14 patients who developed an abnormal LDEX reading at some point postoperatively.

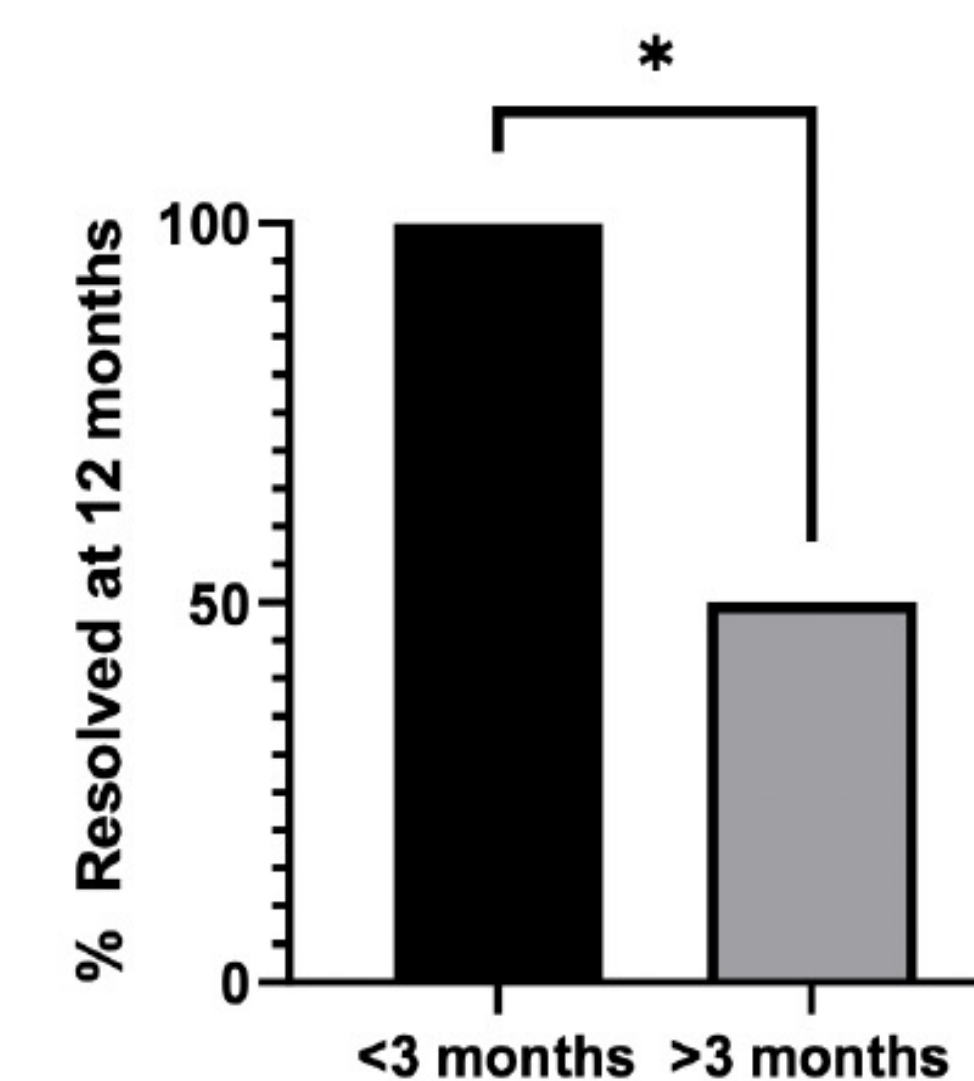


Figure 2: Highest resolution of L-DEX Score in scores detected at 3 months (p=0.0118)

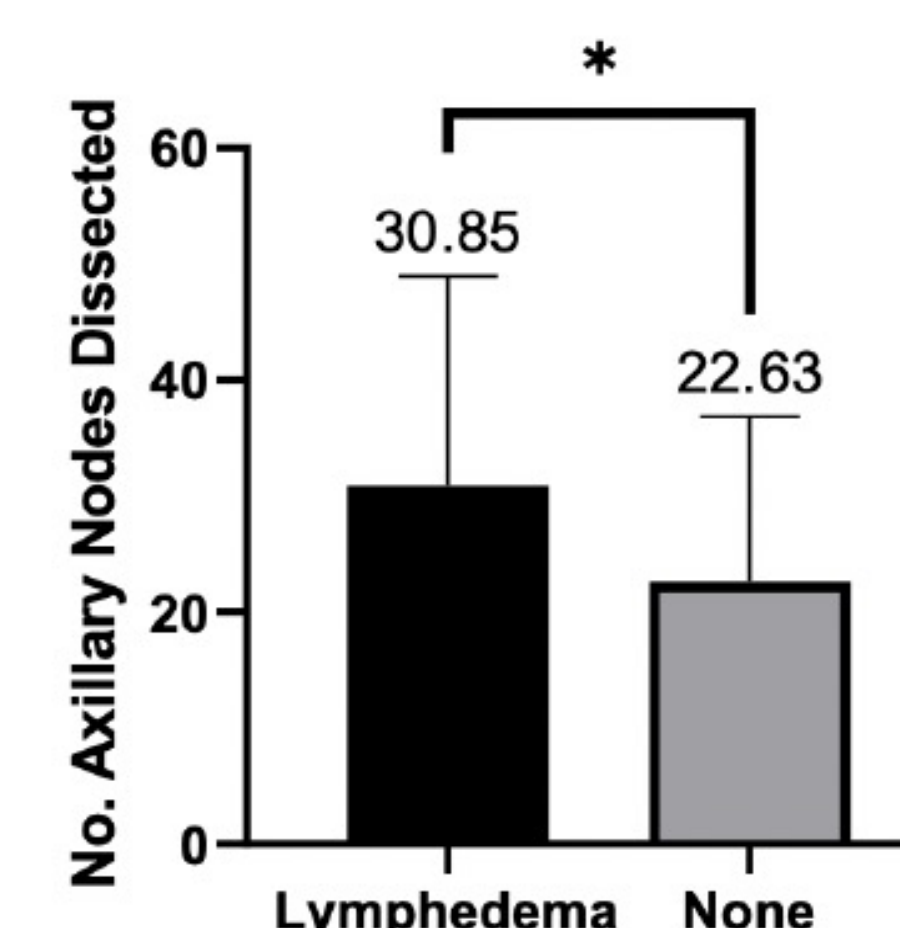


Figure 3: Co-relation between Number of Lymph Nodes dissected and Lymphedema

- 46 patients met the inclusion criteria
- Mean age of 51.4 years [SD 10.5] and mean BMI of 27.57 kg/m² [SD 5.58]
- 40 (86.9%) received adjuvant radiation while 39 (84.7%) received neoadjuvant chemotherapy
- At 3 or 6 months postoperatively, 15.2% (n=7) patients were identified with an abnormal L-DEX score
- Of the 7 patients who had an abnormal L-DEX score within the first 6 months, 5 (71.4%) had abnormal L-DEX reading at 12 months
- Of the 16 patients with abnormal L-DEX regarding any time period, 14 (87.5%) had a resolution after a follow-up beyond 12 months. The trend of their L-DEX score for these 14 patients is shown in Figure 1
- Abnormal L-DEX Score developing within 3 months postoperatively were 2 times more likely to resolve by 12 months compared to those developed after 3 months (p=0.0118)(Figure 2)
- 92.85% of patients who developed an abnormal L-DEX Score at some time period had adjuvant radiation compared to 86.9% of patients who never had an abnormal L-DEX reading, although not statistically significant due to a very small cohort without radiation
- Patients with lymphedema had a higher number of nodes resected compared to patients without lymphedema (30.85 vs 22.63, p=0.045) (Figure 3)

CONCLUSION

- Most (71.4%) increases in L-DEX scores seen in the first 6 postoperative months showed resolution
- Developing an increased L-DEX score earlier in the postoperative period (<3 months) increases the likelihood of resolution by 12 months
- Patients with persistently elevated L-DEX scores at or past 12 months are most likely to have developed an abnormal score at the 6 -6-months
- Physical therapy to achieve mobility should be initiated in the early postoperative period to prevent the transient increase in L-Dex scores.