



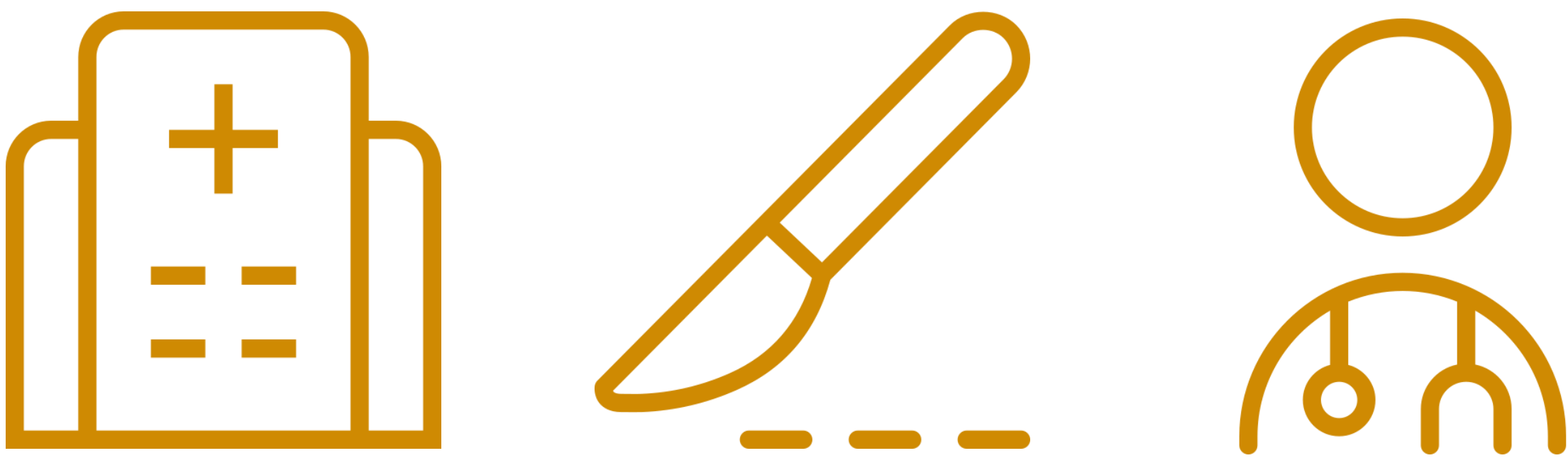
The Incidence of Breast Lymphedema Following Oncoplastic Reduction Mammoplasty

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Introduction

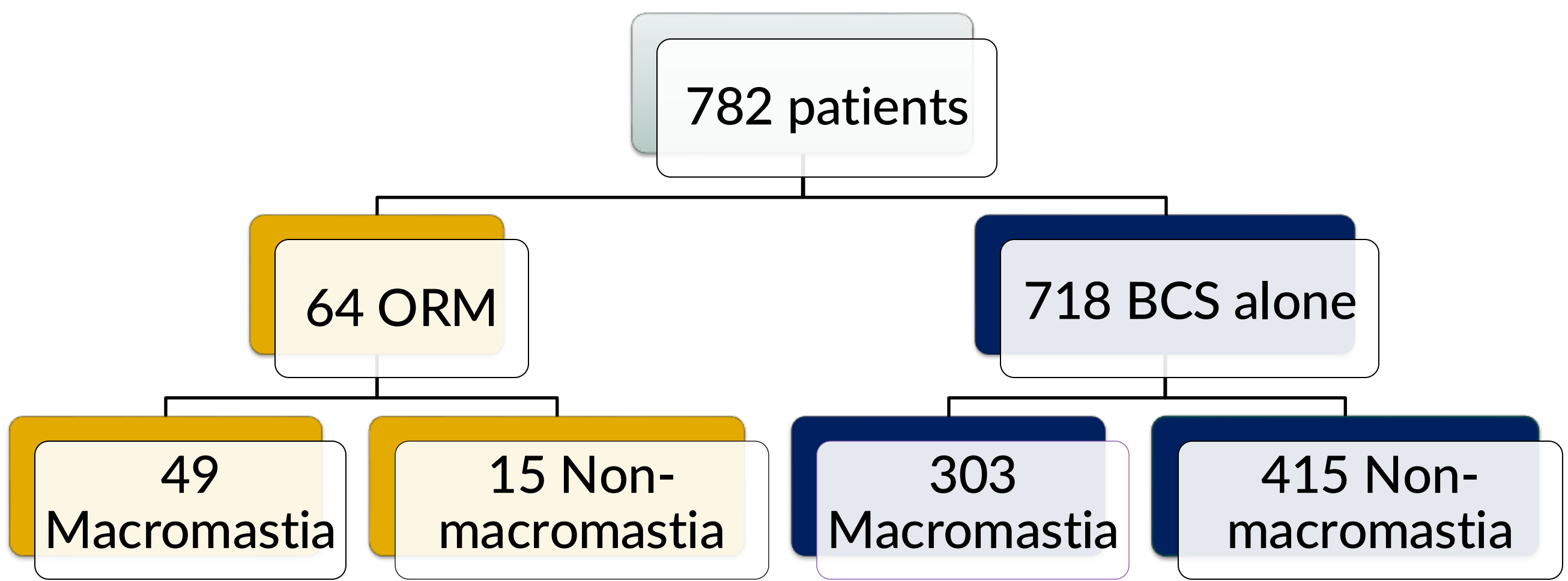
- Breast lymphedema (BL), a condition defined as poor lymphatic drainage resulting in persistent breast swelling, increases the risks of delayed wound healing, infection, negative body image, and impaired physical functioning.¹⁻³
- As breast conservation surgery (BCS) is the most common breast cancer treatment option, it is vital to investigate the potential risk of BL.
- A recent study from our department found that the likelihood of BL is higher in women with macromastia; these patients account for 40% of all breast cancer patients and must be considered when investigating BCS outcomes.⁴
- Compared to patients without macromastia, patients with macromastia are subject to greater radiation exposure & radiation-induced changes following BCS. They also experience inferior cosmetic outcomes.⁵
- Oncoplastic reduction mammoplasty (ORM) has emerged as an alternative surgical approach that introduces bilateral breast reduction at the time of lumpectomy, decreasing the risk of cosmetic deformity.⁵
- It remains to be determined whether ORM performed at the time of lumpectomy decreases the incidence of breast lymphedema in patients with macromastia. The aim of this study is to determine the impact of ORM on breast lymphedema rates in patients with macromastia compared to patients with macromastia who undergo BCS alone.



Methods

- A retrospective review of women who underwent BCS alone or ORM followed by whole breast radiation from 2016-2023 at a large multicenter cancer institute in Detroit was conducted.
- Patients with clinical stage IV at presentation and patients who received radiation therapy at outside institution were excluded.
- Univariate analysis was conducted to identify differences in postoperative outcomes between women with and without macromastia (defined as preoperative breast volumes $\geq 1500 \text{ cm}^3$).
- Regression analysis was used to evaluate the effects of ORM and the factors associated with breast lymphedema.

Results



- Overall incidence of BL = 10.6%
- Black race, preoperative breast volume $\geq 1500 \text{ cm}^3$, ALND at time of surgery, cellulitis, and arm lymphedema were all associated with increased rates of BL.
- Multivariate regression analysis showed that women with macromastia who underwent BCS alone were **6.575 times more likely** to develop breast lymphedema than patients who underwent ORM ($p=0.014$).

Conclusion

- This study is the first to examine the impact of oncoplastic reduction mammoplasty on the incidence of breast lymphedema.
- ORM is a widely accepted treatment approach because of its capacity to improve cosmesis and perform wider tumor excisions, thus preventing locoregional recurrence.
- In women with macromastia, ORM demonstrates a protective effect against this complication by a factor of over 6.5.
- The benefits of extracting greater breast volumes are therefore clinically meaningful and readily achievable.
- Limitations of this study included its retrospective nature and the limited sample size of patients who underwent ORM.
- Future research that prospectively evaluates patients undergoing ORM may offer strong support for the utility of this approach.

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