Introduction: Immediate breast reconstruction is increasingly performed at the time of mastectomy. However, few studies have examined whether breast reconstruction influences development of lymphedema. We sought to determine the risk of lymphedema associated with immediate breast reconstruction compared to mastectomy alone.

Methods: 616 breast cancer patients who underwent 891 mastectomies between 2005-2013 were prospectively screened for lymphedema at our institution, with 22.2 months median follow-up. Mastectomies were categorized as immediate implant (immediate tissue expander or immediate direct-to-implant), immediate autologous, or no reconstruction. Arm measurements were performed pre-operatively and during post-operative follow-up using a Perometer. Lymphedema was defined as greater than 10% arm volume increase compared to pre-operative baseline. Kaplan-Meier and Cox regression analyses were performed to determine lymphedema rates and risk factors.

Results: Of 891 mastectomies, 65% (580/891) had immediate implant, 11% (101/891) immediate autologous, and 24% (210/891) no reconstruction. The two-year cumulative incidence of lymphedema was: 4.08% (95% CI: 2.59-6.41%) immediate implant, 9.89% (95% CI: 4.98-19.1%) immediate autologous, and 26.7% (95% CI: 20.4-34.4%) no reconstruction. Immediate implant (HR: 0.352, p<0.0001) but not autologous (HR: 0.706, p=0.2151) reconstruction was associated with a significantly reduced risk of lymphedema compared to no reconstruction in a multivariate model adjusting for type of axillary surgery, number of lymph nodes dissected, and Body Mass Index (BMI).

Conclusion: This prospective study suggests that patients who undergo mastectomy with immediate implant reconstruction have a reduced risk of lymphedema compared to mastectomy alone. These findings can be utilized to reassure patients that reconstruction does not increase—and may actually decrease—their risk of developing lymphedema.

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