

# An Evaluation of Safety and Patient Outcomes for Hand Surgery following Prior Breast Cancer Treatment: Establishing New Recommendations in Lymphedema

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## Background

- According to NSQIP, there is 2.5% overall complication rate and 1.1% surgical site infection rate after elective hand surgery.
- The surgical treatment of breast cancer (BC) can lead to secondary lymphedema and ↑ rates of infection.
- Historical guidelines discouraging tourniquet use, IV blood draws, and ipsilateral extremity surgery were developed based on a small patient population.

## Aims

- Evaluate the available data on post operative complications following elective hand surgery in patients with prior BC treatment.
- Determine if the current guidelines regarding elective hand surgery in BC patients is still valid

### Reported Complications in Patients With No Prior Lymphedema

Study	N	Lymphedema	Infection	other
Baltzer et al., 2017	103	4	1	-
Dawson et al., 1995	8	0	0	-
Hershko and Stahl, 2007	21	0	0	Delayed healing (1) Joint stiffness (1)
Lee et al. 2015	17	0	1	Incisional pain (1) Wound dehiscence(1)

### Pooled analysis

	No Prior Lymphedema	Prior Lymphedema
New lymphedema (%)	2.7	11.1
Infection (%)	0.7	16.7
Total complication(%)	6.7	33.3

## Results

- There is a significant difference between infection rates in the general population (1.1%) and those with presurgical lymphedema (16.7%) ( $P<0.05$ ).
- All reported postoperative infections in the prior lymphedema group occurred in the same study.
- All cases of lymphedema exacerbation resolved within 3 months.
- Pooled analysis of studies in which tourniquets were used revealed no cases of new or worsening lymphedema.

## Conclusion

- There is no difference in complication rates following elective hand surgery between BC and non-BC patients if there is no history of ipsilateral lymphedema.
- BC patients with preexisting ipsilateral lymphedema carry an increased risk of postoperative infection and transient worsening lymphedema.
- Tourniquet use was not found to be associated with an increased rate of complications.
- Patients with preexisting lymphedema or a history of breast surgery are acceptable candidates for surgical intervention.

### Reported Complications in Patients With Prior Lymphedema

Study	N	Lymphedema	Infection	other
Dawson et al., 1995	7	0	0	-
Hershko and Stahl, 2007	4	2*	0	-
Lee et al. 2015	7	0	3	Chronic wound(1)

\* All cases of worsening lymphedema resolved to presurgical baseline lymphedema

### Pooled Analysis: Complication Rates (%)

