

Title: 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: Injuries to the upper extremity lymphatic system from cancer may require measures to prevent secondary lymphedema. Guidelines were established relating to the use of tourniquet and elective hand and upper extremity surgery. However, reports in the setting of hand surgery have indicated that prior guidelines may not be protective to the patient.

Methods: The study systematically reviewed the current literature evaluating elective hand surgery in breast cancer patients. We evaluated the risk of complications including new or worsening lymphedema and infection.

Results: 198 abstracts were identified, and a bibliographic review performed. Nine studies pertained to our subject, and four were included for final review. All studies included patients with prior breast cancer treatment involving breast surgery and axillary lymph node dissection. Pneumatic tourniquets were used during nearly all operations.

Patients without pre-surgery ipsilateral lymphedema have a 2.7% incidence of developing new lymphedema, and a 0.7% rate of post-operative infection. Patients with pre-surgery lymphedema have a 11.1% incidence of worsening lymphedema and 16.7% rate of infection. However, all cases of new or exacerbated lymphedema resolved within three months. Tourniquet use was not found to increase rates of lymphedema.

Conclusions: Based on the available evidence, there is no increased risk of complications for elective hand surgery in patients with prior breast cancer treatment. Breast cancer patients with pre-existing ipsilateral lymphedema carry slightly increased risk of post-operative infection and worsening lymphedema. It is our opinion and recommendation that elective hand surgery with a tourniquet is not a contradiction in patients with previous breast cancer treatments.