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## Scalpel Versus Electrocautery Dissections: The Effect on Wound Complications and Pro-Inflammatory Cytokine Levels in Wound Fluid

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**Abstract:** Aim: Electrocautery has been postulated as a risk factor for wound complications. This study was conducted to evaluate the effects of electrocautery and scalpel dissections on wound complications and local cytokine levels. Materials and Methods: Patients undergoing modified radical mastectomy were assigned to flap dissection with either electrocautery (n = 18) or scalpel (n = 20). Blood loss, drain volume and duration, seroma formation and wound complications were recorded. Tumor necrosis factor-alpha (TNF- $\alpha$ ) and interleukin (IL)-6 levels were measured in drain fluids at postoperative 24 hours. Results: The electrocautery group had significantly reduced blood loss and total drain volume, but increased seroma formation rate. Significantly elevated levels of TNF- $\alpha$  were measured in drain fluids of patients with electrocautery dissection. Conclusions: The use of electrocautery causes less bleeding and total drain output with an increased rate of seroma formation. Electrocautery dissection increases pro-inflammatory cytokine response in wound fluid, which may reflect an aggravated inflammation and increased potential for tissue damage.

**Key Words:** Electrocautery, sharp dissection, seroma, wound complication, tumor necrosis factor-alpha, interleukin-6

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