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Harmonic scalpel versus electro cautery in reducing seroma formation post modified radical mastectomy

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Background: The conventional mastectomy with axillary dissection using electrocautery is associated with moderate degree of morbidity in terms of blood loss, hematoma, flap necrosis, seroma formation with its subsequent complications and prolonged time of drainage. The recent trend is the use of the harmonic scalpel as an alternative surgical tool for the dissection and hemostasis. It has extensively been used in field of minimally invasive surgery and open surgeries as well like in thyroid and breast surgeries.

Aim: The aim of this study was to evaluate the effect of harmonic scalpel versus electrocautery in reducing seroma formation post MRM in Suez Canal University Hospitals in the period from October 2014 to January 2017.

Subjects & Method: The present study was carried out as a prospective study among on 96 female patients presented to Department of Surgery, Suez Canal University Hospitals diagnosed with breast cancer and operated on by MRM after being divided into 2 groups: Harmonic group and diathermy group; each group contain 48 patients. All patients were discharged after surgery with drains and were followed up in outpatient clinic until removal of drains. The drains were removed when the drainage volume was less than 30 ml over 24 hours for 2 successive days.

Result: It was found that the operative time in harmonic group was significantly longer than in diathermy group and ranged from 2-3 hours. Regarding blood loss intra-operatively, it was significantly higher in diathermy group than in harmonic group and ranged from 200-300 ml. Regarding postoperative wound complications as wound infection and wound healing, 5.5% of patients in harmonic group suffered from wound infection and this percent was increased to 11.1% in diathermy group. No cases in harmonic group suffered from flaps ischemia while 11.1% of cases in diathermy group suffered from ischemia of flaps. Also, the total drainage volume formed post operatively was significantly higher in diathermy group than in harmonic group and ranged between 3000-3550 ml with a mean of 3300 ml. Regarding removal of drains, the duration in harmonic group ranged between 10-12 days with a mean of 10.9 while this duration was increased in diathermy group and ranged between 14-17 days with a mean of 15.9 with less incidence of seroma re-accumulation after drain removal in harmonic group reaching 11.1% vs. 44.4% in electrocautery group.

Conclusion: Harmonic dissection simplifies the surgical procedure, eliminates the need of clips, ligatures and diathermy together with achieving effective lymph vessel sealing and hemostasis thus significantly reduces postoperative discomfort and morbidity to the patients. All these factors are of profound importance in patient care and in outcomes of MRM.

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