Axillary Dissection in Mastectomy: Ultracision vs Monopolar Electrocautry

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ABSTRACT

Aim: Various surgical methods applied for treatment and prognosis of patients with perforating injuries to colon.

Methods: This randomized control trial conducted at Department of Surgery, Jinnah Hospital, Lahore. One hundred and twenty eight female patients of 20 to 70 years of age with operable carcinoma breast were randomly assigned either to dissection by Ultracision or Monopolar electrocautry. Patients were followed for post-operative outcome. Data was collected on a structured proforma and analyzed using SPSS 17. Chi square and t test were used for categorical and continuous variables respectively.

Results: The mean age 56.3±5.8 years, were included in study. Mean duration of drains in ultracision group was 4.61±1.5 days while in monopolar electrocautry 5.38±1.485 days (p=0.005). Similarly rate of seroma formation was significantly lower in ultracision dissection and monopolar electrocautry (p value = 0.011).

Conclusion: It is concluded that ultracision dissection is superior to Monopolar Electrocautry when we take into an account seroma formation and duration of drains.

Key words: Ultracision dissection, Monopolar electrocautry, Mastectomy, Seroma formation

INTRODUCTION

Breast cancer is the most frequent malignancy of women. One in every nine Pakistani women is likely to suffer from breast cancer. Treatment of operable carcinoma breast is mastectomy, commonly a 'Modified Radical Mastectomy' (MRM). In MRM, there is extensive dissection of rich supply blood supply, capillaries and lymphatics. This leads to large dead space and may lead to postoperative hematoma formation or effusion resulting in seroma in axilla.

The risk of hematoma and seroma has been reduced with change in dissection technique and use of drains. Commonly, hemostasis is secured with use of electrocautery but search for newer forms of dissection aimed at reducing tissue damage continues. Ultracision is new method of diseecction and hemostatis that uses high grade radiofrequency that ionizes the water vapor both in the air and in the tissue. Ultrasonic dissector dissects and strongly seals the lymphatics and capillaries simultaneously. It has been used in minimally invasive surgery but its use in open surgery is limited.⁴

Sanguinetti A et al⁵ compared electrothermal bipolar vessel sealing system with Ultracision and described significant reduction of draining days in ultracision group (mean 1 vs 4 days, p < 0.05) and much lower seroma rate in ultracision group (10% and 30%, p< 0.05). Similarly Damani S⁶ described insignificant axillary drains days (2.8±0.7 days vs 6.7±10.2 days, p = 0.065) and reduced frequency of seroma formation (8% vs 24%, p = 0.247).

Innovative advent of ultracision in past few years and fortunate availability of this valuable instrument in our country has proven its efficacy in laparoscopy and other minimally invasive surgeries. As previous studies has shown variable results of post operative drain days and seroma formation in open surgery, so that is why want to study use of Ultracision in MRM so that it can reduce the morbidity of patients.

PATIENTS AND METHODS

This randomized control trial was carried out in Department of Surgery, Jinnah Hospital, Lahore from October 2013 to January 2015 and to compare the post-operative outcome in modified radical mastectomy with axillary dissection with use of ultracision and monopolar electrocautry. Post-Operative Outcome was measured in terms of mean duration of axillary drain and frequency of seroma formation. Its duration in days for which drain was kept in axilla. It was placed in axilla at surgery and was removed when drain output is <30ml for 24 hours. It is collection of serous fluid in the dead space
RESULTS

One hundred and twenty eight patients underwent modified radical mastectomy under either by ultracision or Monopolar Electrocautery. Out of 128 patients, 50 patients (39.1%) developed seroma after four weeks while 78 patients (60.9%) did not developed (Table 1). Mean age of the population of the sampled population was 56.3±5.8 years ranging from 43 to 68 while average duration of drains in days was from 5.6±1.4 days ranging from 2-9 days (Table 1). When we cross tabulated rate of seroma formation with treatment group there was a significant decrease in mean duration of post-operative drain. P value of ≤0.05 was considered as significant. Chi square test was used for comparison of seroma formation in both groups.

A significant decrease is in mean duration in ultracision dissection group as compared Monopolar Electrocautery. Mean duration of drains in ultracision group was 4.61±1.57 days while in Monopolar Electrocautery 5.38±1.485 days when we applied independent sampled t test (p=0.005) (Table 4).

DISCUSSION

Modified radical mastectomy is a major procedure and a live saving procedure in treatment of breast carcinoma. We have two types of tools for dissection available i.e. Monopolar Electrocautery and ultracision dissection. We compared the rate of seroma formation and number of duration of drains in both groups taking into account ultracision dissection and Monopolar Electrocautery.

We randomly divided the patients into two groups 64 in each. In the end we found that seroma formation is less in ultracision dissection group along with reduced number of days, mean number of drains in ultra-cession group. So ultracision group was found superior as compared to Monopolar Electrocautery group. Our results match with the previous study match by at all. Most of the patients in our group presented in stage two and showing lack of tools. The screening tools are available for our general population use and early diagnosis has a batter
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prognosis and it lowers the morbidity associated with lower breast carcinoma.

In our study 60% individuals were in stage two while rest were in stage one which are also important regarding the burden in our hospitals. Our randomization was quite effective as we found no difference in distribution of age in both groups. This shows the internal validity of process of selection of our groups.

The frequency of the seroma formation was 39.1% i.e., 50 individuals developed seroma. All though this percentage was quite high when we cross tabulated with the technique we found a relative decrease in only 18 women developed seroma in ultracision dissection group while 32 developed in Monopolar Electrocautry. The difference is highly significant the ultracision dissection was found superior to Monopolar Electrocautry in terms of seroma formation.

Same happened when we compared the duration of the drains in the both groups. Duration of drains for ultracision group was 4.61±1.5 days as compared to 5.38±1.485. Independent sample t test produced highly significant results i.e., (p value=0.005). Similarly the current study has proved that ultracision dissection is a better tool in terms of complication at the end of the post-operative complications i.e., duration of drains and seroma formation. So we should prefer it and we should use it.

REFERENCES


