Original Research Paper

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Breast Surgery

COMPARISON OF SEROMA IN MODIFIED RADICAL MASTECTOMY (MRM) WITH SKIN FLAP FIXATION USING FIBRIN GLUE & WITHOUT SKIN FLAP FIXATION IN GRH, MADURAI

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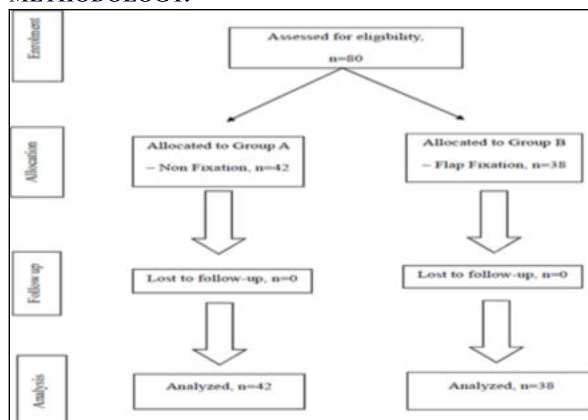
KEYWORDS :

Seroma formation and its sequelae including infection, flap necrosis, delayed wound healing and patient discomfort form one of most commonly encountered complication following Modified Radical Mastectomy(MRM) done for carcinoma breast,varying in incidence from 3 to 85 % . Seroma formation after breast cancer surgery is a persistent problem much to the annoyance of surgeon and patient alike, in spite of advances in surgical techniques and hemostasis. Pathophysiology of seroma is not clear and it is widely discussed in literature.Seroma is formed by acute inflammatory exudates in response to surgical trauma and acute phase of wound healing or fibrinolytic activity in serum or lymph drainage. Seroma is influenced by large dissection area, dead space under the skin flaps and axillary region, shoulder movement which affects attachment of skin flaps. The incidence of seroma is correlated with obesity, hypertension, breast volume, early shoulder exercise, and use of heparin,tamoxifen. Seroma accumulation elevates the flaps from the chest wall and axilla there by hampering their adherence to the tissue bed. It thus can lead to significant morbidity such as wound hematoma, delayed wound healing, wound infection, wound dehiscence, prolonged hospitalization, delayed recovery and initiation of adjuvant therapy. Number of techniques have been employed in an attempt to reduce or prevent seroma formation among mastectomy patients using mechanical and chemical approaches. However, there is heterogeneity in their benefits and there is paucity of uniform evidence for their use. Mechanical closure of dead space by flap fixation is a simple surgical procedure that eliminates dead space after mastectomy. The objective of this study is to evaluate the effect of mechanical closure of dead space after mastectomy in prevention of seroma formation.

AIM OF THE STUDY:
To study & compare the incidence of seroma In Modified Radical Mastectomy (MRM) with skin flap fixation using FIBRIN GLUE & without skin flap fixation done for Carcinoma of Breast .

METHODOLOGY:



Design Of Study: Prospective study

Period: 6months

Inclusion Criteria:
All female patients with breast cancer that proved histopathologically & underwent modified radical mastectomy (MRM) with skin flap fixation using FIBRIN GLUE & without skin flap fixation willing to participate in the study after being given informed consent.

Exclusion Criteria:
Patients who underwent modified radical mastectomy with skin graft, Patients receive anticoagulant treatment, Patients who had previously undergone surgery on the lymphatic system in axilla, Patients undergoing direct breast reconstruction after MRM.

A total of 80 patients of Carcinoma Breast who underwent Modified Radical Mastectomy were included in this prospective study, and randomized into two groups based on in-patient number. 42 patients with odd IP no in conventional simple wound closure (Group A) and 38 patients with even IP no in Flap fixation (Group B) were considered for the study.

For Both Groups:
All patient received 1 g of ceftriaxone prophylaxis preoperatively. Electrocautery used for dissection. Closed system suction drain inserted to axillary dead space before wound closure. Drains will be removed if fluid production <30 ml per day for three consecutive days. Patients will be discharged after suture removal.

FOR GROUP " A"-After MRM, the skin flaps will not be fixed to the pectoral muscles. Simple closure of surgical wound done in two layers.

FOR GROUP "B" - After MRM, the skin flaps will be fixed to the pectoral muscles using FIBRIN GLUE depending on the extent of the skin flap, without closing the axillary dead space. Finally wound closed in two layers.

The fibrin sealant was prepackaged each pack contains
R1: Human thrombin vial (1000 I.U) freeze, dried (lyophilized) and sterile cake like.
R2: Human fibrinogen vial (6.5 gm. /dl) freeze, dried (lyophilized) and sterile in powder.
When thrombin is added to fibrinogen, it is transformed into fibrin and coagulum occurs.

Statistical Analysis -
In this study, the results of the two groups were compared and analyzed by using Chi-square test.

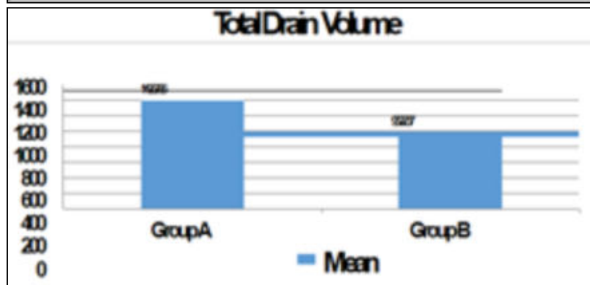
Spraying prepared fibrin glue to dead space under skin flaps.

OBSERVATION:

Comparison of	Flap Non Fixation Group A (n=42) (%)	Flap Fixation Group B (n=38) (%)
1. Demography		
Mean Age	48±8	46±7
2. Location		
Right	26(62)	18(47)
Left	16(38)	20(53)
3. Tumor Size		
Mean Tumor Size	3±6	3±5
4. Stage of the Patient		
IIA	20(47)	16(42)
IIB	22(52)	22(58)

In the present study, the total drain volume in the post-operative period in Group A was compared with Group B.The average total drain volume in the post-operative period in group A was 1426ml and 932ml in group B. p value was Found to be significant (<0.001).

	Mean Total Volume (ml)	SD
Group A	1426	240
Group B	932	216
p value <0.001 S		



In the present study, Duration of Hospital stay in Group A was compared with Group B. The average duration of hospital stay in group A was 13 days and 8 days in group B. p value was found to be significant (<0.001).

Summary

Prospective Study on Efficacy of Mastectomy Flap Quilting Sutures in Reducing Post Modified Radical Mastectomy Seroma Formation" Conducted in department of general surgery at government rajaji hospital, Madurai from June 2020 to November 2020.Data collected in a prescribed proforma, analyzed and evaluated for day 1 drain volume, total drain volume, surgical site infections & duration of hospital stay.Sample size was 80 women in two groups, group A - 42 (Flap non fixation) and group B – 38 (Flap fixation). All 80 women completed study protocol.Of the 80 women, 42 women with mean age 48+8 years belongs to group A and 38 women with mean age 46+7 years belongs to group B.Average size of the tumor at presentation was 3.4cm. 36 (45%) women presented with stage IIA disease and 44 (55%) with stage IIB disease. Drain volume in first post-operative day varied from 100 to 200ml with average of 170ml in group A and 163ml in group B. There was no statistically significant difference in the drain volume in first post- operative day (p>0.05). The average total drain volume in the post-operative period in group A was 1426ml and 932ml in group B. p value was found to be significant (<0.001).The average duration of hospital stay in group A was 10 days and 7 days in group B. p value was found to be significant (<0.001). One patient developed surgical site infections vs none in group B. There was no statistically significant difference in the incidence of surgical site infections in both groups. The present prospective study demonstrated that the mechanical obliteration of dead space by flap fixation using fibrin glue significantly decreases the incidence of seroma formation. However, the sample size in the current study is relatively smaller, so a larger study sample may be needed before any further conclusion can be made.