

# Comparison of Efficacy of Flap Anchoring with Suction Drains Alone After Modified Radical Mastectomy

MUHAMMAD NADEEM<sup>1</sup>, QAIM DEEN<sup>2</sup>, KHAWAJA FAROOQ QASIM<sup>3</sup>

## ABSTRACT

**Aim:** To compare efficacy of flap anchoring with suction drains alone after modified radical mastectomy.

**Methods:** A total of 200 females (100 in each group), between 30-70 years of age undergoing modified radical mastectomy for carcinoma breast and American Society of Anaesthesiology (ASA) I and II status were included in the study. This multi-centre study was done at Arif & Idrees Teaching Hospital Sialkot and Services Hospital Lahore from 1<sup>st</sup> June 2016 to 31<sup>st</sup> December 2016. We used random allocation i.e. lottery method, patients were divided into two groups: group A received filleting stitches; mastectomy flaps were fixed to underlying muscles, at various parts of the flap and at wound edges using fine absorbable sutures. In group B wound was closed by conventional method at edges. Two closed suction drains were used in both groups: one was placed in axilla and second under the skin flap. Drains were removed when amount of drained fluid is less than 50 ml in preceding 24 hours.

**Results:** Out of 200 cases with mean age was calculated as 41.11±8.30 years. Comparison of the efficacy of flap anchoring with suction drains alone after modified radical mastectomy was recorded as 88(88%) in Group-A and 68(68%) in Group-B while remaining 12(12%) in Group-A and 32(32%) in Group-B had seroma formation, p value was 0.0006.

**Conclusion:** Flap anchoring is significantly more effective when compared with suction drains alone after modified radical mastectomy.

**Keywords:** Modified radical mastectomy, flap anchoring, suction drains alone, seroma formation

---

## INTRODUCTION

Carcinoma of breast is the commonest malignancy among females all around the world<sup>1</sup> and the rate of the disease is more common in our country as compared to other Asian countries<sup>2</sup>. Modified radical mastectomy is a choice of surgical treatment in various patients. Most common post-operative complications of this procedure include excessive fluid drainage and seroma formation<sup>3</sup> and also considered as unavoidable nuisance. Seroma is defined as a collection of serous fluid in the dead space of post mastectomy skin flap, axilla or breast following modified radical mastectomy.<sup>4</sup> The reported estimates of seroma formation varies between 15 to 81%<sup>5</sup>. Though it is not life threatening, seroma formation may result in significant morbidity in terms of delayed wound healing, wound infection, prolonged hospital stay, increased cost of treatment and delayed adjuvant chemotherapy<sup>6</sup>.

Various techniques have been studied to reduce the amount of fluid drainage and seroma formation. These include use of closed suction drains<sup>7</sup>, wound closure to obliterate dead space beneath the skin

flaps with sutures<sup>8</sup>, application of fibrin glue<sup>9</sup>, external compression dressing<sup>10</sup> and limitation of shoulder movements<sup>4</sup>.

In Pakistan, flap anchoring is not used routinely, and no local data on this issue is available. However, the findings of our study will be helpful while modified radical mastectomy is done.

## PATIENTS AND METHODS

A total of 200 female cases (100 in two groups) undergoing modified radical mastectomy for carcinoma breast were enrolled in this trial, we excluded those cases who had abnormal BMI, currently taking anticoagulants or steroids, receiving preoperative chemotherapy, chest irradiation or having recurrent carcinoma of breast. We performed physical examination and recorded size, site, consistency, shape, and presence of palpable lymph nodes. Histopathological diagnosis, immunophenotypic characteristics of the tumor and stage of disease were also recorded. MRM was done by using standard protocols of the technique. Random allocation was done to enroll the patients in two groups: group A received filleting stitches; mastectomy flaps were fixed to underlying muscles, at various parts of the flap and at wound edges using fine absorbable sutures. In group B wound was

---

<sup>1</sup>Assistant Professor of Surgery, Sialkot Medical College Sialkot,

<sup>2</sup>Senior Registrar of Surgery, Services Hospital Lahore,

<sup>3</sup>Assistant Prof Surgery, Bolan Medical College Hospital, Quetta

Correspondence to Dr. Muhammad Nadeem Email: m\_nadeem\_1967@hotmail.com

closed by conventional method at edges. Two closed suction drains were used in both groups: one was placed in axilla and second under the skin flap. Drains were removed when amount of drained fluid is less than 50 ml in preceding 24 hours. Patients were only discharged after removal of drains. Follow up was done 2 weeks after removal of drains and patients examined for any palpable, fluctuant or tense swelling under skin flap or axilla. Needle aspiration was done as needed.

## RESULTS

In the present study, out of 200 cases (100 in each group) mean age was 41.11±8.30. Comparison of the efficacy of flap anchoring with suction drains alone after modified radical mastectomy was recorded as 88(88%) in Group-A and 68(68%) in Group-B while remaining 12(12%) in Group-A and 32(32%) in Group-B had seroma formation (Table 1).

Table 1: Efficacy of flap anchoring with suction drains alone after modified radical mastectomy

Efficacy	Group A	Group B
Yes	88(88%)	68(68%)
No	12(12%)	32(32%)

P value=0.0006

## DISCUSSION

Flap anchoring is not routinely used in Pakistan and thus no local data on their efficacy is available. This study has therefore been planned to assess the utility of this technique in prevention of seroma formation so that it can be used routinely in combination with closed suction drains after modified radical mastectomy in our patients. This technique has seldom used in Pakistan and thus no local data on their efficacy is available. This study was therefore been planned to assess the utility of this technique in prevention of seroma formation so that it can be used routinely in combination with closed suction drains after modified radical mastectomy in our patients.

In our study, out of 100 cases(50 in each group), 27(54%) in Group-A and 30(60%) in Group-B were between 20-40 years of age while 23(46%) in Group-A and 20(40%) in Group-B were between 41-60 years of age, mean±sd was calculated as 39.04±9.30 and 38.18±9.97 years respectively, comparison of the efficacy of flap anchoring with suction drains alone after modified radical mastectomy was recorded as 44(88%) in Group-A and 34(68%) in Group-B while remaining 6(12%) in Group-A and 16(32%) in Group-B had seroma formation.

Our findings are consistent with a study recorded frequency of seroma formation significantly

lower in flap fixation group (10%) as compared to suction drains alone (35%)<sup>5</sup>.

Almond and others<sup>11</sup> compared outcomes following flap fixation or routine drain placement and uniquely considers the economic implications of each technique, they recorded that there was no difference in seroma rates between the two groups: 49% vs 59% (p=0.22). However, the length of hospital stay was reduced in the flap fixation group: 1.88 vs 2.67 days (p<0.0001) and concluded that flap anchoring resulted in a significantly shorter hospital stay than routine drainage, with a comparable rate of seroma formation, our findings are in-contrast regarding frequency of formation of seroma but Flap anchoring was found to be beneficial for reduction of hospital stay which is suitable in our population.

Coveney et al<sup>12</sup> compared suturing skin flaps to underlying muscle with conventional skin closure and observed a lower incidence of seroma formation in the flap suture group, although flap suturing did add to total operating time.

Very limited data is available on this issue while no local study addressed this topic, however, our findings may be validated through some-other trials.

## CONCLUSION

Flap anchoring is more effective than suction drains alone in cases undergoing modified radical mastectomy.

## REFERENCES

1. Assi HA, Khoury KE, Dbouk H, Khalil LE, Mouhieddine TH, Saghir NS, Epidemiology and prognosis of breast cancer in young women. *J Thorac Dis* 2013 ; 5(Suppl 1): S2-S8.
2. Ahmed S, Qureshi AN, Atta S, Gul M, Rizwan M, Ahmed S, et al. Knowledge, attitude and practice for breast cancer risk factors and screening modalities in staff nurses of ayub teaching hospital abottabad. *J Ayub Med Coll Abbottabad* 2011;23:127-9.
3. Bukhari I, Mehmood Z, Nazeer M, Khan A. Early complications of mastectomy with axillary clearance in patients with stage II and III carcinoma breast. *J Surg Pak* 2010 ;15:180-5.
4. Sampathraju S, Rodrigues G. Seroma formation after mastectomy: pathogenesis and prevention. *Indian J Surg Oncol.* 2010 ;1:328-333.
5. Sakkary MA. The value of mastectomy flap fixation in reducing fluid drainage and seroma formation in breast cancer patients. *World J Surg Oncol* 2012;10:8.
6. Almond LM, Khodaverdi L, Kumar B, Coveney EC. Flap anchoring following primary breast cancer surgery facilitates early hospital discharge and reduces costs. *Breast Care(Basel)* 2010 ;5:97-101.
7. Andeweg CS, Schriek MJ, Heisterkamp J, Roukema JA. Seroma formation in two cohorts after axillary

- lymph node dissection in breast cancer surgery: does timing of drain removal matter? *Breast J* 2011 ;17:359-64.
8. Srivastava V, Basu S, Shukla VK. Seroma formation after breast cancer surgery: what we have learned in last two decades. *J Breast Cancer*. 2012 ;15:373-380.
  9. Ko E, Han W, Cho J, Lee WJ, Kang SW, Jung SY, et al. Fibrin glue reduces the duration of lymphatic drainage after lumpectomy and level II or III axillary lymph node dissection for breast cancer: a prospective randomized trial. *J Korean Med Sci*. 2009 ;24:92-96.
  10. Kontos M, Petrou A, Prassas E, Tsigris C, Roy P, Trafalis D, et al. Pressure dressing in breast surgery: is this the solution for seroma formation? *J Boun*. 2008 ;13:65-7.
  11. Almond LM, Khodaverdi L, Kumar B, Coveney EC. Flap Anchoring Following Primary Breast Cancer Surgery Facilitates Early Hospital Discharge and Reduces Costs. *Breast Care* 2010;5:97–101.
  12. Coveney EC, O'Dwyer PJ, Geraghty JG, O'Higgins NJ. Effect of closing dead space on seroma formation after mastectomy--a prospective randomized clinical trial. *Eur J Surg Oncol* 1993; 19:143.