



A COMPARATIVE STUDY BETWEEN THE USE OF PARTIAL AND FULL VACCUUM SUCTION DRAIN AFTER MODIFIED RADICAL MASTECTOMY

**Dr. T. V. S. S
Nagababu**

Assistant Professor, Andhra Medical College, Visakhapatnam

Dr. G. Keerthi*

Post Graduate, Andhra Medical College, Visakhapatnam. *Corresponding Author

ABSTRACT **BACKGROUND:** In India, Incidence of breast carcinoma is 9-32/1lakh women. After modified radical mastectomy, postoperative fluid collection in drain is affected by various factors- the most important one being the amount of suction pressure applied to the drain.

OBJECTIVES: To study and compare the amount of fluid collected in drain, and time of drain removal between full and partial vacuum suction drain groups after MRM

-To compare the postoperative morbidity between the two groups.

METHODS: 50 cases of breast carcinoma who underwent mrm in kgh, visakhapatnam from july 2018 to july 2019 are studied in this prospective randomised study.

Patients were categorised into group a(full vacuum suction) and group b (partial vacuum suction) with 25 patients in each group. Their outcomes are compared in terms of amount of fluid collected in drain, time of drain removal, length of hospital stay and postoperative complications.

RESULTS : The mean amount of fluid collected in drain is comparatively less and time for drain removal is comparatively early in partial vacuum suction group (group B) than full suction group (group A) Postoperative complications are increased in Group A than Group . Length of hospital stay is increased in group A.

- Delayed complications during followup are noted in group A.

CONCLUSION: This study concludes that partial vacuum suction drain is better than full vacuum suction by decreasing the amount of drain output, early drain removal, shortened hospital stay and decreased postoperative complications.

KEYWORDS : Partial Vacuum Suction, Full Vacuum Suction, MRM- Modified Radical Mastectomy

INTRODUCTION:

In India incidence of breast carcinoma is 9-32/1lakh women. After modified radical mastectomy postoperative fluid collection in drain is affected by various factors - the important one being the amount of suction pressure applied to the drain.

The use of closed suction drainage postoperatively is a common practice that has been shown to reduce but not prevent seromas.

Hence this study aims to know the effects of partial vs full vacuum drainage in post MRM patients in terms of morbidity hospital stay and complications related to it.

MATERIALS AND METHODS:

- 50 cases of breast carcinoma who underwent MRM in KGH visakhapatnam from july 2018 to july 2019 are studied in this prospective randomised study.
- Patients were categorised into 2 groups. 25 patients into full vacuum suction group A and 25 patients into partial vacuum suction group B. Pressure in high and low suction device is assessed by measuring the amount of pressure applied to suction drain.

INCLUSION CRITERIA:

- patients with unilateral breast cancer
- early breast cancer(stage IA,IB,IIA)
- Age of the patients is between 30-70 years

EXCLUSION CRITERIA:

- locally advanced breast cancer
- age > 70 years
- previous breast surgery and axillary surgery

- In all cases surgery was performed using a standard technique- aunchinloss modified radical mastectomy.
- Level 1 and 2 axillary dissection done in all cases. 2 tube drains were placed in all cases (one axillary and one pectoral).
- Outcomes were measured and compared in terms of mean amount of fluid in the drain, time of drain removal, postoperative morbidity(i.e seroma formation, flap necrosis) and length of hospital stay.

RESULTS AND DISCUSSION:

I) Number Of Patients In Each A Ge Group

- 30-40years- 5 patients(10%)

- 41-50years-18 patients(36%)

- 51-60years-20 patients(40%)

- 61-70years-7 patients(14%)

- The mean age was 45yrs for full vacuum group A , and 46yrs in the partial vacuum group B.

II) NUMBER OF PATIENTS IN EACH STAGE

- STAGE IA – 6patients(12%)

- STAGE IB – 12patients(24%)

- STAGE IIA – 32patients(64%)

III) NUMBER OF PATIENTS IN EACH GROUP

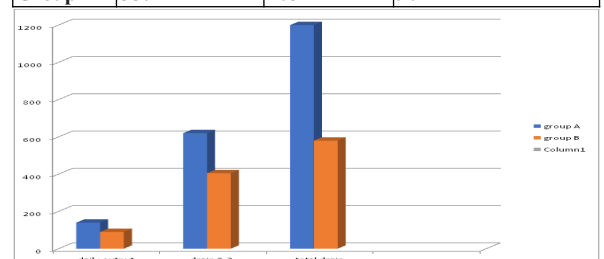
- GROUP A – 25

- GROUP B – 25

IV) DRAIN OUTPUT

- In group A amount of fluid drained was more when compared to group B
- Due to decreased drain output in group B , drain was removed earlier in them with no significant increase in postoperative morbidity.

S.No	Total drain output	Drain output POD0-3	Mean amount of daily drain output
Group A	1200ml	620ml	140ml
Group B	580ml	405ml	90ml



V) Average time for drain removal

- Group A -14 days

- Group B -7 days

VI) Length Of Hospital Stay

- GROUP A -13 days (average stay)

- GROUP B - 6 days (average stay)

VII) Complications

- In this study seroma formation was the most common complication, 6 cases of full vacuum drainage developed seroma in comparison with 1 case of seroma among half vacuum group. In this study 4 cases of wound infection and 2 cases of skin necrosis and 1 case of hematoma were noted in Group A whereas 1 case of wound infection and 0 case of skin necrosis/hematoma was noted in Group B.

S. No	Complications	GroupA	GroupB
1.	Seroma	6	1
2.	Hematoma	1	0
3.	Flapnecrosis	2	0
4.	Woundinfection	4	1

VIII) Delayed Complications During Followup

- During followup axillary seroma was observed in 2 cases of full vacuum suction group.
- Due to delayed complications adjuvant chemoradiation is delayed.
- Delayed complications are not observed in partial vacuum suction group.

1) Group A- Axillary seroma (2 cases)

2) Group B- nil

CONCLUSION :

- In this clinical study it was shown that reducing the negative suction partially, post axillary dissection helps in early removal of drain by decreasing drain output, and thus helps in early discharge of patient and decrease in hospital stay.
- In this study we also noticed increased early and delayed postoperative complications with full vacuum suction pressure than partial vacuum suction pressure group.
- It was found that high suction caused prolonged drainage, which can possibly be explained by the assumption that high negative suction may not allow, leaking lymphatics to close.
- And, on the other hand, keeping the drain till the effluent is acceptably low may also lead to wound infection through migrating bacteria in these drains which will, consequently, raise the cost of surgical treatment of breast cancer.
- Therefore no suction or high suction drainage both may contribute to the same result that is higher incidence of seroma formation and longer hospital stay.
- To balance between not having suction at all and having a full negative suction, half negative suction drain was used in the present study to achieve a shorter hospital stay without any increase in the rate of postoperative seroma formation.
- Overall we concluded that usage of partial vacuum suction drain should be preferred over full vacuum suction drain after modified radical mastectomy.

REFERENCES

- Chintamani, VinaySinghal, JP Singh, AnjuBansal and Sunita S.: Half versus full vacuum suction drainage after modified mastectomy for breast cancer- a prospective randomized trial. BMC cancer 2005, 5:11.
- Terrel GS, Singer GS: Axillary versus combined axillary and pectoral drainage after modified radical mastectomy. SurgGynecolObstet1992, 175(5):437-440.
- 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 SurgOncol1993, 19(2):143-146.
- Harada RN, Pressler VM, McNamara JJ: Fibrin glue reduces seroma formation in the rat after mastectomy. SurgGynecolObstet1992, 175(5):450-454.
- Pattek JA, Peters MM, Nori S, Knauer C, Kinne DW, Rogatko A: Axillary lymphadenectomy. A prospective randomized trial of 13 factors influencing drainage including early or delayed arm mobilization. Arch Surg1990, 125(3):378-382.
- Dawson I, Stam L, Heslinga JM, Kalsbeek HL: Effect of shoulder immobilization on wound seroma and shoulder dysfunction following modified radical mastectomy: a randomized prospective clinical trial. Br J Surg1989, 76(3):311-312.
- VanHeurn LW, and Brink PR: Prospective randomized trial of high versus low vacuum drainage after axillary lymphadenectomy. Br J Surg1995, 82(7):931-932.
- Yi M, Murphy C, Orr N: Early removal of drains and discharge of breast cancer surgery patients: a controlled prospective clinical trial. Ann R Coll Surg Engl1995, 77(5):377-379.
- Kopelman D, Klemm O, Bahous H, Klein R, Krausz M, Hashmonai M. Postoperative Suction Drainage of The Axilla: for how long? Prospective Randomised Trial. Eur J Surg. 1999;165:117-120. doi: 10.1080/110241599750007289.
- Cameron AE, Ebbs SR, Wylie F, Baum M. Suction drainage of the axilla: a prospective randomized trial. Br J Surg. 1988;75:1211.