



EARLY VS LATE REMOVAL OF DRAIN IN POST MRM PATIENTS- A CASE SERIES

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ABSTRACT

Surgery is the mostly the treatment of choice or indication and major therapy in the management of malignancy of breasts. Drain placement in post-mrm patients is one method to drain the seroma formed after the surgery. The drain-release protocol varies in each hospitals. This study aimed to compare early drain release with late drain release in postoperative MRM patients. The present study is a prospective cohort study in 60 patients with drain remove and the recording of the proportion of seroma formation and aspiration actions on days after drain release, infection, flap necrosis.

Key words:

Drain; early release; late release; seroma

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INTRODUCTION

Breast cancer in women has a high mortality rate in both developed and developing countries and causes very important health problems .WHO has data in 2020 that mentioned 685,000 people died from breast cancer.

Surgery is the most widely indicated and major therapy in the management of breast malignancy. Postoperative complications of breast cancer can be found in several forms, including 10% hematoma, seroma and wound infection surgery by 20%, 9% brachial plexus lesion and flap necrosis (Henrique 2012) ¹. Common Complication after mrm surgery is formation of seroma. Incidence of seroma is predicted around 10-51% in all breast surgery cases. (McCaul 2000, Ezeome et al 2008) ^{2,3}

Several methods are offered to prevent the occurrence of seroma such as by the action of axillary dissection is good, the use of good surgical instrument, the action of external compression, flap fixation action, the use of dead space obliteration, tissue glue and drain (Dong he 2011) ⁴. Drain placement is a method to drain seroma which may form postoperatively modified radical mastectomy (MRM). Negative drainage (closed suction wound drainage) has been widely accepted by many surgeons to reduce morbidity to patients (Theunissen 2001) ⁵.

Until now, the protocol for the release of drain varies in every hospital. Delay in drain release may increase patients hospital stay duration. Most patients deny to go home with the drain still in place, as the patient are uncomfortable and are not confident in properly handling the drain when at home. This will certainly potentially increase the incidence of infection. This is in line with studies that prove the incidence of

retrograde infection in drain use (Parikh 1992) ⁶. The early release of the drain may decrease the length of hospitalization but may increase the chances of seroma formation for which it takes repeated serum aspiration and may require surgery to evacuate the seroma. These conditions further increase the risk of infection, flap necrosis, increased length of hospitalization, delay in the implementation of chemotherapy or radiotherapy (Sajid 2013) ⁷.

The selection of types of drain, the number of drains to be placed, the position at which drain should be placed, the selection of active drain or passive drain with deficiencies and their respective advantages are still controversial (Okada, 2013; Sajid, 2013) ^{7,8}. Meanwhile, prolonged use of the drain causes an increase in hospital stay and the risk of infection. Drain is generally maintained until the production is considered safe after removal, i.e., 30-50 cc per day (McCaul 2000) ².

The use of drain in surgery is double-edged sword. Early release leads to seroma formation and prolonged drainage may leads to infection(Parikh 1992, Xue 2012) ^{6,9}. Another impact is infection causes delayed radiation and postoperative MRM chemotherapy in some patients, potentially reducing disease free survival.(Jane, 2014) ¹⁰. Disruption of daily living activity in some patients and decreased work productivity is one of the effects of drainage is too long (Sajid 2013, Thomson 2013) ^{7,11}.

CASE SERIES (MATERIALS AND METHOD)

Patients scheduled for total mastectomy and upto level II axillary clearance in the teaching hospital were included in this study.

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Inclusion criteria used were

- Histologically proven invasive carcinoma of the breast.
- Mastectomy and level II axillary clearance performed at the same operation.
- Patients who had neoadjuvant therapy were not excluded.

Exclusion criteria were as follows

- Patients having breast conservation surgery.
- Patients with prior wide local excision
- Patients with prior axillary dissection.

Patients were randomised to three groups after drain removed for the study GROUP A:-drains to be removed on 5th day , GROUP B:- 14th operative day and GROUP C:-collection less than 30cc in 2 consecutive days. The drainage of blood/serum was tabulated daily and the drainage tube removed on the day assigned. The patients were discharged after drain removal and reviewed over the next 30 days for evidence of seroma formation, defined as the presence of a fluctuant swelling in the pectoral or axillary region. Seromas were aspirated and volumes documented. Patients with seromas were maintained on the study until there was no further collection. Signs of infection were noted and the infections treated appropriately.

RESULT

20 patients, each aged between 30 and 75 years were randomised into three groups.

Wound infections were treated by appropriate antibiotics and dressings.

Table 1 Mean Drain Volume

Group	Total Volume	Mean Volume
A	1200ML	60ML
B	2300ML	115ML
C	1500ML	75ML

Table 2 Seroma

Group	No.of Patients
A	8
B	12
C	5

Table 3 Infection

Group	No.
A	6
B	9
C	2

In group A patients patient had less mean volume of drain output (60ml) out of all the 3 groups ,and around 8 of 20 (40%) patient had seroma formation and 6 of 20 (30%) had infection.

In group B patients patient had maximum mean volume of drain output (115ml) out of all the 3 groups ,and around 12 of 20 (60%) patient had seroma formation and 9 of 20 (45%) had infection.

In group C patients patient had mean volume of drain output (75ml) out of all the 3 groups, and around 5 of 20 (25%) patient had seroma formation and 2 of 20 (10%) had infection. Thus out of all 3 group, in group C patient chances of seroma or infection are less.

DISCUSSION

Seroma is a most frequent complication in most breast surgery. Seroma is defined as the accumulation of serous fluid in the dead space area after mastectomy surgery, where one of the procedures is a breast skin flap. Seroma results by acute inflammatory exudates which are developed against surgical trauma and acute phase of wound healing.

Serogenic pathogenesis has not been fully explained but seroma accumulation elevates the flaps from the chest wall and axilla there by hampering their adherence to the tissue bed causing complications such as delay in wound healing, flap necrosis, wound dehiscence which then causes delay in adjuvant treatment. Factors that are considered responsible for seroma formation in general can be divided based on patient factors, surgical factors, drain use, obliteration use and shoulder mobilization. Drain plays a important role as it is considered most important for the drainage of seroma so that wound healing can work well.

Our results showed that there was no significant difference in percutaneous action in the early-released drain group with the late-release drain group. These results supported the researcher's hypothesis that the release of the drain can be avoided so as to reduce complications due to ascending infection, minimizing the discomfort of patients due to the drainage taking too long and globally can lower the total cost of patient care.

The study looked at new standards related to the post MRM drain release criteria. In the control group was released according to the procedure where the volume per 24 hours 50 cc and in the intervention group was released on the fifth day and 14th day regardless of the volume recorded per 24 hours. It is known that although there is no difference in the formation of seroma after the release of drain. Apparently it is necessary to visit the clinic more often when drain is released on the fifth day regardless of volume in 24 hours (Okada 2013). This is in line with the study conducted that the volume per 24 hours needs to remain a concern.

CONCLUSION

Installation of drain is still the main choice to prevent the formation of post MRM seroma. The criteria for drain discharges are still debatable, whether based on drain volumes or time. Our study makes clear that only one guideline is used to remove drain in post-MRM patients, i.e., the drain volume is less than 30-50 cc for two consecutive days. This study makes it clear that clinicians in the surgical clinic do not have to hesitate to remove the drain if the drain volume meets the criteria, even if the patient arrives on the 2nd or 3rd post-MRM day.

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