Original Research Paper

Volume - 10 | Issue - 6 | June - 2020 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

General Surgery

TO STUDY THE FACTORS INFLUENCING SEROMA FORMATION AFTER MODIFIED RADICAL MASTECTOMY

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ABSTRACT

Background&Objectives: Seroma, is the most frequent post operative complication after breast cancer surgery/modified radical mastectomy (MRM), developing in approximately 30% of cases. Aim of the study was to establish an association between various risk factors of seroma formation and to know whether the risk factors act independently or by synergism.

Methods: Patients with breast cancer undergoing Modified Radical Mastectomy were included in the study. The proportions were compared using Chi-square test of significance and the student „t test was used to determine the statistical difference. The data was analyzed using SPSS package.

Results: Four out of 30 patients, accounting for 13.3 percent, developed seroma. The mean age of patients who developed seroma was 50.50+18.065 (32 – 66) years. The mean area of raw surface in seroma group was 0.1350+0.01291 (0.12 – 0.15) mm2 and the mean volume of breast and axilla in the seroma group was 1562.50+170.171 (1400-1800) ml, surface area and volume where statistically significant as compared to patients without seroma formation. Other variables studied had no statistical significance with respect to seroma formation.

Conclusion: The factors influencing seroma formation following modified radical mastectomy for carcinoma breast were found to be area of the raw surface created on the anterior chest wall, axilla and lateral chest wall and inner surface of the resulting flaps – larger the surface area, higher the seroma rate and volume of the breast and axillary fatty-lymphatic tissue – greater the volume, higher the seroma rate.

KEYWORDS :

INTRODUCTION

Breast cancer is one of the most common malignancies in women and a leading cause of cancer death among women. MRM is a safe operation with low morbidity and mortality. Seroma, a subcutaneous collection of serous fluid within a surgical cavity i.e. clinically evident, is the most frequent post operative complication after breast cancer surgery, developing in approximately 30% of cases With surgical ablation of the breast, the intervening lymphatics and fatty tissues are resected en bloc, thus the vasculature and lymphatics of the gland are transected. Thereafter, transudation of lymph and the accumulation of blood in the operative field are expected.

AIMS AND OBJECTIVES

1. To establish an association between various risk factors of seroma formation.
2. To know whether the risk factors act independently or by synergism

MATERIALS AND METHODS

This prospective study was conducted in the Department of Surgery, GGH, Kurnool, from January 2019 to January 2020 .30 patients who fulfilled the criteria were enrolled to the study after taking complete, written informed consent.

INCLUSION CRITERIA:

1. All cases of breast cancer undergoing Modified Radical Mastectomy.

EXCLUSION CRITERIA:

1. Cases of breast cancer who have undergone Modified Radical Mastectomy in some other hospital and referred to GGH,Kurnool for further management.
2. Cases of Mastectomy and Axillary dissection for indications other than carcinoma.
3. Cases undergoing palliative mastectomies and incomplete axillary dissection.
4. Cases of breast cancer surgery in males.

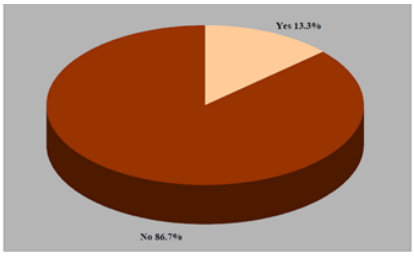
RESULTS

DEMOGRAPHIC DATA

30 admitted female patients with the diagnosis of carcinoma breast counseled for modified radical mastectomy were included in the study.

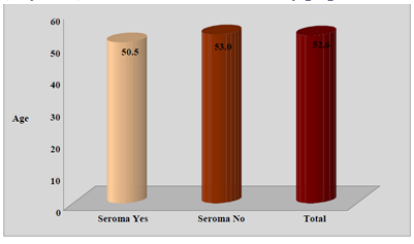
Four out of 30 patients, accounting for 13.3 percent, developed seroma.

Distribution of seroma in study population



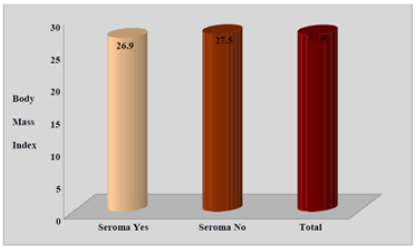
The mean age of patients who developed seroma was 50.50+18.065 (32 – 66), whereas the mean age of those without seroma was 52.96+13.015 (28 – 79) years.

Mean age (in years) distribution of the study population



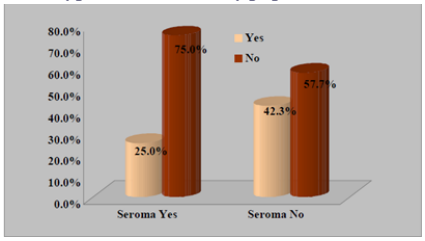
The mean BMI of those with seroma was 26.90+5.26 (20.39 – 33.28), the BMI for patients without seroma was 27.47+5.41 (19.05 – 38.21) kg/m2.

Mean BMI (kg/m2) distribution of the study population



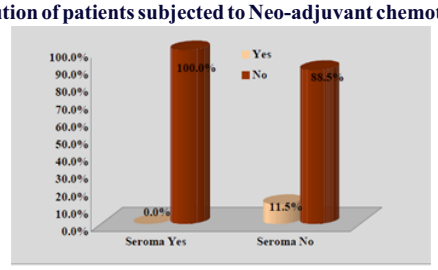
One of 4 among the seroma group was found to be hypertensive accounting for 25%, eleven of 15 among the non-seroma group were hypertensive, 42.3%.

Distribution of hypertension in study population



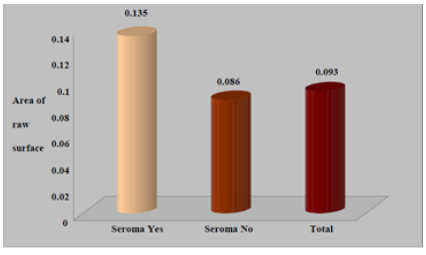
Of the 4 patients with seroma, none of them received neo-adjuvant chemotherapy, and 3 patients among 26 with no seroma received neo-adjuvant chemotherapy.

Distribution of patients subjected to Neo-adjuvant chemotherapy



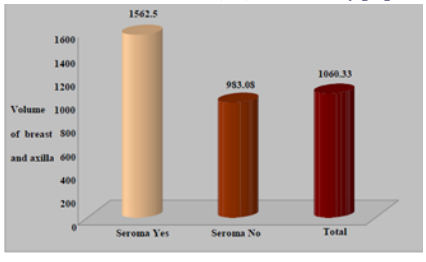
The mean area of raw surface in seroma group was 0.1350+0.01291 (0.12 – 0.15), whereas, among the patients with no seroma, mean area was 0.0862+0.00852 (0.07 – 0.10) square metres (mm2).

Mean area (mm2) of raw surface in study population



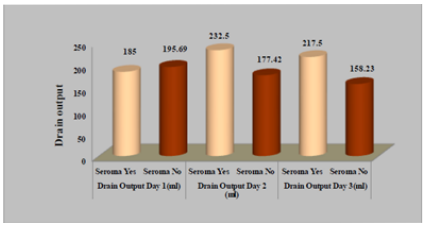
The mean volume of breast and axilla in the seroma group was 1562.50+170.171 (1400-1800), and that in no seroma group was 983.08+226.235 (760 – 2000) milliliters (ml).

Mean volume of breast and axilla (ml) in the study population



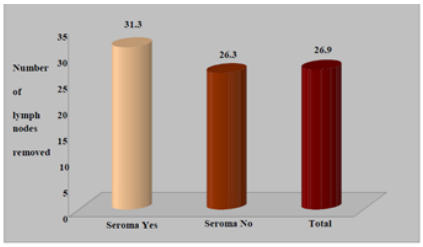
The mean drain output on day 1 in seroma group was 185.00+23.805 (150 – 200) and in no seroma group was 195.69+97.209 (50 – 375) milliliters (ml), On day 2 in seroma group 232.50+85.00 (150 – 350) and in no seroma group 177.42+70.457 (45 – 340) ml, On day 3 in seroma group 217.50+20.616 (200 – 240) and in no seroma group 158.23+59.071 (50 – 264) ml.

Mean drain output (ml over first 3 days in the study population



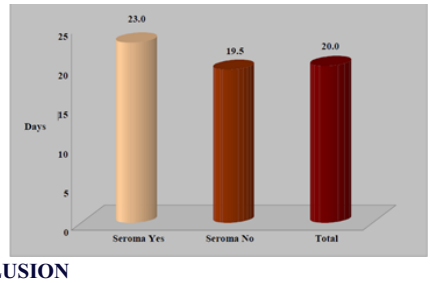
The mean number of lymph nodes removed in the seroma group was 31.25+12.659 (16 – 47), whereas in no seroma group was 26.27+11.379 (10 – 56).

Mean number of lymph nodes removed in the study population



The mean drain removal day in seroma group was 23+2.16 (20 – 25), and that in no seroma group was 19.54+6.987 (9 – 37).

Mean drain removal day in the study population



CONCLUSION

1. The factors influencing seroma formation following modified radical mastectomy for carcinoma breast are as follows;
   a. Area of the raw surface created on the anterior chest wall, axilla and lateral chest wall and inner surface of the resulting flaps – larger the surface area, higher the seroma rate.
   b. Volume of the breast and axillary fatty-lymphatic tissue – greater the volume, higher the seroma rate.
2. Both the factors act synergistically.
3. A higher drain output on post-operative day 3 is likely to predict the increased possibility of seroma formation.
4. Factors like age of the patient, BMI, hypertension, neo-adjuvant chemotherapy, number of lymph nodes removed and the drain removal day have no bearing on seroma rate.

REFERENCES

1. C. M. Townsend, R. D. Beauchamp, B. M. Evers, K. L. Mattox: Sabiston Textbook of Surgery. The Biologic Basis of Modern Surgical Practice, Vol 1, 18th edition 868
2. F. C. Brunicardi, D. K. Andersen, T. R. Billiar, D. L. Dunn, J. G. Hunter, R. E. Pollock: Schwartz Principles of Surgery, 8th edition 470
3. N. S. Williams, C. J. K. Bulstrode: Bailey & Love's. Short Practice of Surgery, 25th edition 842
4. Bland and Copeland. The Breast. Comprehensive Management of Benign and Malignant Disorders Volume 2, 8th edition.
5. Aitken D. R., Minton J. P. Complications associated with mastectomy. Surg Clin North Am 1983;63:1331-52
6. Douay N., Akerman G., Clement D., Malartic C., Morel O., Barranger E. Seroma after axillary lymph node dissection in breast cancer. Gynecol Obstet Fertil 2008 Feb;36(2):130-5
7. Burak W. E. Jr., Goodman P. S., Young D. C., Farrar W. B. Seroma formation following axillary dissection for breast cancer: risk factors and lack of influence of bovine thrombin. J Surg Onco . 1997 Jan;64(1):27-31
8. Barwell J., Campbell L., Watkins R. M., Teasdale C. How long should suction drains stay in after breast surgery axillary dissection? Ann R Coll Surg Eng .1997;79:435-437
9. Esmat Hashemi, A. Kaviani, M. Najafi, M. Ebrahimi, H. Hooshmand, A. Montazeri. Seroma formation after surgery for breast cancer. World J Surg Oncol. 2004; 2: 44
10. Lumachi F. , Brandes A. A. , Burelli P. , Basso S. M. , Iacobone M. , Ermani M. Seroma prevention following axillary dissection in patients with breast cancer by using ultrasound scissors: a prospective clinical study. Eur J Surg Oncol 2004 Jun;30(5):526-30