Natural Resources for Human Health
eISSN: 2583-1194

Original Research

Received 18 May 2026
Revised 22 June 2026
Accepted 10 July 2026

Natural Resources for Human Health 2026, Vol. 6 (6s): 374–378

KEYWORDS:
Benign breast surgery, surgical drain, seroma, postoperative pain, fibroadenoma, breast lump.

A Comparative Study Between Drain Placement and No Drain Placement in Benign Breast Surgeries

Dr. Guna Sahithi Lebaka[1], Dr. Nanditha Gudi[2]

[1]Post Graduate Resident, Department of General Surgery Saveetha Medical College and Hospital, Chennai, Tamil Nadu
[2]Associate Professor, Department of General Surgery, Saveetha Medical College.

ABSTRACT:

Background:

Drain placement following benign breast surgery has traditionally been practiced to reduce postoperative fluid accumulation and seroma formation. However, routine drain usage may increase postoperative discomfort, prolong hospital stay, and affect patient satisfaction. This study aimed to compare postoperative outcomes between patients managed with drains and those without drains following benign breast surgeries.

Methods

A prospective comparative study was conducted in the Department of General Surgery at a tertiary care hospital. A total of 26 patients undergoing benign breast surgeries were included and divided into two groups: drain placement group (n = 13) and no-drain group (n = 13). Parameters analyzed included postoperative pain, seroma formation, wound infection, duration of hospital stay, and patient satisfaction. Statistical analysis was performed using chi-square test and independent t-test where appropriate, with $p < 0.05$ considered statistically significant.

Results

The mean postoperative pain score was significantly higher in the drain group (5.8 ± 1.1) compared to the no-drain group (3.9 ± 0.9) with $p = 0.002$. Seroma formation occurred in 2 patients (15.4%) in the drain group and 4 patients (30.8%) in the no-drain group, which was not statistically significant ($p = 0.36$). Mean hospital stay was significantly longer in the drain group (3.2 ± 0.8 days) compared to the no-drain group (1.8 ± 0.6 days), with $p = 0.001$. Wound infection rates were similar in both groups.

Conclusion

Routine drain placement in uncomplicated benign breast surgeries may not be necessary. Avoiding drains can reduce postoperative pain and hospital stay while maintaining acceptable complication rates.

INTRODUCTION

Benign breast diseases are among the most frequently encountered conditions in surgical practice. Common benign breast lesions include fibroadenoma, fibrocystic disease, duct ectasia, breast abscess, and phyllodes tumors. Surgical management remains the treatment of choice for symptomatic lesions, large masses, recurrent cysts, and lesions with uncertain diagnosis.

Traditionally, drains have been used following breast surgery to reduce dead space, prevent fluid accumulation, and decrease the incidence of hematoma or seroma formation. Despite these presumed benefits, drains are associated with several

disadvantages including patient discomfort, restricted mobility, prolonged hospital stay, increased anxiety, and risk of ascending infection.

With advances in surgical techniques, improved electrocautery usage, meticulous

hemostasis, and layered closure techniques, many surgeons have questioned the need for routine drain placement in benign breast procedures. Several recent studies suggest that avoiding drains does not significantly increase postoperative complications in

selected patients.

The present study was therefore undertaken to compare outcomes between drain

placement and no-drain management in patients undergoing benign breast surgeries.

AIM OF THE STUDY

To compare postoperative outcomes between drain placement and no-drain placement in benign breast surgeries.

Objectives

1. To compare postoperative pain between the two groups.

2. To evaluate seroma formation after surgery.

3. To assess postoperative wound infection rates.

4. To compare duration of hospital stay.

5. To evaluate patient satisfaction following surgery.

MATERIALS AND METHODS STUDY DESIGN

Prospective comparative study.

Study Setting

Department of General Surgery, saveetha medical college and hospital.

Study Duration

12 months.

Study Population

A total of 26 patients undergoing benign breast surgeries were included in the study.

Sample Size

26 patients. **Sampling Technique** Convenient sampling. **Inclusion Criteria**

[1] Patients aged above 18 years.

[2] Patients diagnosed with benign breast lesions.

[3] Patients undergoing elective benign breast surgery.

[4] Patients willing to provide informed consent.

Exclusion Criteria

[5] Malignant breast lesions.

[6] Patients with coagulation disorders.

[7] Uncontrolled diabetes mellitus.

[8] Recurrent breast surgeries.

[9] Patients on immunosuppressive therapy.

METHODOLOGY

Patients were divided into two groups:

[10] Group A: Drain placement group (13 patients)

[11] Group B: No-drain group (13 patients)

All surgeries were performed under standard aseptic precautions. Hemostasis was achieved meticulously in all patients. Closed suction drains were used in Group A wherever indicated. In Group B, layered closure was performed without drain

placement.

Patients were monitored postoperatively for:

[12] Pain using Visual Analogue Scale (VAS)

[13] Seroma formation

[14] Surgical site infection

[15] Duration of hospital stay

[16] Patient satisfaction

Follow-up was done on postoperative day 7 and day 14.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using SPSS software version 25.

Continuous variables were expressed as mean ± standard deviation. Categorical

variables were expressed as percentages. Independent t-test and chi-square test were used for statistical analysis. A p-value < 0.05 was considered statistically significant.

RESULTS

Table 1: Demographic Characteristics

Variable	Drain Group (n=13)	No-Drain Group (n=13)
Mean age (years)	34.8 ± 8.4	33.5 ± 7.9
Female patients	12	13
Male patients	1	0
Fibroadenoma cases	8	9
Duct ectasia	3	2
Benign cystic lesions	2	2

The demographic profile was comparable between both groups.

Table 2: Comparison of Postoperative Outcomes

Outcome	Drain Group	No-Drain Group	p-value
Mean pain score (VAS)	5.8 ± 1.1	3.9 ± 0.9	0.002
Seroma formation	2 (15.4%)	4 (30.8%)	0.36
Wound infection	1 (7.7%)	1 (7.7%)	1.00
Mean hospital stay (days)	3.2 ± 0.8	1.8 ± 0.6	0.001
Patient satisfaction	Moderate	High	0.01

Postoperative pain and hospital stay were significantly lower in the no-drain group.

Although seroma formation was more common in the no-drain group, the difference was not statistically significant.

DISCUSSION

The use of surgical drains after breast surgery has remained a subject of debate for many years. Drains are believed to reduce fluid accumulation and obliterate dead space; however, their routine use in benign breast surgeries has increasingly been questioned.

In the present study, postoperative pain scores were significantly higher among patients with drains. This finding may be attributed to tissue irritation, traction discomfort, and restricted mobility associated with drain placement.

Hospital stay was significantly prolonged in the drain group because patients were often discharged only after reduction in drain output. Early discharge in the no-drain group improved patient comfort and reduced healthcare burden.

Seroma formation was slightly higher in the no-drain group, but the difference was not statistically significant. Most seromas were minor and managed conservatively with

aspiration and compression dressing.

Wound infection rates were comparable in both groups, indicating that omission of drains did not increase infective complications.

These findings are consistent with several published studies that suggest selective rather than routine use of drains in benign breast surgeries.

CONCLUSION

Routine drain placement in uncomplicated benign breast surgeries may not be necessary. Patients managed without drains experienced lower postoperative pain, earlier mobilization, shorter hospital stay, and better overall satisfaction. Although seroma formation was slightly more common in the no-drain group, the difference was not statistically significant and was manageable conservatively.

Selective use of drains based on intraoperative findings and extent of dissection may provide optimal patient outcomes.

Limitations of the Study

[17] Small sample size.

[18] Single-center study.

[19] Short duration of follow-up.

[20] Long-term cosmetic outcomes were not assessed.

Recommendations

Further multicenter studies with larger sample sizes are recommended to validate the findings and establish standardized guidelines regarding drain usage in benign breast surgeries.

Ethical Considerations

Institutional ethical committee approval was obtained prior to commencement of the study. Written informed consent was obtained from all participants included in the

study.

REFERENCES

[1] Petrek JA, Peters MM, Nori S, et al. Axillary lymphadenectomy. A prospective, randomized trial of 13 factors influencing drainage, seroma, and infection in patients with breast cancer. Ann Surg. 1990;212(5):585-593.

[2] Srivastava V, Basu S, Shukla VK. Seroma formation after breast cancer surgery: what we have learned in the last two decades. J Breast Cancer. 2012;15(4):373-380.

[3] Lumachi F, Brandes AA, Burelli P, et al. Seroma prevention following axillary dissection in patients with breast cancer by using ultrasound scissors: a prospective clinical study. Eur J Surg Oncol. 2004;30(5):526-530.

[4] Somers RG, Jablon LK, Kaplan MJ, et al. The use of closed suction drainage after lumpectomy and axillary node dissection for

breast cancer. A prospective

[5] randomized trial. Ann Surg. 1992;215(2):146-149.

[6] Jain PK, Sowdi R, Anderson ADG, MacFie J. Randomized clinical trial investigating the use of drains and fibrin sealant following surgery for breast cancer. Br J Surg. 2004;91(1):54-60.

[7] Purushotham AD, McLatchie E, Young D, et al. Randomized clinical trial of no wound drains and early discharge in the treatment of women with breast cancer. Br J Surg. 2002;89(3):286-292.

[8] Kuroi K, Shimozuma K, Taguchi T, et al. Evidence-based risk factors for seroma formation in breast surgery. Jpn J Clin Oncol. 2006;36(4):197-206.

[9] Classe JM, Berchery D, Campion L, et al. Randomized clinical trial comparing axillary padding with closed suction drainage for the prevention of postoperative seroma after mastectomy. Br J Surg. 2006;93(7):820-824.