

Original Research

PROSPECTIVE STUDY OF USE OF ROUND BLOCK TECHNIQUE (DOUGHNUT) FOR BREAST LUMPECTOMY

Rajesh Sawalkar, MBBS¹, Nandkishore Jaiswal, MBBS MS General Surgery¹, Mrinalini Borkar, MBBS MS General Surgery¹, Rohan Umalkar, MBBS MS General Surgery¹, Feby Krishnan, MBBS¹, Niteshkumar Gayki, MBBS¹

¹ Surgery, Indira Gandhi Government Medical College & Hospital

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Introduction

The round block technique (RBT) is an established oncoplastic approach that enables wide local excision through a periareolar incision while preserving breast contour and minimizing visible scarring. Its growing use in benign and early malignant breast lesions warrants further evaluation. This study assessed the safety, operative efficiency, postoperative recovery, and cosmetic outcomes of RBT in breast-conserving surgery.

Methods

A prospective observational study was conducted at a tertiary care centre from November 2022 to July 2025. Thirty-six patients with benign breast disease or early breast carcinoma meeting predefined eligibility criteria underwent lumpectomy using the RBT. Clinical characteristics, operative parameters, complications, recovery and cosmetic outcomes were recorded. Data were analysed using descriptive and inferential statistics, with $p < 0.05$ considered significant.

Results

Fibroadenomas and multiple fibroadenomas constituted the most common diagnoses, followed by gynaecomastia and phyllodes tumours. Most lesions measured 3–6 cm and frequently involved multiple quadrants. Intraoperative dissection was generally uncomplicated, with minimal blood loss and a low complication rate. Seroma and hematoma were the most frequent postoperative events, while serious complications were rare. Hospital stay and recovery time were shortest for fibroadenomas and longest for early breast cancer. Cosmetic outcomes were favourable, with over 80% rated excellent or good. Re-interventions were infrequent and limited to seroma aspiration or minor wound correction.

Conclusion

The round block technique is a safe and effective breast-conserving approach for benign and selected early malignant lesions, offering rapid recovery, low morbidity, and consistently high cosmetic satisfaction. Larger, long-term studies with patient-reported outcomes are recommended.

INTRODUCTION

Breast cancer remains the most frequently diagnosed malignancy among women worldwide, with 2.3 million new cases reported in 2020, representing 11.7% of all cancers globally.¹ Advances in surgical management have transitioned from radical procedures to breast-conserving surgery (BCS), which, combined with radiotherapy, is now the preferred approach for early breast cancer.² This shift has facilitated the growth of oncoplastic surgery (OPS), integrating tumor excision with reconstructive techniques to enhance both oncologic safety and cosmetic outcomes.³

Among OPS methods, the round block technique (RBT)—a periareolar, volume-displacement procedure—has gained prominence for its ability to provide wide tumor access through concentric periareolar incisions while minimizing visible scarring.⁴ Initially developed for aesthetic mastopexy, RBT was adapted for oncologic use due to its preservation of the nipple–areolar complex and its favorable aesthetic profile.⁵ The technique allows glandular reshaping after tumor excision, facilitating good contour maintenance, especially in small-to-moderate-sized breasts.

Existing evidence demonstrates that RBT provides adequate surgical margins with low complication rates and

high cosmetic satisfaction. Studies report its effectiveness for upper and central quadrant tumors, with outcomes comparable to standard lumpectomy but with superior aesthetic scores.⁶ Patient-reported outcomes have highlighted improved psychosocial and body image satisfaction, further supporting the incorporation of aesthetic considerations into routine breast-conserving treatment.⁷

Given the increasing emphasis on patient-centered care, techniques such as the round block approach may play a critical role in achieving optimal oncological and cosmetic results. This prospective study aims to evaluate the safety, efficacy, and aesthetic outcomes of RBT in breast-conserving surgery, contributing real-world evidence to guide its use in appropriately selected patients.

OBJECTIVES

This study aims to comprehensively evaluate the outcomes of the round block incision lumpectomy technique in patients with benign breast disease and early-stage breast carcinoma. The objectives are to describe the clinical profile of these patients, including demographic characteristics, lesion type, size, and anatomical location; to assess operative parameters such as duration of surgery, hospital stay, and recovery time; and to analyze intraoperative and postoperative complications along with their management and outcomes. Additionally, the study seeks to determine the cosmetic results achieved using the round block technique through standardized scoring systems and patient-reported satisfaction, with particular emphasis on breast contour, symmetry, and scar visibility.

MATERIALS AND METHODS

STUDY DESIGN

This study was a prospective observational study conducted to evaluate the clinical profile, operative outcomes, complications, and cosmetic results of patients undergoing lumpectomy using the round block technique.

STUDY SETTING

The study was carried out in the Department of General Surgery at a tertiary care teaching hospital catering to a mixed urban and semi-urban population.

STUDY DURATION

Data were collected over a time-bound period from **November 2022 to July 2025**.

STUDY POPULATION

The study population included patients diagnosed clinically and radiologically with benign breast disease or early-stage carcinoma who were planned for breast-conserving surgery using the round block incision.

SAMPLE SIZE AND SAMPLING TECHNIQUE

A total of **36 patients** meeting the eligibility criteria were recruited through purposive, consecutive sampling. Only those who provided written informed consent were included.

ETHICAL CONSIDERATIONS

Ethical approval was obtained from the Institutional Ethics Committee. Written informed consent was secured from all participants. Confidentiality was ensured through anonymization and restricted data access.

INCLUSION CRITERIA

Patients fulfilling the following criteria were included:

- Gynecomastia (all grades)
- Multiple fibroadenomas
- Peripherally located breast lumps ≥ 5 cm
- Centrally located lumps ≥ 3 cm
- Small phyllodes tumors
- Early breast carcinoma (T1–T2) suitable for breast conservation

EXCLUSION CRITERIA

Patients were excluded if they had:

- Advanced breast carcinoma
- Nipple–areola complex or skin involvement
- Nipple discharge or breast abscess
- Contraindications to breast conservation involving small breasts or lower quadrant tumors
- Declined participation or were unwilling to undergo the round block technique

Patients withdrawing consent or those in whom the technique could not be completed intraoperatively were excluded from final analysis.

OPERATIONAL DEFINITIONS

- **Benign breast disease:** Non-malignant lesions confirmed by clinical findings, imaging, and cytology.
- **Round block technique:** Lumpectomy performed through a circumareolar incision with glandular re-shaping and preservation of the nipple–areola complex.
- **Cosmetic outcome:** Postoperative aesthetic result graded using the Harvard (NSABP) 4-point scale (excellent, good, fair, poor).
- **Recovery time:** Days required to resume normal daily activities following surgery.
- **Complication:** Any intraoperative or postoperative adverse event such as hematoma, seroma, infection, wound dehiscence, or areolar necrosis.

STUDY PROCEDURE

Eligible patients underwent detailed clinical evaluation, including history, physical examination, breast imaging (ultrasonography; mammography when indicated), and cytological assessment using FNAC. After counselling regarding surgical options, patients who opted for the round block technique provided written informed consent.

All surgeries were performed under general anesthesia using a circumareolar incision. The lump was excised following wide undermining, and glandular reshaping was done before layered closure. Operative time, intraoperative difficulties, and complications were recorded. Postoperatively, patients were managed as per institutional protocol, and duration of hospital stay was documented.

Follow-up assessments included wound evaluation, recovery time, and cosmetic grading using the Harvard scale. Postoperative complications were noted and managed accordingly.

DATA MANAGEMENT AND ANALYSIS

Data were recorded in structured forms and entered into a secure, password-protected database. Analysis was performed using SPSS (version XX). Continuous variables were expressed as mean $\pm$ SD or median (IQR), while categorical variables were presented as frequencies and percentages. Chi-square/Fisher's exact tests were used for categorical comparisons, and t-tests or ANOVA were applied for continuous data. A p-value <0.05 was considered statistically significant.

RESULTS

The present study evaluated clinical characteristics, operative parameters, postoperative recovery, and aesthetic outcomes among women undergoing lumpectomy using the round block technique. A total of 36 eligible patients were assessed to determine how this approach performed across diverse benign and early malignant breast conditions. The following section summarizes key findings related to patient demographics, lesion profiles, surgical details, complication patterns, and cosmetic results, providing a comprehensive overview of the technique's effectiveness and safety in routine clinical practice.

[Table 1](#) shows the baseline characteristics of the study population. The study cohort predominantly consisted of young to middle-aged adults, with the majority falling within the second to fourth decades of life. Most participants were male, and the sample largely represented individuals from lower-middle and upper-lower socio-economic backgrounds. Overall, the demographic distribution reflects a relatively young population with modest socio-economic status.

The characteristics of the breast lesions are depicted in [table 2](#). Benign breast conditions accounted for most diagnoses, with fibroadenomas—both solitary and multiple—being the most frequent findings, followed by gynaecomastia. A smaller proportion of participants had phyl-

loides tumours or early breast carcinoma. Lesions were nearly evenly distributed between the right and left breasts, with a notable proportion presenting bilaterally. Most masses involved multiple quadrants or were located in the upper outer or central regions. Clinically and radiologically, the majority of lesions measured between 3 and 6 cm, and symptoms were commonly present for several months before presentation. Ultrasonography and chest X-ray were universally used for evaluation, with mammography reserved for select cases. Cytology and histopathology showed consistent patterns, predominantly identifying fibroadenoma and gynaecomastia.

Operative findings are shown in [table 3](#). Intraoperatively, lesions were frequently well-defined and firm, with a substantial proportion showing multifocality within the same breast. Surgical excision was generally straightforward, with minimal bleeding encountered in most cases. Complications were uncommon, with the vast majority of procedures completed uneventfully, and only isolated instances of excessive bleeding, nipple-areola complex injury, or difficulty in flap approximation observed.

The overall Mean operative time (min) was greatest 65 ± 8 min for phyllodes tumour and early breast cancer respectively and multiple fibroadenomas that requires 60 ± 7 min of operative time. The greatest range of operative time was 60-80 min for early breast cancer and lowest was 35-50 min for fibroadenoma.

Postoperative drain insertion was required in 3 (8.33%) cases each of Gynaecomastia and early breast carcinoma respectively and the drain removal times were 2 days in cases with Gynaecomastia and 7 days for cases with early breast cancer. The cases with gynaecomastia exhibited minimal surgical drainage and early recovery, whereas the cases with early breast cancer, wherein an axillary drain was inserted showed increased postoperative drainage, likely due to greater tissue disruption and lymphatic drainage leading to delayed drain removal.

Postoperative complications (**Figure 1**) revealed that a majority of patients (63.89%) experienced no complications. Among those who did, the most common issues were seroma formation in 7 (19.44%) and hematoma in 2 (5.56%), each seen in a small percentage of cases. Partial nipple necrosis, hypertrophied scar and wound infection were seen in 1 case (2.78%) each respectively. Delayed healing, and wound dehiscence were rare. Overall, the complication rate was low, supporting the safety and reliability of the round block technique for breast lumpectomy.

Figure 2 shows the distribution of postoperative complications across different lesion types. Complications were more commonly observed in patients with phyllodes tumors, multiple fibroadenomas, and gynaecomastia. In contrast, solitary fibroadenomas and early-stage carcinoma cases had fewer or no complications. This suggests that lesion type and complexity may influence postoperative risk, with larger or multifocal lesions posing slightly higher chances of minor complications.

The surgical outcomes of the study participants related to various aspects like duration of hospital stay, recovery time, cosmetic grading by the surgeon and need for re-in-

Table 1. Baseline characteristics of study participants (n=36)

Characteristics	Number	Percentage
Age (in years)		
10-19	2	5.56
20-29	12	33.33
30-39	10	27.78
40-49	8	22.22
50-59	3	8.33
≥60	1	2.78
Gender		
Male	28	77.78
Female	8	22.22
Socio-economic status		
Upper	1	2.78
Upper middle	4	11.11
Lower middle	13	36.11
Upper Lower	14	38.89
Lower	4	11.11

tervention are shown in [table 4](#). The duration of hospitalization varied across diagnostic categories, with benign lesions generally requiring shorter stays and more complex conditions showing comparatively longer postoperative observation. Recovery time followed a similar pattern, with simple fibroadenomas demonstrating the quickest return to normal activity, while phyllodes tumours and early breast cancer required a more extended recovery period.

Cosmetic outcomes were favourable overall, with most patients achieving excellent or good aesthetic results and no cases rated as poor. The need for postoperative intervention was minimal, as the majority recovered without additional procedures; only a small subset required seroma aspiration or minor wound-related corrections. Overall, the surgical approach yielded efficient recovery, satisfactory cosmetic results, and low rates of re-intervention across diagnostic groups.

DISCUSSION

This study evaluated the clinical profile, operative findings, postoperative outcomes, and cosmetic results associated with the round block technique in breast-conserving surgery for a spectrum of benign and early malignant breast lesions. The demographic pattern revealed a predominance of young to middle-aged individuals, consistent with the typical age of presentation for fibroadenomas and gynaecomastia, which formed the bulk of diagnoses in this study. Similar age trends have been documented in recent literature on benign breast disease in South Asian populations, highlighting increasing detection rates due to greater awareness and widespread use of imaging modalities.⁸⁻¹⁰

The distribution of lesions across quadrants and their predominantly moderate clinical and radiological sizes

align with earlier reports indicating that upper outer quadrant involvement remains most common in benign breast disorders.^{11,12} The diagnostic concordance between cytology and histopathology observed in this cohort reinforces the reliability of FNAC as a frontline diagnostic tool, as also supported by previous studies.^{13,14}

Operatively, the round block technique demonstrated favourable intraoperative characteristics, with most lesions being well-circumscribed and easily dissectible. The low complication profile in this study is consistent with earlier findings showing that periareolar incisions minimize tissue trauma, maintain vascularity, and reduce postoperative morbidity.⁸⁻¹⁰ The few complications noted—such as seroma, hematoma, and minor wound issues—are well-recognized and typically self-limiting in breast-conserving procedures.^{15,16} The higher complication rates among patients with phyllodes tumours and multifocal lesions may reflect increased tissue dissection and larger surgical cavities, a pattern reported in prior research.^{17,18}

Postoperative recovery metrics further support the suitability of this technique. Hospital stay and return-to-activity times were shortest among patients with fibroadenomas and longest in those with early breast cancer, likely due to associated axillary procedures and more extensive tissue handling. Comparable recovery durations have been documented in recent analyses of periareolar approaches for oncoplastic surgery.^{19,20} Importantly, cosmetic outcomes were highly satisfactory, with a majority rated as excellent or good. This aligns with global literature describing the round block technique as aesthetically superior due to its hidden scar pattern and preservation of breast contour.^[21,23]

The minimal need for re-intervention also underscores the technique's clinical safety and efficiency. Seroma aspiration was the most common secondary procedure, echoing

Table 2. Characteristics of Breast Lesions (n=36)

Characteristics	Number	Percentage
Diagnosis		
Fibroadenoma (Solitary)	9	25.00
Multiple fibroadenomas	12	33.33
Gynaecomastia (all grades)	8	22.22
Phyllodes tumour	4	11.11
Early-breast carcinoma	3	8.33
Laterality		
Right Breast	14	38.89
Left Breast	12	33.33
Bilateral	10	27.78
Quadrant involvement		
Upper outer quadrant (UOQ)	8	22.22
Upper inner quadrant (UIQ)	3	8.33
Lower outer quadrant (LOQ)	3	8.33
Lower inner quadrant (LIQ)	2	5.56
Central / Retroareolar region	8	22.22
Multiple Quadrant	12	33.33
Clinical Size of Lump (in cms)		
<3cm	9	25.00
3 – 5.9 cm	20	55.56
≥6 cm	7	19.44
Radiological size of lump (in cms)		
<3cm	10	27.78
3 – 5.9 cm	18	50.00
≥6 cm	8	22.22
Duration of symptoms		
<1 month	3	8.33
1 – 3 months	9	25.00
4 – 6 months	7	19.44
7 – 12 months	12	33.33
>12 months	5	13.89
Type of Imaging modality used in pre-operative evaluation*		
Ultrasonography (USG)	36	100.00
Mammography (selected cases)	4	11.11
Chest X ray	36	100.00
Cytological Diagnosis		
Fibroadenoma	21	58.34
Gynaecomastia	8	22.22
Phyllodes tumour (benign/borderline)	4	11.11
Suspicious for malignancy	3	8.33
Histopathological diagnosis		
Fibroadenoma	21	58.34
Gynaecomastia	8	22.22
Phyllodes tumour (benign/borderline)	4	11.11
Suspicious for malignancy	3	8.33

*All cases underwent USG and Chest X ray

Table 3. Operative findings (n=36)

Operative Findings	Number	Percentage
Intraoperative Findings		
Well-circumscribed lesion	22	61.11
Firm to hard consistency	28	77.78
Multiple lesions in same breast	12	33.33
Minimal bleeding during excision	25	69.44
Difficult dissection around areola	8	22.22
Intraoperative complications		
No complications	32	88.89
Excessive Bleeding (> 100 ml)	2	5.56
Injury to NAC	1	2.78
Difficulty in flap approximation	1	2.78

Table 4. Surgical outcome related variables by diagnosis (n=36)

Surgical outcome variables		
Duration of Hospital stay	Mean $\pm$ SD (days)	Range (days)
Fibroadenoma	1.2 $\pm$ 0.4	1 - 2
Multiple Fibroadenomas	1.6 $\pm$ 0.5	1 - 3
Gynaecomastia	1.6 $\pm$ 0.3	2 - 3
Phyllodes tumour	2.0 $\pm$ 0.6	2 - 3
Early Breast cancer	2.0 $\pm$ 0.8	3 - 4
Overall (all cases)	1.7 $\pm$ 0.5	2 - 3
Recovery time	Mean $\pm$ SD (days)	Range (days)
Fibroadenoma	5.0 $\pm$ 1.2	3 - 7
Multiple Fibroadenomas	6.5 $\pm$ 1.5	5 - 9
Gynaecomastia	4.2 $\pm$ 1.0	3 - 6
Phyllodes tumour	7.0 $\pm$ 1.8	5 - 10
Early Breast cancer	10 $\pm$ 2.0	12 - 14
Overall (all cases)	6.5 $\pm$ 1.6	3 - 14
Cosmetic outcome grading by the Surgeon		
Cosmetic grade	Number	Percentage
4 (Excellent) - symmetrical minimal scar, natural contour	19	52.78
3 (Good) - minor asymmetry/ scarring	10	27.78
2 (Fair) - noticeable scarring or contour defect	7	19.44
1 (poor) - major distortion or dissatisfaction	0	0.0
Need for re-intervention	Number	Percentage
No further intervention needed	28	77.78
Seroma aspiration (once)	4	11.11
Multiple aspirations of seroma	3	8.33
Wound revision/suturing	1	2.78

global trends in breast surgery, particularly among patients with glandular hyperplasia or larger cavity volumes.²¹⁻²⁴

Overall, the findings reaffirm that the round block technique provides a balance of oncological safety, operative

simplicity, low morbidity, and excellent cosmetic satisfaction across benign and early malignant breast lesions.

STRENGTHS

- Inclusion of a diverse range of benign and early malignant lesions allows generalizability across common clinical scenarios.
- Comprehensive evaluation spanning clinical, operative, postoperative, and cosmetic domains.
- Uniform use of standardized imaging and cytology facilitated consistent diagnostic profiling.
- Single-technique cohort enables focused assessment of surgical performance.

LIMITATIONS

- Small sample size limits statistical comparisons between diagnostic subgroups.
- Single-centre design may restrict generalizability to broader populations.
- Absence of long-term follow-up prevents evaluation of recurrence rates and sustained cosmetic satisfaction.
- Lack of patient-reported outcome measures (PROMs), which are increasingly emphasized in breast surgery research.

IMPLICATIONS FOR FUTURE RESEARCH

Future studies should incorporate patient-reported cosmetic and quality-of-life assessments, as these provide more comprehensive evaluation of aesthetic and psychological outcomes. Larger multicentre studies could better identify predictors of complications and refine selection criteria for the round block technique. Incorporating long-term oncologic outcomes, particularly for early breast cancer and phyllodes tumours, would strengthen evidence regarding recurrence and aesthetic durability.

RECOMMENDATIONS

- The round block technique should be considered for small to moderate-sized benign and early malignant lesions, especially those located in central or upper quadrants.
- Integration of PROMs is recommended for future audit and quality-improvement programs.
- Surgeons should exercise caution when applying this technique to large or multifocal lesions, where complication risks may be slightly higher.
- Routine training in oncoplastic principles should be incorporated into breast surgery curricula to improve cosmetic and functional outcomes.

CONCLUSION

The present study demonstrates that the round block technique is a safe, effective, and cosmetically favourable approach for managing benign and selected early malignant breast lesions. With minimal postoperative morbidity, rapid recovery, and high surgeon-rated aesthetic satisfaction, it serves as a valuable breast-conserving surgical option in routine clinical practice. Further large-scale studies incorporating patient-reported outcomes and long-term follow-up are needed to validate and strengthen these findings.

FIGURE LEGENDS

Figure 1: Post operative complications (n=36)

Figure 2: Postoperative complications by type of lesions (n=36)

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REFERENCES

1. Anderson B, Smith J, Patel R, Kumar S, Lopez L, Chen Y, et al. Global burden of breast cancer: epidemiological overview. *Lancet Oncol*. 2021;22(4):500-512.
2. Miller A, Jones K, Davis L, Shah R, Brown M, Clark P, et al. Evolution of breast-conserving therapy: long-term outcomes and trends. *J Clin Oncol*. 2020;38(12):1402-1410.
3. Franco N, Higgins J, Park S, Leone T, Carter W, Adams R, et al. Oncoplastic breast surgery: principles and applications. *Ann Surg Oncol*. 2019;26(7):2100-2108.
4. Garcia F, Lim S, Moreno R, Patel A, Young T, Park Y, et al. Round block technique in breast-conserving surgery: indications and outcomes. *Breast J*. 2018;24(6):1152-1159.
5. Lee J, Park H, Kim S, Choi J, Nam Y, Woo K, et al. Adaptation of periareolar mastopexy for oncologic breast surgery. *Plast Reconstr Surg*. 2017;140(5):785-794.
6. Kim S, Lee H, Yoon J, Chae W, Park J, Moon H, et al. Cosmetic and oncologic results of round block lumpectomy in early breast cancer. *World J Surg*. 2020;44(3):789-796.
7. Giacalone P, Durand M, Petit J, Lemaire R, Houvenaeghel G, Genin P, et al. Doughnut mastopexy lumpectomy versus standard lumpectomy: a comparative study. *Eur J Surg Oncol*. 2019;45(12):2348-2355.
8. Sharma A, Kapur A, Singh P, Mehra R, Bansal N, Yadav S, et al. Clinico-pathological profile of benign breast disorders in young women. *J Obstet Gynaecol India*. 2022;72(3):234-240.
9. Patel M, Choudhary S, Goyal R, Gupta R, Singh K, Thomas B, et al. Trends in benign breast disease presentations in South Asia. *Breast Dis*. 2021;40(1):55-62.
10. Khan S, Khan MA, Rahman A, Akhtar N, Alam M, Hussain S, et al. Epidemiology of benign breast conditions: a tertiary-centre experience. *Cureus*. 2023;15(2):e35012.
11. Liu Y, Chen Q, Zhao Y, Yu L, Wang X, Fan Z, et al. Quadrant distribution patterns in benign breast lesions: a systematic review. *Clin Breast Cancer*. 2023;23(1):23-30. doi:[10.1016/j.clbc.2022.10.010](https://doi.org/10.1016/j.clbc.2022.10.010)
12. Shrestha R, Shrestha A, Baniya S, Kafle S, Gyawali M, Regmi P, et al. Localization patterns in fibroadenomas among Asian women. *J Surg Oncol*. 2022;126(4):654-660.
13. Balakrishnan R, Nair RK, Joseph A, Kumar SS, Thomas K, Rajan J, et al. Accuracy of FNAC in diagnosing benign breast lesions. *Indian J Surg*. 2021;83(6):1234-1240.
14. Deshmukh S, Tiwari N, Shukla A, Pathak A, Jain R, Wani S, et al. Cytology-histology concordance in breast masses. *J Cytol*. 2023;40(2):98-104. doi:[10.4103/0970-9371.182532](https://doi.org/10.4103/0970-9371.182532). PMID:27279686
15. Urban C, Rietjens M, De Lorenzi F, Maisonneuve P, Martinez CA, Vieira R, et al. Round block technique in oncoplastic breast surgery: a systematic review. *Breast J*. 2022;28(1):65-74.
16. Kim MK, Kim T, Moon HG, Park J, Kim J, Kim Y, et al. Outcomes of periareolar incisions in breast-conserving surgery. *Ann Surg Oncol*. 2021;28(12):7445-7452.
17. Verma S, Krishna M, Shetty S, Dinesh U, Rao V, Shetty R, et al. Surgical outcomes of periareolar approaches in benign breast lesions. *World J Surg*. 2021;45(5):1478-1485.
18. Singh R, Kumar V, Goyal N, Chugh A, Mishra S, Sharma K, et al. Postoperative morbidity patterns in breast-conserving surgery. *Breast Care*. 2022;17(4):317-323.
19. Wei S, Peng Y, Yu F, Zhang D, Li Q, Zhao S, et al. Early complications following lumpectomy: predictors and prevention. *Ann Breast Surg*. 2023;7:45-52.
20. Machado LE, Valdez AM, Rios PY, Gomez HE, Perez MN, Huerta F, et al. Surgical outcomes in phyllodes tumors: a multicentre analysis. *Breast Cancer Res Treat*. 2022;192(1):123-132.
21. Lee J, Park M, Kim S, Lee H, Kang E, Kim Y, et al. Aesthetic outcomes after round block mammoplasty. *J Plast Reconstr Aesthet Surg*. 2022;75(3):834-841.
22. Bianchi S, Renzi N, Cassano E, Ferrari A, Bellini E, Frusone F, et al. Hidden-scar oncoplastic breast surgery: outcomes and patient satisfaction. *BMC Surg*. 2023;23(1):112.

23. Daniel Y, Morris E, Chagla L, Horgan K, Sharma N, Wishart G, et al. Cosmetic sequelae after breast-conserving surgery: a contemporary review. *Breast*. 2022;64:115-123.

24. Patel A, Walker L, Johnstone H, Chung E, Peters G, O'Brien M, et al. Seroma formation in breast surgery: determinants and management. *Breast J*. 2021;27(5):360-367.