Original Article

Journal of Brahmanbaria Medical College
Volume 08 Issue 01 January 2026 ; 9-14
DOI: https://doi.org/10.3329/jbrmc.v8i1.89093

Oncoplastic Breast Surgery : An Early Experience in CMH Dhaka

Syeda Asmema Shashi[1*] Masroor Hasan[2] Syed Waheduzzaman[3]
Md Rakibul Huda[4]

ABSTRACT

Background: Oncoplastic Breast Surgery (OBS) integrates oncologic principles with plastic surgical techniques to optimize cancer control and cosmetic outcomes. Despite global adoption, OBS is not yet widely used in many low- and middle-income countries (LMICs), including Bangladesh. The purpose of the study to determine the feasibility, aesthetic results and safety of oncoplastic breast surgery at CMH, Dhaka.

Materials and methods: This observational retrospective study was performed in Combined Military Hospital (CMH) Dhaka, between January 1, 2021 and December 31, 2022. Fifty-six women who had histologically proven breast cancer and underwent OBS were included. Demographic, clinicopathological, surgical, and outcome details were reviewed.

Results: The average age of the patients was 43.2 ± 6.8 years, and 50.0% were overweight. Most were invasive ductal carcinoma (98.2%), with a mean size of 2.6 cm ± 0.7. Volume displacement techniques predominated (67.9%). Postoperative margin clearance was achieved in all cases, with no requirement for reoperation.The overall 30-day complication rate was 16.1%, with no major morbidity. Patient-reported cosmetic satisfaction was high, with 64.3% rating outcomes as excellent. No local or distant recurrence was observed at a mean follow-up of 18 months.

Conclusion: OBS is a safe and effective surgical modality in the Bangladeshi context, ensuring oncologic safety and aesthetic output. These results support broader implementation of OBS in LMIC settings.

KEY WORDS
Breast cancer; Oncoplastic Breast Surgery (OBS); Surgical outcomes.

INTRODUCTION

Breast cancer remains the most common cancer in women and affects millions of patients worldwide, causing physical, psychological and socioeconomic impact. According to calculated GLOBOCAN 2020 estimates, it was estimated that breast cancer accounted for about 2.3 million new cases of cancer (11.7% of total new cancer cases) around the world.[1]

1. Lt Col & Classified Specialist in Surgery (Plastic Surgeon)
CMH, Chattogram.
2. Brig Gen (Retd) & Senior Consultant, Plastic Reconstructive and Aesthetic Surgery
Evercare Hospital, Dhaka.
3. Brig Gen & Professor of Burn Plastic and Reconstructive Surgery
CMH, Dhaka.
4. Lt Col & Classified Specialist in Surgery
CMH, Dhaka.
*Correspondence : Lt Col (Dr) Syeda Asmema Shashi
Email: asmemashashi@yahoo.com
Cell : +88 01915 32 63 49

Date of Submission : 10.11.2025
Date of Acceptance : 12.12.2025

Breast cancer incidence and mortality rates are on the rise in South Asia, Bangladesh being no exception. Unfortunately, most of the patients in our country present late,in an advanced stage,possibly due to poor disease knowledge, rural origin, and lack of economic or cultural access.[2] In addition, higher rural-urban disparities in access to diagnosis, screening, and specialist surgical care reducing the practicability of breast-conserving strategies in most public hospitals.[3]

Historically, surgery for breast cancer centered on the radical mastectomy as reported by Halsted in the late 19th century.[4] Pivotal randomized studies with two decades of follow-up demonstrated that for judiciously-selected early-stage disease, lumpectomy and whole breast irradiation provide overall and disease free survival equivalent to mastectomy.[5] A large meta-analysis also demonstrates that adjuvant radiotherapy following BCS significantly decreases the rate of disease recurrence and cancer related death, enhancing the oncologic security of a breast-conserving surgery.[6]

Out of this evolutionary process arose Oncoplastic Breast Surgery (OBS) a cross-disciplinary surgical paradigm whereby principles of oncologic resection are combined with plastic and reconstructive strategies in order to facilitate both local control and appearance.[7,8]

Journal of Brahmanbaria Medical College
Volume 08 Issue 01 January 2026 ; 9-14
DOI: https://doi.org/10.3329/jbrmc.v8i1.89093

OBS permits greater volumes to be resected, along with preservation or improvement of breast contour with higher breast conservation rates, especially in patients with larger tumors or limited breast volume when standard BCS would be unattainable.[5,9]

Currently, international guidelines are providing active support for OBS as the preferred surgical approach in suitable patients. The European Society for Medical Oncology (ESMO) and National Comprehensive Cancer Network (NCCN) guidelines suggest using oncoplastic techniques not only in upfront, but also in post-neoadjuvant setting, if possible, because of their outcome of similar local recurrence rate and better quality of life.[10,11]

Oncoplastic Breast Surgery (OBS) is underutilized in many LMICs, such as Bangladesh, despite its growing evidence base and potential for improving quality of life.Specific structural and sociocultural challenges hinder the broader implementation of OBS in our country. Many patients express fear that breast conservation may increase the risk of cancer persistence or recurrence, favoring more radical approaches. The cost of OBS procedures, particularly when coupled with adjuvant therapies like radiotherapy, poses a significant burden, especially for low-income and rural populations. Access to radiotherapy facilities remains limited and centralized, making it difficult for patients outside urban centers to complete full treatment cycles. Follow-up incompliance and discontinuation of adjuvant therapy are common due to financial, logistical, and educational limitations. Moreover, aesthetic outcomes are often undervalued by elderly patients or those from lower socioeconomic backgrounds, where survival is prioritized over appearance. Importantly, awareness about OBS is low even among some healthcare professionals, resulting in fewer referrals and missed opportunities for breast-conserving interventions. Continued bottlenecks to both in trained OBS workforce and operating/radiotherapy capacity further restrict its execution.

With this background, we describe the early institutional experience of OBS at a tertiary Military Hospital in Dhaka to determine the feasibility, aesthetic results, and oncologic safety, as well as guiding scale-up and training.

MATERIALS AND METHODS

This observational retrospective study was carried out in the Department of Plastic Surgery, Combined Military Hospital (CMH), Dhaka, over a period of two years from January 1, 2021, to December 31, 2022. Fifty-six consecutive female patients, aged 18 or older, with pathologically proven primary breast cancer, who underwent OBS, were enrolled in the study. Patients with recurrent disease or metastasis at operation and with incomplete records were excluded. Data were obtained from hospital records and follow-up documentations. When necessary, additional datawere obtained through telephone follow-up.

Data were analyzed using SPSS (Version 26.0). Mean (SD) was used to describe the continuous variables. Categorical variables were described in terms of frequency and percentage. Epidemiology Pearson's correlation analysis was used to investigate the associations between certain continuous variables (Age, BMI, tumor size, operation time and weight of specimen). Statistical significance was defined as a $p<0.05$.

RESULTS

The study included 56 patients underwent oncoplastic breast surgery at CMH Dhaka. Age ranged from 30 to 62 years, with a mean ± SD of 43.2 ± 6.8 years. The majority of patients were in the 40–49-year age group (58.9%, n = 33) followed by those aged ≥ 50 years (23.2%, n = 13) and 30–39 years (17.9%, n = 10) (Table I). The mean BMI was 26.1 ± 3.4 kg/m². Half of the patients were overweight (BMI 25–29.9 kg/m², 50.0%, n = 28) while 17.9% (n = 10) were obese (BMI ≥30 kg/m²) and 32.1% (n = 18) had a normal BMI (18.5–24.9 kg/m²). Most patients were classified as ASA grade I (42.9%) or grade II (50.0%) with only a small proportion in ASA grade III (7.1%). Majority of the tumour were invasive ductal carcinoma (98.2%) and the the mean tumor size was 2.6 ± 0.7 cm (Range: 1.5-3.8). Other tumour characteristics are shown in Table I.

Table I Distribution of study population based on Tumor Characteristics (n = 56)

Tumor Characteristics	Category	Frequency (%)
Tumor location	Upper outer quadrant	29 (51.8%)
	Lower outer quadrant	17 (30.4%)
	Central quadrant	7 (12.5%)
	Lower inner quadrant	2 (3.6%)
	Upper inner quadrant	1 (1.7%)
Grade	I	7 (12.5%)
	II	33 (58.9%)
	III	16 (28.6%)
Receptor status	ER/PR positive	34 (60.7%)
	HER2 positive	10 (17.9%)
	Triple negative	12 (21.4%)

Journal of Brahmanbaria Medical College
Volume 08 Issue 01 January 2026 ; 9-14
DOI: https://doi.org/10.3329/jbrmc.v8i1.89093

Tumor Characteristics	Category	Frequency (%)
Clinical stage	I	8 (14.3%)
	II	32 (57.1%)
	III	16 (28.6%)
Neoadjuvant chemotherapy	Received	8 (14.3%)
	Not received	48 (85.7%)
Ultrasoundfindings	Fibrocystic disease	1 (1.8%)
	Malignant lesion	55 (98.2%)
Mammogram (BIRADS)	0	2 (3.6%)
	3	3 (5.4%)
	4a	4 (7.1%)
	4b	15 (26.8%)
	4c	26 (46.4%)
	6	8 (14.3%)

Operative time ranged from 2 to 3.75 hours, with a mean duration of 2.75 hours. Drainage was maintained for 5 to 12 days, with a mean drain duration of 7 days. Close margins on frozen section were observed in 4 patients (7.1%) all were cleared by immediate re-excision and no patient required subsequent reoperation. The mean specimen weight was 210 ± 75 g. Types of oncoplastic surgical techniques used, post-operative complications and patient satisfaction are displayed in Fig 1-3 respectively. The surgical approaches were categorized into volume displacement (Rotation advancement flap, therapeutic mastopexy, Grissoti flap) and volume replacement techniques (LICAP, AICAP and LD myocutaneous flap) based on reconstructive methodology following tumor excision. Rotation advancement flap, performed in 23 patients (41.1%) represents the most common approach in this cohort. The Lateral Intercostal Artery Perforator (LICAP) flap was the most common volume replacement technique, utilized in 15 patients (26.8%), underscoring its applicability in lateral breast defects.

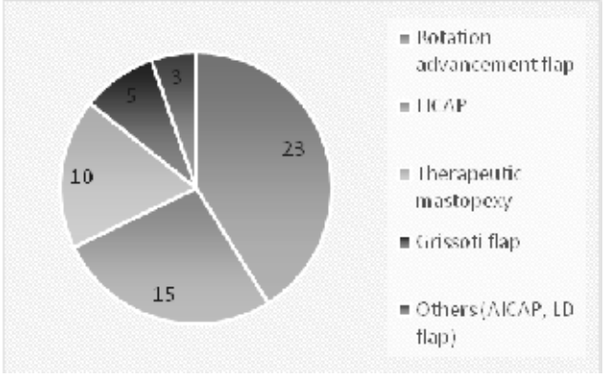

Figure 1 Distribution of study population based on Surgical Techniques (n = 56)

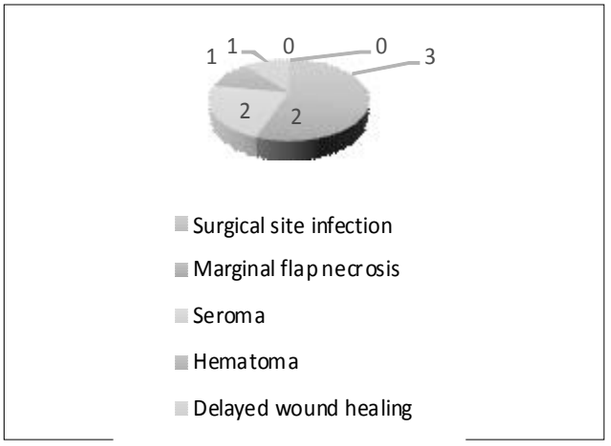

Figure 2 Postoperative complications within the first 30 days following surgery (n=56)

Figure 3 Distribution of study population based on Patient Satisfaction (n = 56)

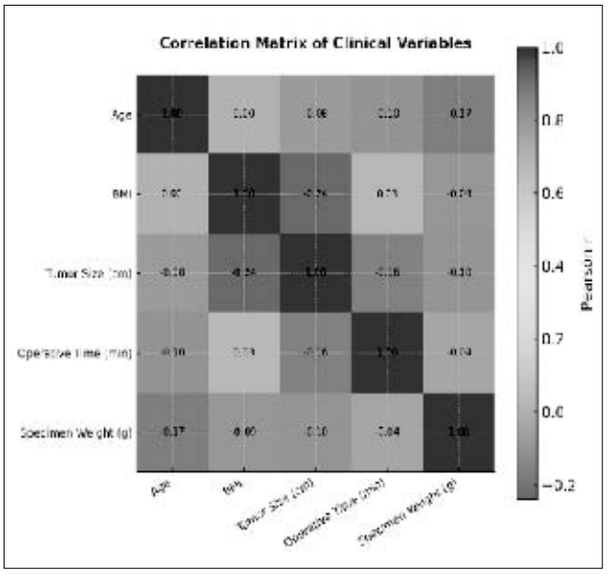

Figure 4 Correlation matrix of clinical and operative variables (Age, BMI, Tumor Size, Operative Time and Specimen Weight) among patients undergoing Oncoplastic Breast Surgery

Journal of Brahmanbaria Medical College
Volume 08 Issue 01 January 2026 ; 9-14
DOI: https://doi.org/10.3329/jbrmc.v8i1.89093

The correlation matrix illustrates the interrelationships between patient- and surgery-related variables (Figure 4). Tumour size showed a positive correlation with operative time and specimen weight, indicating that larger tumours required longer operations and resulted in greater tissue excision. Conversely, age and BMI exhibited only weak associations with operative parameters, suggesting that these demographic factors had minimal impact on surgical complexity in this cohort. Overall, the analysis highlights that operative factors were primarily influenced by tumour-related characteristics rather than patient comorbid variables.

No local or distant recurrence was observed in any patient during the study period. The mean follow-up duration was 18 ± 6 months (Range: 6–24 months). At the last follow-up, all patients were alive, corresponding to an overall survival of 100% in this cohort.

DISCUSSION

This is one of the early series of OBS in Bangladesh and provides significant information about patient characteristics, tumor biology, surgical management, and early outcomes. The results add to the growing evidence base in favor of safety, feasibility and aesthetic advantages of OBS, especially in LMICs where such techniques are underutilized. The average patient age in our study was 43.2 years and around 59% were aged between 40 and 49 years. This is inline with trends observed in the region, where there seems to be a higher incidence of breast cancer at a younger age than in Western countries, it also indicates a predominance of middle-aged women underwent OBS in the study population.[12]

The average BMI was 26.1 kg/m² and half of the patients were overweight. These values are somewhat higher than those reported in some Asian series, but in keeping with the OBS global series, where high BMI is ausual finding.[13] Not with standing, most of the patients presented an ASA grade I or II, meaning that the overall anesthetic risk was low, constituting a favorable profile for OBS surgery.[14] The pathology of tumors in this cohort was consistent with the international profile, that is, invasive ductal carcinoma was the most frequent (98.2%) histology and tumors were typically located in the upper outer quadrant (location in 51.8%). These findings are consistent with the global distribution profiles observed in previous large-scale surgical studies.[15,16] The average tumor size is 2.6 cm and grade II (58.9%) and grade III (28.6%) lesions constituted majority of the cohort suggesting a moderate to high degree of histological aggressiveness in a significant portion of the population. Most patients were diagnosed at Stage II (57.1%) and Stage III (28.6%) while only 14.3% presented with Stage I disease, reflecting a tendency toward later-stage presentation in a significant proportion of the cohort, a common scenario in any South Asian population.[2] Sixty percent (n = 34/56) of tumors were hormone receptor positive, a percentage similar to OBS European cohorts, which showed ER + /PR + in 60-70% of cases.[13,17] Neoadjuvant chemotherapy was delivered to only 14.3% of patients, suggesting that most underwent up-front surgery. This may reflect a philosophy of surgery designed to produce negative margins through OBS, but not necessarily shrink tumors preoperatively, a practice reported in other established OBS centers as well.[12,16]

Preoperative imaging was crucial in preplanning: ultrasound revealed malignant features focally present in 98.2% of cases, and mammography reported high-suspicion BI-RADS categories (4b, 4c and 6) for 87.5% of the patients, indicating a high sensitivity of ultrasonography and mammography in detecting suspicious breast lesions in this cohort. These rates are comparable to those of other studies that proved the substantial mammographic agreement for suspicious casesin a South Asian population. The standardized preoperative radiological work-up, resulting in accurate surgical planning, probably explains the low reoperation incidence. The choice of OBS methods was dominated by volume displacement (67.9%) with rotation advancement flaps and therapeutic mastopexy being the most popular. One third of the reconstructive volume was replaced by using LICAP and LD flaps. This distribution is in line with the international literature, which assumes flap choice based on tumor-to-breast ratio and patient preference.[15,17] The average surgical time of 2.75 h was similar to what is seen across the world.[13] Margin positivity was encountered peroperatively, in frozen section analysis, in 7.1% of patients, and all were dealt with re-excision in the same operative setting without reoperation, an important reflection of oncologic adequacy. Research similar to that of Ren et al. and Dietz et al. has also claimed low rates of re-excision for OBS with intraoperative margin assessment.[16,18] The rate of complications in the first month was low at 16.1%, infections and seromas were the most frequent. Importantly, no reoperations were needed for management of complications. This is much less than the reported complication rate in studies of a similar nature.[13] This relatively low complication profile within the first postoperative month supports the feasibility and safety of oncoplastic techniques in the studied setting.

Journal of Brahmanbaria Medical College
Volume 08 Issue 01 January 2026 ; 9-14
DOI: https://doi.org/10.3329/jbrmc.v8i1.89093

Correlation analysis showed that tumor size was slightly positively correlated with operative time and specimen weight; however, age and BMI had little influence on the extent of the operation. These results are supported by the study of Bolliger et al, who showed that not patient factors but tumour size was principally driving surgical effort in OBS.[17] Patient satisfaction was primarily positive, with 64.3% reporting excellent outcomes and 25% good results. Notably, no patients (0%) reported a "Poor" outcome. Similar levels of satisfaction have been reported by Lisboa et al. in a meta-review, and by Blok et al,who reported aesthetic satisfaction scores of over 80% in OBS populations.[13,15] Oncological results were also promising, 0% local or distant recurrences and a 100% survival rate at a mean follow-up of 18 months. Although definitive conclusions require long-term follow-up, the early outcomes presented here are consistent with the existing literature showing that OBS does not negatively affect cancer eradication.[14,16] Overall results in this study indicate that OBS is a viable and effective strategy, even in limited-resource areas. This combined oncologic and aesthetic approach to treatment was not achieved at the expense of patient safety or oncological control, but with high levels of patient satisfaction. Further multicenter, longer follow-up studies are required to confirm these results in a wider South Asian setting.

LIMITATIONS

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSION

This study highlights the promise of OBS in resource-poor settings,with satisfactory oncologic and aesthetic results, low complication rate, and high satisfaction of patients. These outcome favour the incorporation of the oncoplastic approach into routine breast cancer surgery practice in LMICs, provided attention is paid to training, infrastructure building and long-term outcome monitoring. Efforts in generating data from regional centers should be sustained to enhance accessibility, eliminate disparities, and develop evidence-based OBS practices that are specific to a region's population.

DISCLOSURE

All the authors declared no competing interest.

REFERENCES

1. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. CA: A Cancer Journal for Clinicians. 2021;71(3):209–249.

2. Amin MN, Uddin MdG, Uddin MdN, Rahaman MdZ, Siddiqui SA, Hossain MdS et al. A hospital based survey to evaluate knowledge, awareness and perceived barriers regarding breast cancer screening among females in Bangladesh. Heliyon. 2020;6(4):e03753.

3. Hamid F, Roy T. Unveiling Sociocultural Barriers to Breast Cancer Awareness Among the South Asian Population: Case Study of Bangladesh and West Bengal, India. JMIR Human Factors. 2025;12(1):e53969.

4. Kaviani A, Sodagari N, Sheikhbahaei S, Eslami V, Hafezi-Nejad N, Safavi A et al. From radical mastectomy to breast-conserving therapy and oncoplastic breast surgery: A narrative review comparing oncological result, cosmetic outcome, quality of life, and health economy. ISRN Oncol. 2013 Sep 12;2013:742462.

5. Fisher B, Anderson S, Bryant J, Margolese RG, Deutsch M, Fisher ER et al. Twenty-year follow-up of a randomized trial comparing total mastectomy, lumpectomy and lumpectomy plus irradiation for the treatment of invasive breast cancer. N Engl J Med. 2002 Oct 17;347(16):1233–1241.

6. Early Breast Cancer Trialists' Collaborative Group (EBCTCG) Darby S, McGale P, Correa C, Taylor C, Arriagada R et al. Effect of radiotherapy after breast-conserving surgery on 10-year recurrence and 15-year breast cancer death: Meta-analysis of individual patient data for 10,801 women in 17 randomised trials. Lancet. 2011 Nov 12;378(9804):1707–1716.

7. Karadeniz Cakmak G. Innovative Standards in Oncoplastic Breast Conserving Surgery: From Radical Mastectomy to Extreme Oncoplasty. Breast Care (Basel). 2021;16(6):559–573.

8. Bertozzi N, Pesce M, Santi PL, Raposio E. Oncoplastic breast surgery: Comprehensive review. Eur Rev Med Pharmacol Sci. 2017;21(11):2572–2585.

9. Torras I, Cebrecos I, Castillo H, Mension E. Evolution of breast conserving surgery-current implementation of oncoplastic techniques in breast conserving surgery: A literature review. Gland Surg. 2024;13(3):412–425.

10. National Comprehensive Cancer Network Foundation. NCCN. 2025. https://www.nccn.org/guidelines/guidelines-detail?category=1&id=1419.

11. Loibl S, André F, Bachelot T, Barrios CH, Bergh J, Burstein HJ et al. Early breast cancer: ESMO Clinical Practice Guideline for diagnosis, treatment and follow-up. Ann Oncol. 2024;35(2):159–182.

Journal of Brahmanbaria Medical College
Volume 08 Issue 01 January 2026 ; 9-14
DOI: https://doi.org/10.3329/jbrmc.v8i1.89093

12. Mazumdar A, Jain S, Jain S, Bose SM. Management of Early Breast Cancer – Surgical Aspects. In: Sharma SC, Mazumdar A, Kaushik R, editors. Breast Cancer: Comprehensive Management [Internet]. Singapore: Springer Nature. 2022. p. 243–297.

13. Blok YL, Verduijn PS, Corion LUM, Visser JM, van der Pol CC, van der Hage JA et al. An analysis of complication rates and the influence on patient satisfaction and cosmetic outcomes following oncoplastic breast surgery. Journal of Plastic, Reconstructive & Aesthetic Surgery [Internet]. 2022;75(11):4152–4159.

14. Ritter M, Ling BM, Oberhauser I, Montagna G, Zehnpfennig L, Lévy J et al. The impact of age on patient-reported outcomes after oncoplastic versus conventional breast cancer surgery. Breast Cancer Res Treat [Internet]. 2021;187(2):437–446.

15. Lisboa FCAP, Giorgi LPCV, Figueiredo ACMG, Paulinelli RR, de Sousa JB. Comparative analysis of the degree of patient satisfaction after breast-conserving surgery with or without oncoplastic surgery: Systematic review and meta-analysis. Front Surg [Internet]. 2024;11.

16. Ren J, Wang Y, Zhang X, Cheng Q, Wang K, Liu Q et al. A Clinical Analysis of Prognosis and Patient-Reported Outcomes of Oncoplastic Breast-Conserving Surgery for Early Breast Cancer: A Retrospective Cohort Study. Aesth Plast Surg [Internet]. 2024;48(16):3109–3119.

17. Bolliger M, Gambone L, Haeusler T, Mikula F, Kampf S, Fitzal F. Patient Satisfaction, Esthetic Outcome and Quality of Life in Oncoplastic and Reconstructive Breast Surgery: A Single Center Experience. Breast Care [Internet]. 2024;19(4):215–222.

18. Dietz J, Lundgren P, Veeramani A, O'Rourke C, Bernard S, Djohan R et al. Autologous Inferior Dermal Sling (Autoderm) with Concomitant Skin-Envelope Reduction Mastectomy: An Excellent Surgical Choice for Women with Macromastia and Clinically Significant Ptosis. Ann Surg Oncol [Internet]. 2012;19(10):3282–3288.