Journal of Teachers Association
https://tajrmc.com/taj
Vol. 38, No. 2, 2025

pISSN 1019-8555
eISSN 2408-8854

RESEARCH ARTICLE | OPEN ACCESS **DOI:** https://doi.org/10.70818/taj.v38i02.0305

Early Postoperative Outcomes in Lumpectomy and Simple Mastectomy in Patients with Early-Stage Carcinoma of the Breast

Sadia Rasul Prianka*[1], Saif Uddin Ahmed[1], Easir Arafat[2], Sarwer Jamal Biplob[3], Sakeef Rahman[4]

1 Department of Surgical Oncology, Bangabandhu Sheikh Mujib Medical University, Dhaka
2 Department of General Surgery, Bangabandhu Sheikh Mujib Medical University, Dhaka
3 Department of Oral & Maxillofacial Surgery, Bangabandhu Sheikh Mujib Medical University, Dhaka
4 Department of Surgery, Sir Salimullah Medical College Mitford Hospital, Dhaka

Citation:
Prianka SR, Ahmed SU, Arafat E, Biplob SJ, Rahman S; Early Postoperative Outcomes in Lumpectomy and Simple Mastectomy in Patients with Early-Stage Carcinoma of the Breast. Journal of Teachers Association. 2025;38(2): 239-247

Article History:
Received: 03.02.2025
Accepted: 18.04.2025
Published: 01.06.2025

ABSTRACT: ***Background:*** In recent years, the incidence of breast cancer has been rising in our country. Therefore, a clear knowledge of the surgical options for breast cancer is very important. Early diagnosis and effective treatment can reduce the risk of adverse consequences including death. This study aimed to compare early postoperative outcomes in lumpectomy and simple mastectomy in patients with early-stage carcinoma of the breast. ***Methods:*** This observational study was conducted in the Department of General Surgery at Bangabandhu Sheikh Mujib Medical University (BSMMU) from July 2022 to June 2023. Female patients with early-stage breast carcinoma who met the eligibility criteria and underwent either simple mastectomy or lumpectomy were included. A total of 50 cases were selected using a convenient sampling technique and divided into two groups: Group A (lumpectomy) and Group B (simple mastectomy). Data was analyzed statistically by using the Statistical Package for Social Scientists (SPSS-26). ***Result:*** This study found that tumor characteristics, receptor status, and most postoperative complications were similar between lumpectomy (Group A) and simple mastectomy (Group B), except for a significantly higher incidence of flap necrosis in Group B (20%, p=0.018). Additionally, while baseline quality of life (QOL) scores was comparable, patients who underwent lumpectomy showed significantly better physical functioning at 4-6 weeks postoperatively (62.15±20.41 vs. 54.56±22.04, p=0.039), indicating a potential functional advantage of lumpectomy over simple mastectomy in the early recovery period. ***Conclusion:*** It can be concluded that breast conservative surgery or lumpectomy in early-stage breast cancer has fewer early postoperative complications than simple mastectomy.

Keywords: Lumpectomy, Simple Mastectomy, Carcinoma Breast, Receptor Status.

Article at a glance:

Study Purpose*: The purpose of this study is to compare the early postoperative outcomes of lumpectomy (breast-conserving surgery, BCS) and simple mastectomy in patients with early-stage breast carcinoma.*
Key findings: *Early postoperative outcomes in lumpectomy and simple mastectomy for patients with early-stage breast carcinoma.*
Newer findings: *Early postoperative outcomes for patients with early-stage breast carcinoma undergoing lumpectomy (breast-conserving surgery, BCS) versus simple mastectomy (SM).*
Abbreviations: *BCS: Breast Conservation Surgery.*

INRODUCTION

Breast cancer is the most commonly diagnosed cancer worldwide and is the leading cause of cancer mortality among females. Early diagnosis and effective treatment can reduce the risk of consequences including death.[1] The modern approach to breast cancer management is a multidisciplinary approach involving appropriate surgery, radiotherapy, and systematic adjuvant therapy.[2] The cornerstone of breast cancer management is surgical procedures. Of them, simple mastectomy is the most common surgery for breast cancer management.[3] Alternatively, lumpectomy or Breast conservation surgery (BCS) is also an accepted surgical procedure for early-stage breast cancer which has similar efficacy and effectiveness of treatment over simple

mastectomy in terms of overall survival.[4] Decision-making between treatment options can change according to patient preferences.[5] Concerns about cancer recurrence, the belief that overall health is more important than breast preservation or the potential consequences of breast-conserving surgery (BCS), and the possible adverse effects of radiation therapy are key factors that may lead to the preference for simple mastectomy. Additionally, women from disadvantaged backgrounds were significantly less likely to undergo BCS compared to those from more privileged backgrounds.[6, 7] The common complications include wound infection, seroma, hematoma, and skin flap necrosis within 30 postoperative days of breast surgery.[8] Of them, the most frequent complication is wound infection. A study compared the frequency of infection and found higher infection among simple mastectomy (4.34%) than lumpectomy patients (1.97%).[9] Along with wound infection, seroma formation is also a significant complication followed by breast surgery. Bokhari *et al*., reported that seroma was the most common complication of breast surgery.[10] A study found around 3% of seromas after simple mastectomy.[11] Rahman *et al*., performed a study and informed that seroma was present among 18.75% and 54% of patients who underwent lumpectomy (BCS) and simple mastectomy (MRM) respectively.[1] Epidermolysis or flap necrosis is another troublesome complication following breast surgery which is mostly observed after simple mastectomy.

A study found 6% to 18% flap necrosis in mastectomy whereas 0% in lumpectomy.[10] Haematoma is also a common complication of simple mastectomy. Though widespread use of electrocautery significantly reduces the incidence of hematoma formation this complication continues to occur in 2% to 10% of simple mastectomy cases.[12] Subsequently, early arm edema is said to occur in about half of the patients after axillary dissection. The majority of patients undergo some degree of oedema particularly due to lack of awareness. Studies showed a certain percentage of lymphedema (28% and 27.8%) following breast surgery.[13] Numerous stress factors such as mutilations of the body image, side effects of adjuvant therapies, anxiety about the primary disease, and fear of death affect the quality of life in breast cancer patients.[14] Quality of life analysis was essential before and after treatment. This evaluation consists of the social, physical, functional, and psychological status of health interpreted by the patient.[14] In Bangladesh, breast cancer is the most common cancer among women. Like other countries, breast cancer patients are being managed mainly by simple mastectomy in Bangladesh. However, recently lumpectomy (BCS) has become popular as an effective surgical procedure for the management of breast cancer particularly due to lower risk of complications and early recovery.[1] Patients need to comprehend how BCS compares to a simple mastectomy, not only from a long-term recurrence and mortality standpoint but also in the early postoperative period complications.[15] This study aimed to assess early postoperative outcomes in lumpectomy and simple mastectomy in patients with early-stage carcinoma of the breast.

METHODS

This observational study was conducted at the Department of General Surgery of Bangabandhu Sheikh Mujib Medical University (BSMMU), from July 2022 to June 2023. Female patients of early-stage carcinoma of the breast admitted in the indoor unit under the Department of General Surgery, BSMMU who underwent simple mastectomy or lumpectomy and fulfilled the eligibility criteria of this study were considered as the study population. A total of 50 cases were included as study subjects by Convenient sampling technique. Patients were divided into 2 groups. Group A: Patients underwent lumpectomy for carcinoma breast, Group B: Patients underwent simple mastectomy for carcinoma breast. Preoperative diagnosis of breast carcinoma was confirmed through percutaneous core biopsy, with staging based on TNM and Manchester classifications (Stage 1 and 2). Patients underwent imaging assessments, including chest X-ray/CT, abdominal USG/CT, bone scan, mammography, and breast MRI. Eligible cases for breast-conserving surgery (lumpectomy) with axillary evaluation or simple mastectomy, including those requiring neoadjuvant therapy for triple-negative carcinoma, were selected per study criteria. Informed consent was obtained after detailed counseling. Data collection involved a semi-structured questionnaire, with interviews conducted at admission (B1) and at 4-6 weeks post-surgery (B2) to assess recovery and changes in quality of life (QoL) using QLQ-C30. All the data were compiled and sorted properly and the numerical data was analyzed statistically by using Statistical Package for Social Scientists (SPSS-26) (IBM Corporation,

Armonk, NY). Quantitative data were expressed as mean, and standard deviation, and qualitative data were expressed as frequency and percentage. Chi-Square test and independent sample t-test were performed as applicable. A 95% confidence interval (CI) was calculated and p-value <0.05 was considered as the level of significance.

Inclusion Criteria

Female patient with histologically proven early carcinoma of the breast.

Patients must be 18 to 72 years old

Exclusion Criteria

Patients with recurrent breast cancer

Inflammatory carcinoma breast

Pregnancy-associated carcinoma breast (first trimester)

Patient with distant metastatic disease

Concomitant or previous ipsilateral or contralateral breast cancer

Locally Advanced Breast cancer (LABC)

Male breast cancer

RESULTS

Table 1: Distribution of Study Subjects According to Age (N=50)

Age (years)	Group A (n=25)	Group B (n=25)	p-value
<40	1 (5%)	2 (8%)	
40-49	4 (16%)	5 (20%)	
50-59	7 (28%)	8 (32%)	0.898^{ns}
60-69	8 (32%)	7 (28%)	
>70	5 (20%)	3 (12%)	
Mean±SD	59.92±10.33	56.80±11.41	

Data was expressed as frequency, percentage, and mean±SD. P-value was obtained from the Chi-Square test. Group A= Lumpectomy, Group B= Simple mastectomy. In this study, the mean±SD age was 59.92±10.33 years in group A and 56.80±11.41 years in group B. The majority of the study subjects were in the age group of 60-69 years in group A (8; 32%) and 50-59 years in group (8; 32%). No significant (p=0.898) age difference was observed between the groups. [Table 1]

Table 2: Distribution of Patients According to the Demographic Characteristics of the Study Population (N=50)

Variables	Group A (n=25)	Group B (n=25)	p-value
Residence			0.758
Urban	18 (72%)	17 (68%)	
Rural	7 (28%)	8 (32%)	
Education Level			0.501
Higher secondary and above	2 (8%)	4 (16%)	
Secondary	5 (20%)	6 (24%)	
Primary	12 (48%)	7 (28%)	
Illiterate	6 (24%)	8 (32%)	
Occupation			0.501
Service	12 (48%)	7 (28%)	
Housewife	6 (24%)	8 (32%)	
Business	5 (20%)	6 (24%)	
Other	2 (8%)	4 (16%)	
Smoking Status			0.713
Smoker	4 (16%)	5 (20%)	
Non-smoker	21 (84%)	20 (80%)	
Positive Family History	17 (68%)	18 (72%)	0.758
Marital Status			0.551
Married	24 (96%)	23 (92%)	
Unmarried	1 (4%)	2 (8%)	

The majority of participants in both groups were from urban areas (72% in Group A and 68% in Group B, p=0.758). Education levels were comparable, with no significant difference between groups (p=0.501). Occupation patterns also showed no statistical significance (p=0.501), with service being the most common occupation in Group A (48%) and housewives being more prevalent in Group B (32%). Smoking status was similar between groups (p=0.713), with 16% of Group A and 20% of Group B identified as smokers. Family history was present in 68% of Group A and 72% of Group B (p=0.758). Marital status was also comparable, with 96% of Group A and 92% of Group B being married (p=0.551). [Table 2]

Table 3: Distribution of the Study Subjects According to Tumor Characteristics (N=50)

Variable	Group A (n=25)	Group B (n=25)	p-value
Tumor size			
pT1	19 (76%)	17 (68%)	0.733^{ns}
pT2	6 (24%)	8 (32%)	
Nodule status			
pN0	20 (80%)	17 (68%)	0.333^{ns}
pN + (1 to 3 LN)	5 (20%)	8 (32%)	
Histological type			
Ductal	16 (64%)	14 (56%)	0.670^{ns}
Lobular	2 (8%)	4 (16%)	
Special	7 (28%)	7 (28%)	
Histological grade			
I	13 (52%)	13 (52%)	0.920^{ns}
II	6 (24%)	5 (20%)	
Not specified	6 (24%)	7 (28%)	
Multicentricity			
Yes	6 (24%)	5 (20%)	0.733^{ns}
No	19 (76%)	20 (80%)	
Lymph vascular invasion			
Yes	8 (32%)	7 (28%)	0.758^{ns}
No	17 (68%)	18 (72%)	

Data were expressed as frequency and percentage. P-value was obtained from the Chi-Square test. Group A= Lumpectomy, Group B= Simple mastectomy. The majority of the study subjects had tumor size was pT1 (76%; 68%), nodular status was pN0 (80%; 68%), histologically ductal (64%; 56%) involvement was more and tumor grade was I (52%; 52%), multicentricity was present in only 24% and 20% in both groups respectively. Lymph vascular invasion was 32% in group A and 28% in group B. Tumor characteristics were similar (p>0.05) in both groups. [Table 3]

Table 4: Distribution of the Study Subjects According to Receptor Status (N=50)

Parameters	Group A (n=25)	Group B (n=25)	p-value
Estrogen receptor status			
Positive	23 (92%)	22 (88%)	0.637 ^{ns}
Negative	2 (8%)	3 (12%)	
HER 2 status			
Positive	22 (88%)	24 (96%)	0.297 ^{ns}
Negative	3 (12%)	1 (4%)	

Data were expressed as frequency and percentage. P-value was obtained from the Chi-Square test. Group A= Lumpectomy, Group B= Simple mastectomy. Estrogen receptor was present in 92% and 88% of the patients and HER 2 was present in 88% and 96% of the patients in both groups respectively. No significant (p>0.05) difference was observed between the groups. [Table 4]

Table 5: Distribution of the Study Subjects According to Post-Operative Complication (N=50)

Complications	Group A (n=25)	Group B (n=25)	p-value
Seroma formation			
Yes	4 (16%)	6 (24%)	0.479[ns]
No	21 (84%)	19 (76%)	
Wound infection			
Yes	1 (4%)	2 (8%)	0.551[ns]
No	24 (96%)	23 (92%)	
Wound dehiscence			
Yes	1 (4%)	2 (8%)	0.551[ns]
No	24 (96%)	23 (92%)	
Hematoma formation			
Yes	1 (4%)	3 (12%)	0.297[ns]
No	24 (96%)	22 (88%)	
Flap Necrosis			
Yes	0 (0%)	5 (20%)	0.018[s]
No	25 (100%)	20 (80%)	

Data were expressed as frequency and percentage. P-value was obtained from the Chi-Square test. Group A= Lumpectomy, Group B= Simple mastectomy. Among the study subjects, only 4 (16%) and 6 (24%) cases developed seroma, 1 (4%) and 2 (8%) cases developed wound infection and 1 (4%), 2 (8%) cases developed wound dehiscence and 1 (4%) and 3(12%) cases developed hematoma. They were managed accordingly. There was no flap necrosis in group A and 5 (20%) patients had flap necrosis in group B. [Table 5]

Table 6: Functional Assessment of Quality of Life By QLQ-C30 (N=50)

Variable	Group A (n=25)	Group B (n=25)	p-value
Baseline			
Physical functioning	83.55±16.23	81.14±17.60	0.409[ns]
Role functioning	88.44±19.23	82.46±21.92	0.094[ns]
Emotional functioning	76.61±22.88	76.86±23.59	0.950[ns]
Cognitive functioning	86.56±21.94	87.72±15.96	0.720[ns]
Social functioning	84.14±25.33	83.95±18.30	0.497[ns]
At 4-6 weeks			
Physical functioning	62.15±20.41	54.56±22.04	0.039[s]
Role functioning	64.52±20.58	61.18±20.80	0.349[ns]
Emotional functioning	57.93±16.76	58.92±20.23	0.759[ns]
Cognitive functioning	80.11±18.81	76.97±20.18	0.351[ns]
Social functioning	41.67±20.85	40.57±25.87	0.788[ns]

Data were expressed as mean±SD. The P-value was obtained from an independent sample t-test. Group A= Lumpectomy, Group B= Simple mastectomy. Our study revealed that patients who underwent lumpectomy have a better QOL concerning various functional scales at 4-6 weeks after surgery. Among them, physical function (62.15±20.41 Vs 54.56+±22.04) was significantly (p=0.039) improved in group A and then group B. [Table 6]

DISCUSSION

In the present study, the mean±SD age of breast cancer patients was 59.92±10.33 years and 56.80±11.41 years in both lumpectomy and simple mastectomy groups. The majority of the patients were in the age group of 60-69 years in the lumpectomy group (8; 32%) and 50-59 years in the simple mastectomy group (8; 32%). No significant difference was observed in age of both groups. A case-control study was carried out by Advani *et al.*, stated that increased risk of invasive breast cancer among women

aged 65 years or older.[16] In the current study, 32% and 24% were illiterate, 28% and 48% were primarily educated, 24% and 20% were secondarily educated, and 16% and 8% were educated as higher secondary and above. A prospective cohort study was conducted by Jiang *et al.*, in China and informed that an increased risk of breast cancer was associated with a higher level of education.[17] In a contemporary study, 48% and 28% of respondents were service holders, 24% and 32% were housewives, 20% and 24% were businessmen, and 8% and 16% were in other professions in both groups. A high risk was observed by Sari *et al.*, in office workers and women with a sitting position during work.[18] In this study, 68% and 72% of patients had a positive family history. Familial cases represented 18.4% of breast cancer patients found by Tazzite *et al*..[19] Jiang *et al*., conducted a study and found that 2.2% of women had no first-degree female relatives with breast cancer, 71.3% had exactly one first-degree female relative (sister or mother) with breast cancer, and 10,023 (26.6%) had at least two first degree female relatives with breast cancer.[17] The majority of the respondents were married and only 4% and 8% were found unmarried. Li *et al*., performed a study at the University of Texas and decided that marital status may correlate with the risk of developing female breast cancer.[20] In present study, tumor size was pT1 in 76% and 68% and pT2 in 24% and 32%, nodular status was pN0 in 80% and 68% and pN + (1 to 3 LN) in 20% and 32%, histologically ductal involvement was 64% and 56%, lobular involvement was 8% and 16% and 28% and 28% patients were found as special during histological assessment in both groups respectively. Tumor grade was I in 52% and 52%, grade II in 24% and 20% of cases, and not specified in 24% and 28%. The findings were similar in both groups that is our study population in both groups is comparable.

Almost similar findings were found by various researchers of different countries.[21, 22] Estrogen receptor was positive in 92% and 88% and negative in 8% and 12% of the patients; HER 2 was positive in 88% and 96% and negative in 12% and 4% of the patients in both groups respectively. No significant (p>0.05) difference was observed between the groups. A parallel study was done by Corradini *et al*., and observed that 90.2% and 88% of patients had hormone receptors positive.[21] About 44% and 56% of respondents received neoadjuvant chemotherapy (NACT) during the study in both groups respectively. Lorentzen *et al.*, decided that NACT was not associated with an increased complication rate nor surgical duration.[23] Landercasper *et al*., observed that NAC was associated with high rate of mortality and morbidity in lumpectomy patients.[24] In existing study, only 16% and 24% cases developed seroma, 4% and 8% case developed wound infection and 4% and 8% cases developed wound dehiscence and 4% and 12% cases developed hematoma. A retrospective analysis was performed by Chatterjee *et al*., and observed that simple mastectomy requires more extensive dissection, skin flap undermining and damage to perfusion in comparison with a BCS, so an increase in wound complications, infection and bleeding can be experienced.[25] During base line follow-up, Physical functioning score was 83.55±16.23 and 81.14±17.60, Role functioning score was 88.44±19.23 and 82.46±21.92, emotional functioning score was 76.61±22.88 and 76.86±23.59, cognitive functioning score was 86.56±21.94and 87.72±15.96 and social functioning score was 84.14±25.33 and 83.95±18.30 in both groups. At 4-6 weeks after surgery, physical functioning score was 62.15±20.41and 54.56±22.04, role functioning score was 64.52±20.58 and 61.18±20.80, emotional functioning score was 57.93±16.76 and 58.92±20.23, cognitive functioning score was 80.11±18.81and 76.97±20.18 and social functioning score was 41.67±20.85 and 40.57±25.87 in both groups. Our study revealed that patients underwent lumpectomy have a better QOL with respect to various functional scales at 4-6 weeks after surgery. Among them physical function was significantly (p=0.039) improved after lumpectomy then simple mastectomy. Cherian *et al*., performed a study in India to assess and compare Quality of Life after Breast Conservation Surgery versus Modified Radical Mastectomy.[26-41] They found similar observation.

Limitations of The Study

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

CONCLUSION

It can be concluded that breast conservative surgery or lumpectomy in early-stage breast cancer has fewer early postoperative complications than simple mastectomy. The rate of development of seroma formation, flap necrosis, wound infection, and

dehiscence was lower in breast conservative surgery than in simple mastectomy. The patients who underwent lumpectomy have a better quality of life concerning various functional scales than simple mastectomy. So early diagnosis of breast cancer at an early stage can be treated by breast-conserving surgery to reduce the immediate postoperative complications.

Recommendation

Based on our findings, lumpectomy may offer a functional advantage over simple mastectomy in the early postoperative period, particularly in preserving physical functioning. Additionally, the higher incidence of flap necrosis in the mastectomy group highlights the need for careful surgical planning and postoperative care. Future studies with larger sample sizes and longer follow-ups are recommended to further evaluate long-term functional outcomes and complication rates between these surgical approaches.

Authors' Contributions: SR, SJB: Concept and design, data acquisition, interpretation and drafting. MYA, MSR and SUA: Data acquisition, interpretation, drafting, final approval and agree to be accountable for all aspects of the work.

Funding: No funding sources.
Conflict of Interest: None declared.

REFERENCES

1. Rahman MA, Arjuman F, Alam S, Khalil MI, Habibullah Q, Al Hasan KAA, et al. Lumpectomy Versus Mastectomy in Breast Cancer: Comparison of Postoperative Consequences and Treatment Progress.
2. Spilsbury K, Semmens JB, Saunders CM, Holman CDJ. Long-term survival outcomes following breast cancer surgery in Western Australia. ANZ Journal of Surgery. 2005 Aug;75(8):625–30.
3. Czajka ML, Pfeifer C. Breast cancer surgery. In: StatPearls. StatPearls Publishing; 2023
4. 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):1233–41.
5. Gu J, Groot G, Holtslander L, Engler-Stringer R. Understanding Women's Choice of Mastectomy Versus Breast Conserving Therapy in Early-Stage Breast Cancer. Clin Med Insights Oncol. 2017 Jan 1;11:1179554917691266.
6. Shaverdian N, Wang X, Hegde JV, Aledia C, Weidhaas JB, Steinberg ML, et al. The patient's perspective on breast radiotherapy: Initial fears and expectations versus reality. Cancer. 2018 Apr 15;124(8):1673–81.
7. Lee WQ, Tan VKM, Choo HMC, Ong J, Krishnapriya R, Khong S, et al. Factors influencing patient decision-making between simple mastectomy and surgical alternatives. BJS open. 2019;3(1):31–7.
8. Sørensen LT, Hørby J, Friis E, Pilsgaard B, Jørgensen T. Smoking as a risk factor for wound healing and infection in breast cancer surgery. European Journal of Surgical Oncology (EJSO). 2002;28(8):815–20.
9. El-Tamer MB, Ward BM, Schifftner T, Neumayer L, Khuri S, Henderson W. Morbidity and mortality following breast cancer surgery in women: national benchmarks for standards of care. Annals of surgery. 2007;245(5):665–71.
10. Bokhari I, Mehmood Z, Nazeer M, Khan A. Early complications of mastectomy with axillary clearance in patients with stage II and III carcinoma breast. Journal of Surgery Pakistan (International). 2010;15(4):182.
11. Srivastava V, Basu S, Shukla VK. Seroma formation after breast cancer surgery: what we have learned in the last two decades. Journal of breast cancer. 2012;15(4):373–80.
12. Vitug AF, Newman LA. Complications in breast surgery. Surgical Clinics of North America. 2007;87(2):431–51.
13. Ozaslan C, Kuru B. Lymphedema after treatment of breast cancer. The American Journal of Surgery. 2004;187(1):69–72.
14. Zanapalıoğlu Y, Atahan K, Gür S, Çökmez A, Tarcan E. EFFECT OF BREAST CONSERVING SURGERY IN QUALITY OF LIFE IN BREAST CANCER PATIENTS. Meme Sagligi Dergisi/Journal of Breast Health. 2009
15. Pyfer B, Chatterjee A, Chen L, Nigriny J, Czerniecki B, Tchou J, et al. Early Postoperative Outcomes in Breast Conservation Surgery Versus Simple Mastectomy with Implant Reconstruction: A NSQIP Analysis of 11,645 Patients. Ann Surg Oncol. 2016 Jan;23(1):92–8.
16. Advani SM, Zhu W, Demb J, Sprague BL, Onega T, Henderson LM, et al. Association of breast

density with breast cancer risk among women aged 65 years or older by age group and body mass index. JAMA network open. 2021;4(8):e2122810–e2122810.
17. Jiang R, Wang X, Sun Z, Wu S, Chen S, Cai H. Association of education level with the risk of female breast cancer: a prospective cohort study. BMC Women's Health. 2023 Mar 7;23(1):91.
18. Sari GN, Eshak ES, Shirai K, Fujino Y, Tamakoshi A, Iso H. Association of job category and occupational activity with breast cancer incidence in Japanese female workers: the JACC study. BMC Public Health. 2020 Dec;20(1):1106.
19. Tazzite A, Jouhadi H, Saiss K, Benider A, Nadifi S. Relationship between family history of breast cancer and clinicopathological features in Moroccan patients. Ethiopian journal of health sciences. 2013;23(2):150–7.
20. Li M, Han M, Chen Z, Tang Y, Ma J, Zhang Z, et al. Does marital status correlate with the female breast cancer risk? A systematic review and meta-analysis of observational studies. PLoS One. 2020;15(3):e0229899.
21. Corradini S, Reitz D, Pazos M, Schönecker S, Braun M, Harbeck N, et al. Mastectomy or breast-conserving therapy for early breast cancer in real-life clinical practice: outcome comparison of 7565 cases. Cancers. 2019;11(2):160.
22. Onthong K, Chakkabat C, Nantavithya C, Shotelersuk K, Denariyakoon S, Vongsaisuwon M, et al. Results of intraoperative radiotherapy given as a boost after breast conserving-surgery. Gland Surgery. 2020;9(5):1389.
23. Lorentzen T, Heidemann LN, Moeller S, Bille C. Impact of neoadjuvant chemotherapy on surgical complications in breast cancer: A systematic review and meta-analysis. European Journal of Surgical Oncology. 2022;48(1):44–52.
24. Landercasper J, Bennie B, Bray MS, Vang CA, Linebarger JH. Does neoadjuvant chemotherapy affect morbidity, mortality, reoperations, or readmissions in patients undergoing lumpectomy or mastectomy for breast cancer? Gland Surgery. 2017;6(1):14.
25. Chatterjee A, Pyfer B, Czerniecki B, Rosenkranz K, Tchou J, Fisher C. Early postoperative outcomes in lumpectomy versus simple mastectomy. journal of Surgical Research. 2015;198(1):143–8.
26. Shahid SM, Ali MN, Lina KS, Paul SR, Islam SS, Lisa T. Pediatric Laparoscopic Inguinal Hernia Repair: A Comparison between Techniques. TAJ: Journal of Teachers Association. 2020 Dec 31;33(2):20-6.
27. Hossain Z, Ali N, Shahid SM, Paul SR, Al Mamun A. Outcome of gastroschisis in Rajshahi Medical College Hospital: Searching for the way of improvement. TAJ: Journal of Teachers Association. 2024 Jun 30;37(1):192-200.
28. Shahid SM, Ali N, Islam SS, Lina KS. Management of Posterior Urethral Valves: An Outcome Analysis of Endoscopic Valve Fulguration. TAJ: Journal of Teachers Association. 2018;31(2):68-72.
29. Das D, Shahid SM, Paul SR, Hussain Z, Nure RH, Shuvo SS. Dorsal Mesenteric Agenesis without Small Bowel Atresia: A Rare Pediatric Case Insight. TAJ: Journal of Teachers Association. 2024 Dec 31;37(2):381-4.
30. Islam SS, Hassan P, Ali MN, Shahid SM, Badruddoza SM, Ahmed M. Undescended Testes in Children: Clinicopathological Study of 32 Cases. TAJ: Journal of Teachers Association. 2017;30(2):26-31.
31. Ali MN, Hannan MA, Shahid SM, Kubba T, Roy D. Ultrasound Guided Needle Aspiration of Breast Abscess as an Alternative to Surgical Incision and Drainage. TAJ: Journal of Teachers Association. 2020 Oct 18;33(1):1-4.
32. Nowshad A, Shahid SM, Islam SS, Mostaque A. Intussusception Secondary to Isolated Heterotopic Pancreas of Meckel's Diverticulum. TAJ: Journal of Teachers Association. 2011 Jun 30;24(1):16-20.
33. Shahid SM, Ali MN, Sarkar MH, Rahman MH. Ensuring authenticity in scientific communication: Approaches to detect and deter plagiarism. TAJ: Journal of Teachers Association. 2024 Jun 30;37(1):i-ii.
34. Alam KM, Shahid SM. PCR Test for SARS-CoV-2, Rajshahi Medical College Perspective. TAJ: Journal of Teachers Association. 2024 Dec 31;37(2):1-4.
35. Haque MA, Islam MI, Hasan H. Successful Surgical Creation and Management of an Arteriovenous Fistula: A Case Report. Asia Pacific Journal of Surgical Advances. 2024 Aug 31;1(1):34-8.
36. Paul SR, Ali MN, Shahid SA, Paul SC, Haque MN, Hossain MZ. Acute Sigmoid Volvulus: Outcome of Primary Resection & Anastomosis in a Tertiary Hospital. TAJ: Journal of Teachers Association. 2022;35(2):13-8.

37. Hasan H, Rahman MH, Haque MA, Rahman MS, Ali MS, Sultana S. Nutritional management in patients with chronic kidney disease: A focus on renal diet. Asia Pacific Journal of Medical Innovations. 2024 Aug 31;1(1):34-40.
38. Shahid SM, Ali MN, Paul SR, Hossain MZ, Al Mamun A. Demographic Profile and Outcome of Paediatric Solid Tumor Patients, in a Tertiary Level Hospital in Bangladesh. TAJ: Journal of Teachers Association. 2024 Jun 30;37(1):55-62.
39. Haque MA, Begum MM, Rahman MS, Hasan H. Complications of Arteriovenous Fistula Surgery: A Comprehensive Study in Bangladesh. TAJ: Journal of Teachers Association. 2024 Dec 31;37(2):87-97.
40. Haque A, Rahman S, Roshid M, Hasan H, Uddin N. Dietary Protein and Fluid Management in CKD Patients Undergoing Arteriovenous Fistula (AVF) Surgery: Investigating the Role of Nutrition on Reducing Fistula Failure. Pacific Journal of Medical Research. 2024 Dec 31;1(1):26-34.
41. Cherian K, Acharya NR, Bhargavan RV, Augustine P, Krishnan JKM. Quality of Life Post Breast Cancer Surgery: Comparison of Breast Conservation Surgery versus Modified Radical Mastectomy in a Developing Country. South Asian J Cancer. 2022 Jul;11(03):183–9.

***Correspondence:** Dr. Sadia Rasul Prianka, Email: sadia.r1010@gmail.com

Journal of Teachers Association
Official Journal of Teachers Association
Rajshahi Medical College