

Outcomes of oncoplastic breast surgery in Bangladesh

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Introduction

- For a century, mastectomy (Mx) was proven as effective therapy for breast cancer.

In early 1980s, it was being replaced

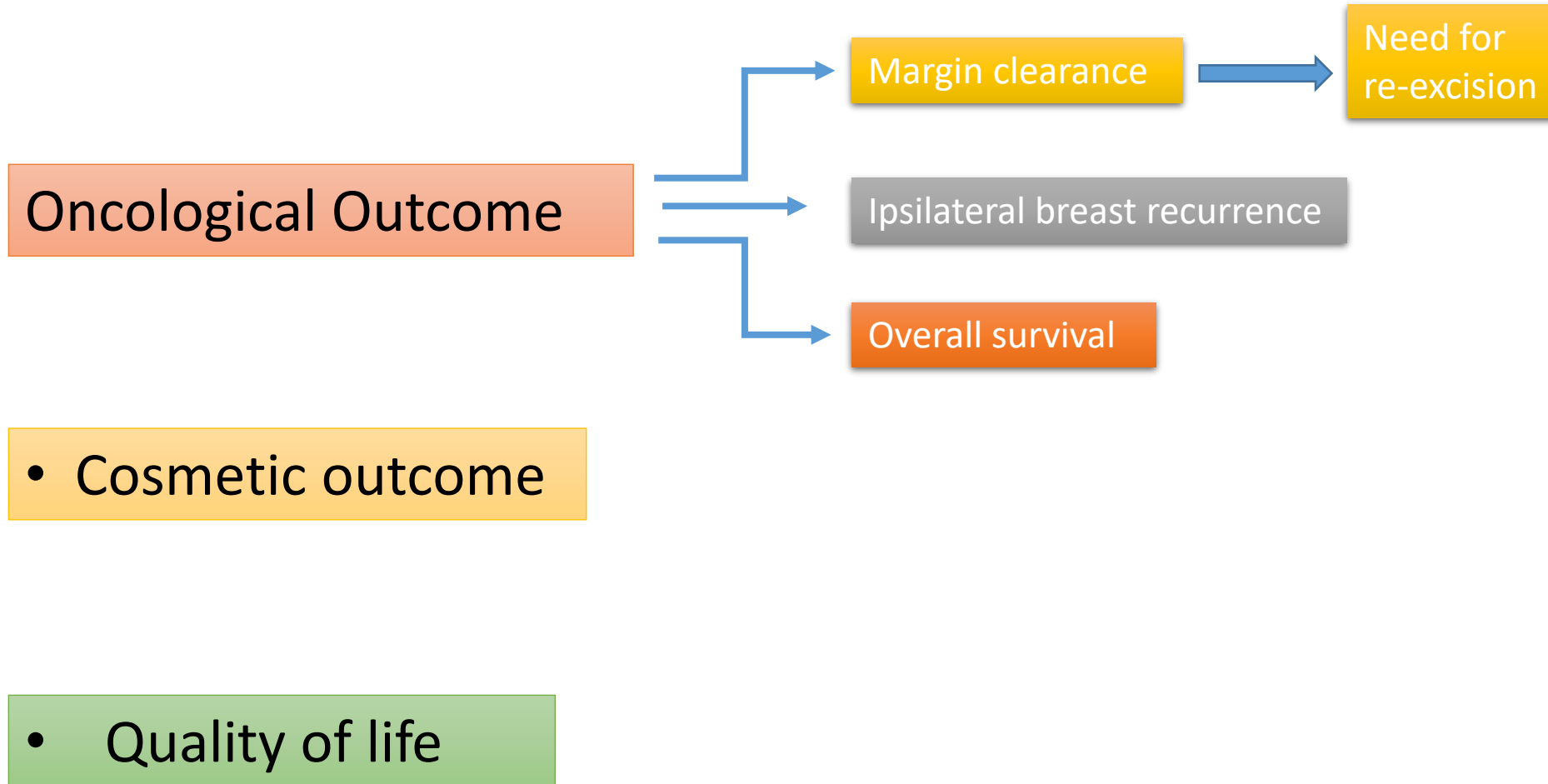


breast conservation therapy (BCT)

breast conserving surgery (BCS) and radiotherapy (RT)

similar disease free, distant disease free and overall 5-year survival

Issues to be considered



Very low local recurrence rates after breast-conserving therapy: analysis of 8485 patients treated over a 28-year period

S. C. J. Bosma¹  · F. van der Leij¹ · E. van Werkhoven² · H. Bartelink¹ ·
J. Wesseling³ · S. Linn^{4,5} · E. J. Rutgers⁶ · M. J. van de Vijver⁷ · P. H. M. Elkhuizen¹

- **8485** consecutive patients with early invasive breast cancer treated with BCT between 1980 and 2008 analyzed

80 % - had tumour free margin

8 % - with a more than focally tumor-positive resection margin.

The 5- and 10-year **Ipsilateral breast tumor recurrence (IBTR)** - 2 % , 5 %

Distant metastases - 11 % , 18 %

OS - 91 % , 77 %

Comparison of breast-conserving surgery with mastectomy in locally advanced breast cancer after good response to neoadjuvant chemotherapy

A PRISMA-compliant systematic review and meta-analysis

Yixuan Sun^a, Mingjuan Liao, MD, PhD^b, Liu He, MD^{c,*}, Chenfang Zhu, MD, PhD^{c,*}

16 studies
3531 patients

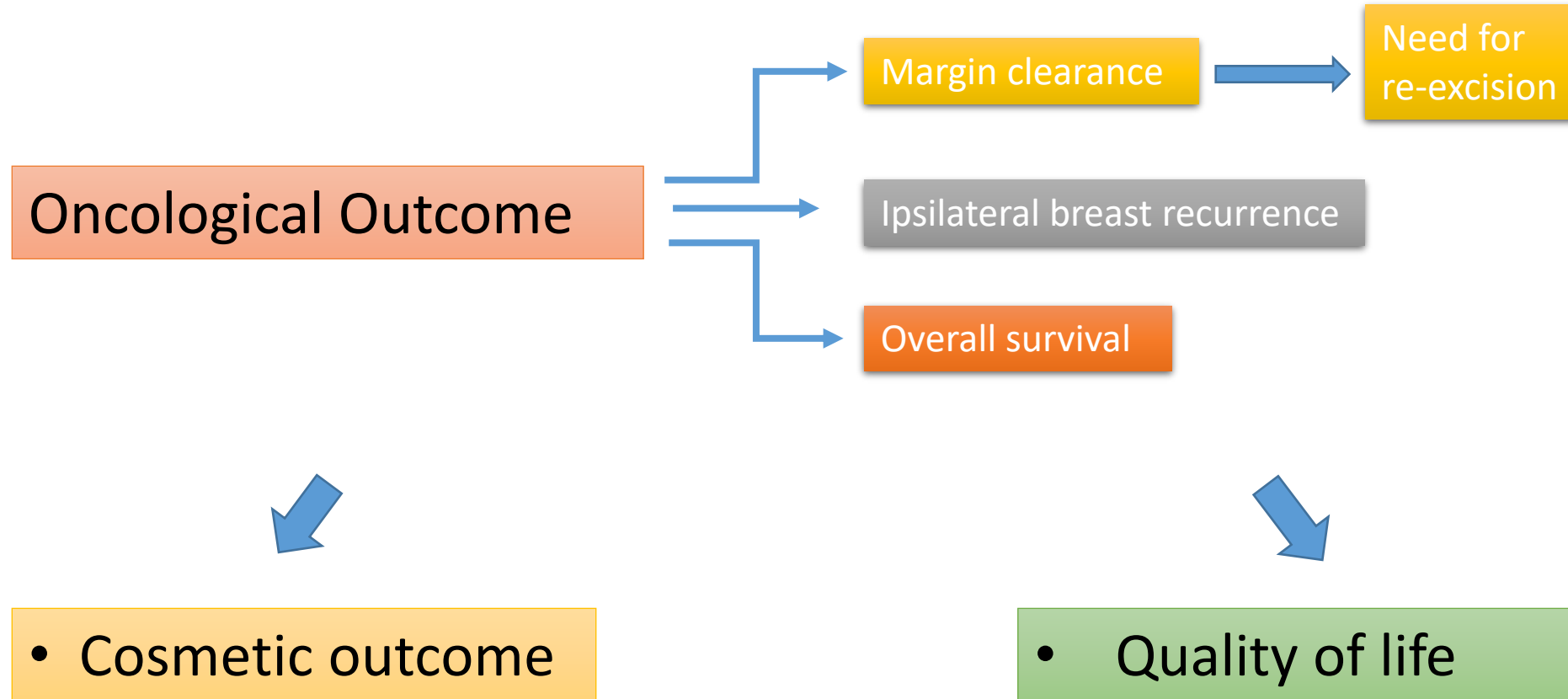
1465 patients underwent BCS

2066 patients underwent MT

- Patients with good response to NACT showed no significant difference in LR and DR
- A lower distant recurrence (OR=0.51; 95% CI: 0.42–0.63; P<.01), a higher DFS (OR=2.35; 95% CI: 1.84 to 3.01, P<.01) and a higher OS (OR=2.12; 95% CI: 1.51 to 2.98, P<.01) in BCS compared with MT.

BCS was a safe surgery for patients with LABC who had good response to NACT

Issues to be considered





clear risk of breast deformity when excision volume of breast tissue is more than 20%

Noguchi M et al. Oncoplastic breast conserving surgery: Volume replacement vs. volume displacement. Eur J Surg Oncol 2016;42(7):926–34

oncoplastic breast surgery

oncological clearance

plastic surgical technique

achieve wider excision margins without compromising the cosmetic outcomes

When

- stage 1 and 2 breast cancer.
- good response to neo adjuvant chemotherapy (NACT) locally advanced breast cancers (LABC) can be treated with OBS

Breast size in relationship to tumor size

Tumor size, location, and nodal status all play a role in decision making

What

Technique



volume displacement



volume replacement

Type



Level 1



Level 2

The choice of technique is dependent on a number of factors

- the extent of resection
 - position of the tumour
 - timing of surgery
 - experience of the surgeon and
 - expectations of the patient
-
- The surgical procedures of OBS varies from quadrant to quadrant

TABLE 1 Oncoplastic decision guide Criteria

	Level I	Level II
Maximum excision volume ratio	20%	20–50%
Requirement of skin excision for reshaping	No	Yes
Mammoplasty	No	Yes
Glandular characteristics	Dense	Dense or fatty

How

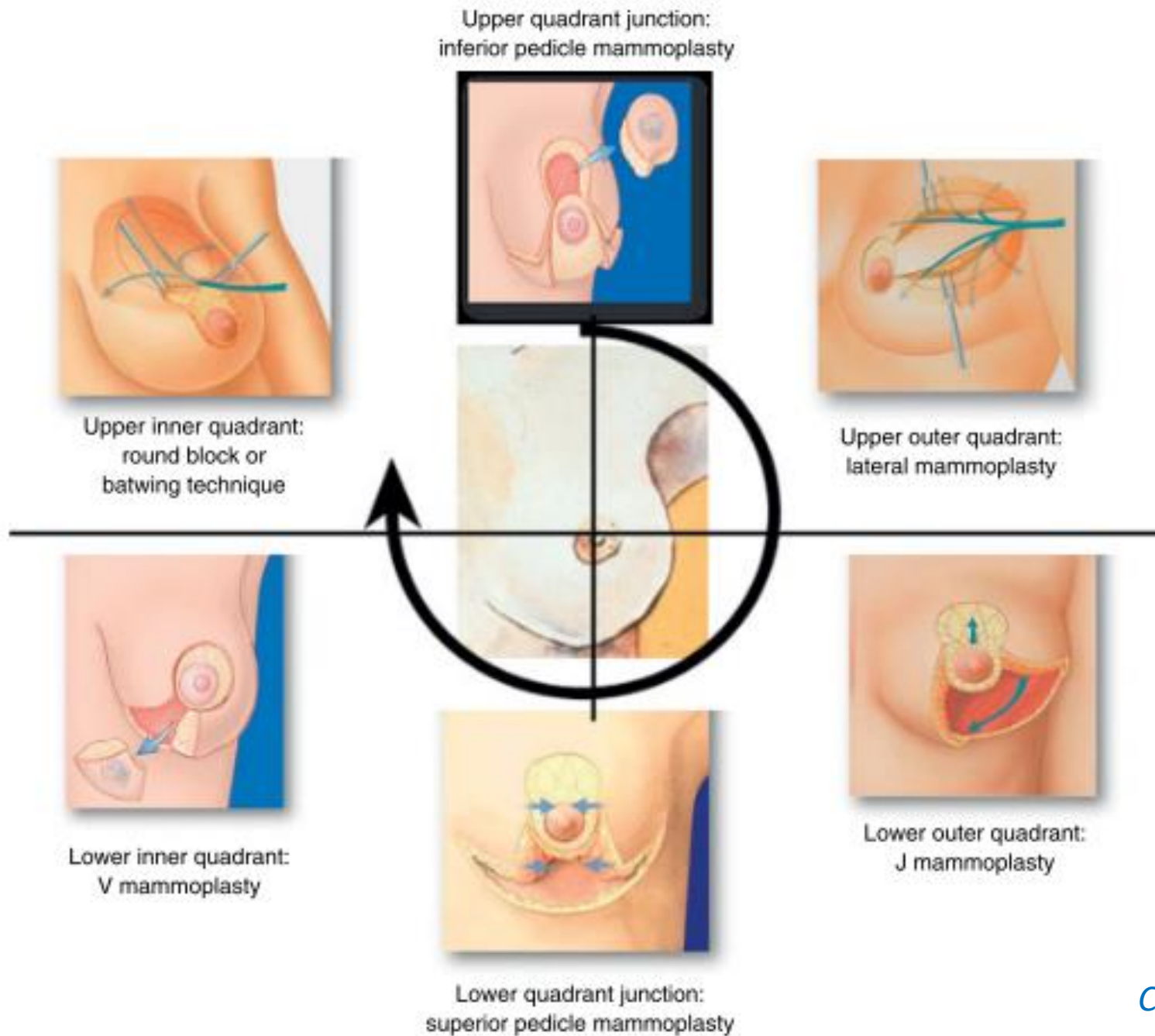
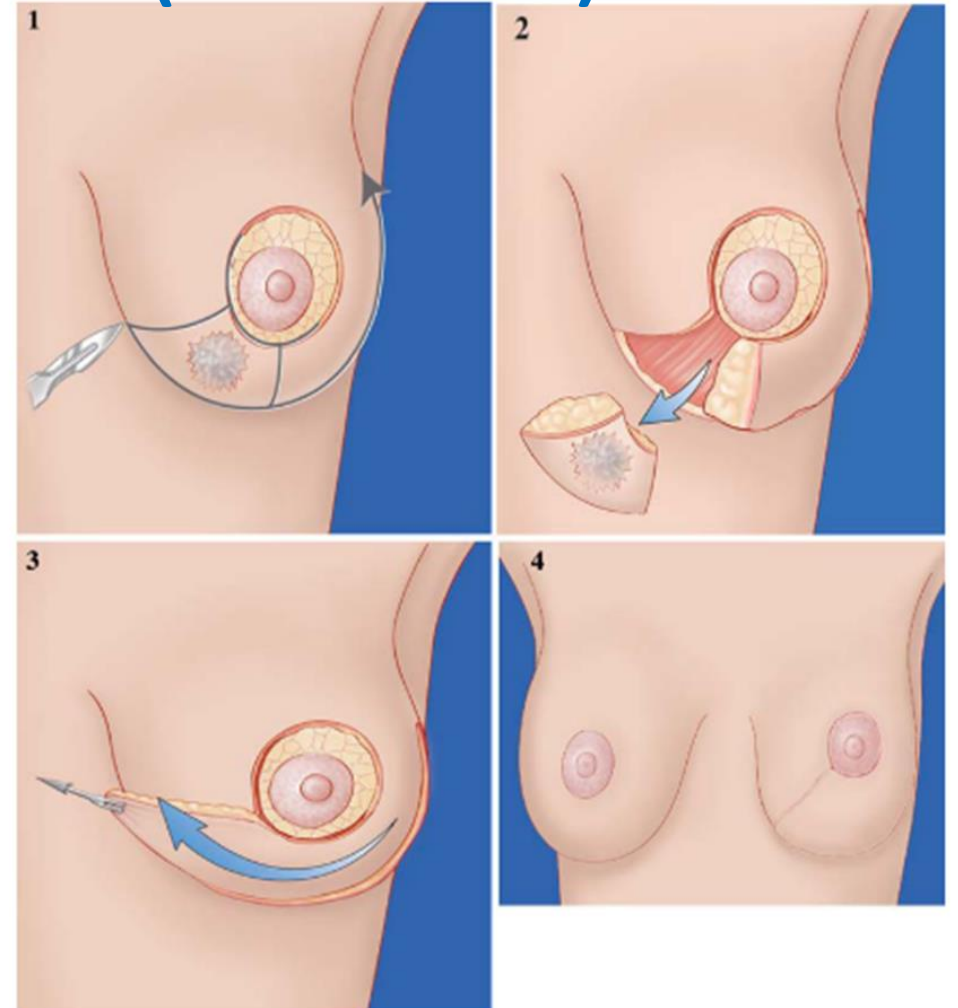
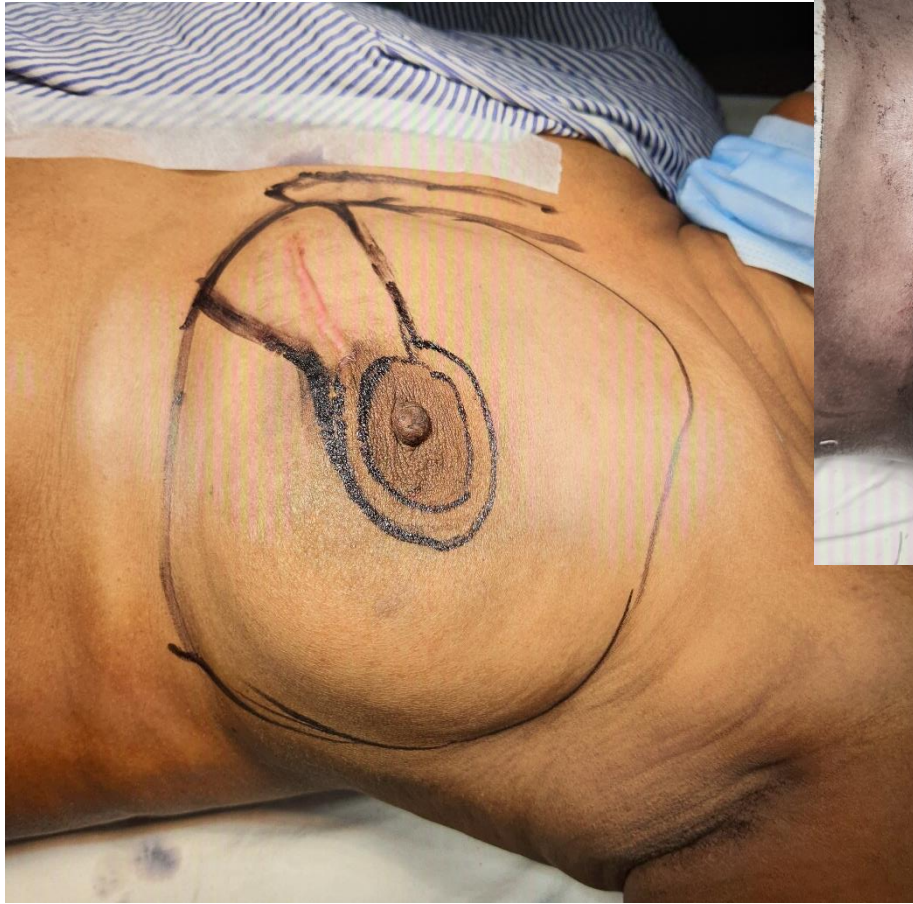
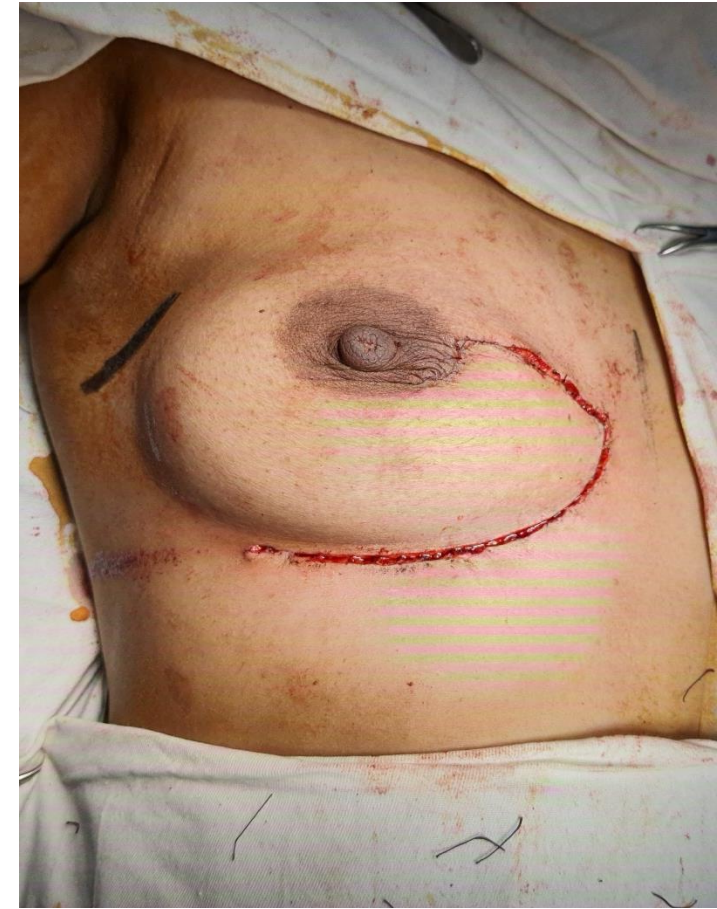
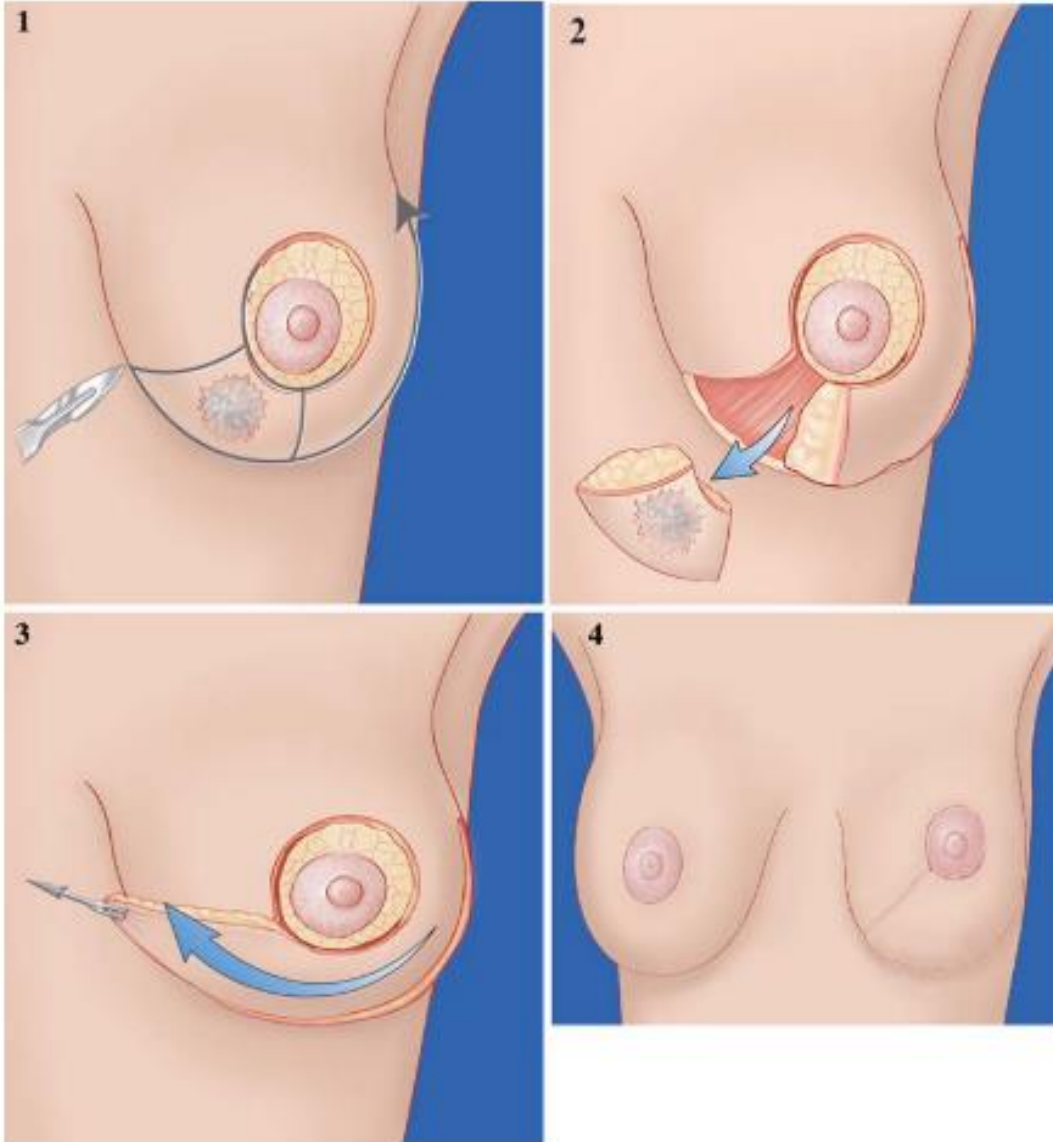


Fig : Quadrant-per-
quadrant atlas of
oncoplastic techniques

V Mammoplasty for lower inner quadrant (7-8 o' clock)



V mammoplasty



J mammoplasty

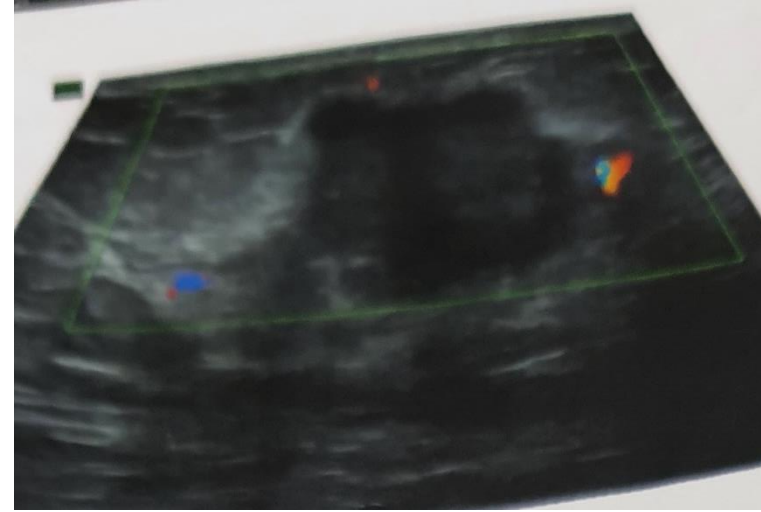


Lower outer quadrant:
J mammoplasty

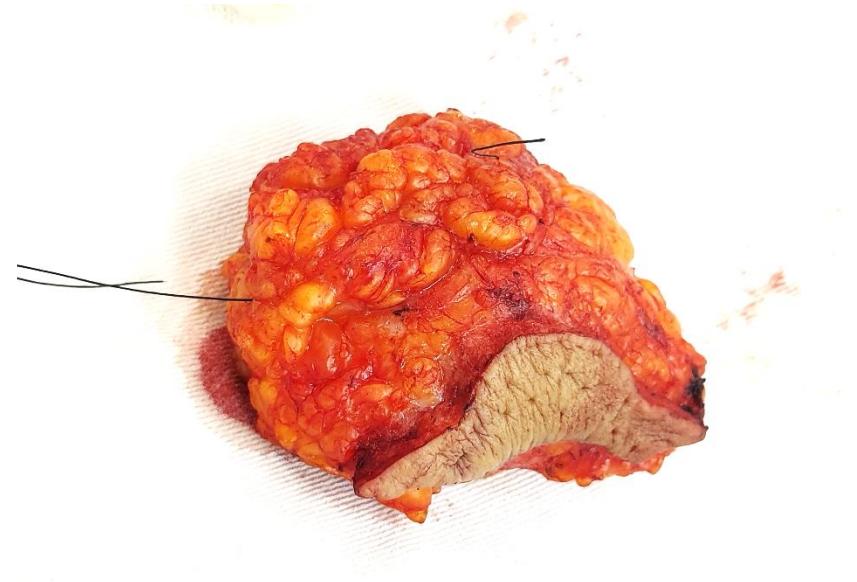


Hemi batwing technique

12 o clock tumour at
Rt breast

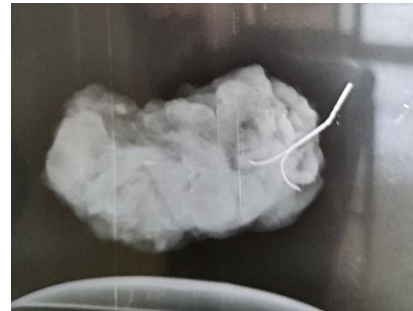


Batwing technique



Wire guided wide local excision with crescentic mammoplasty

IDC, ypT1 N0 (0/7) Mx , All margin clear

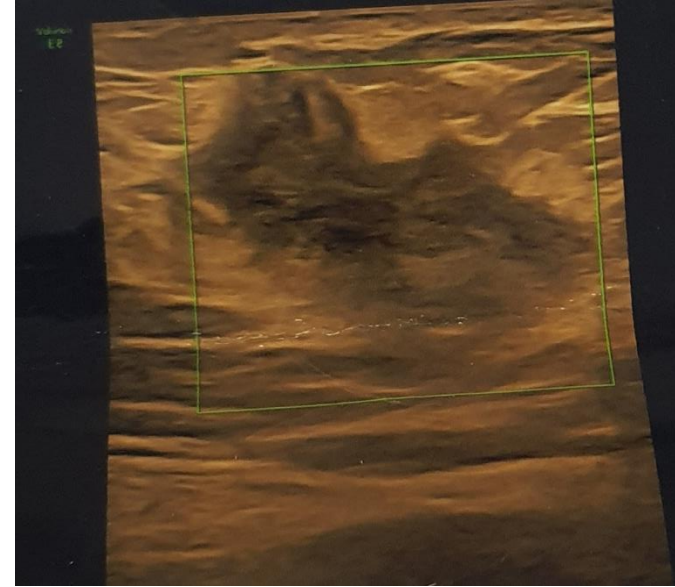
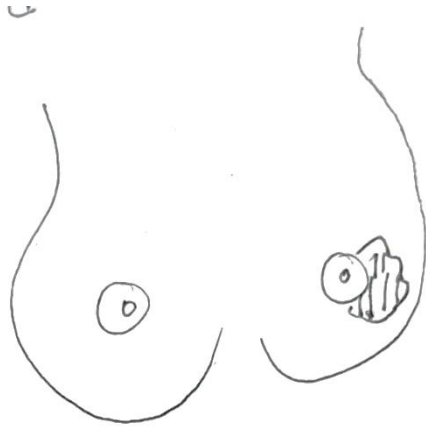


Round block mammoplasty

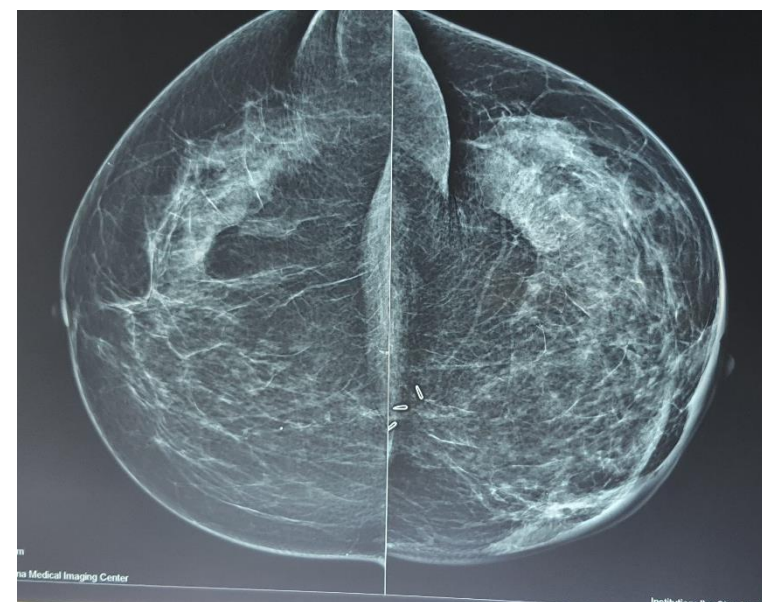


Round block mammoplasty

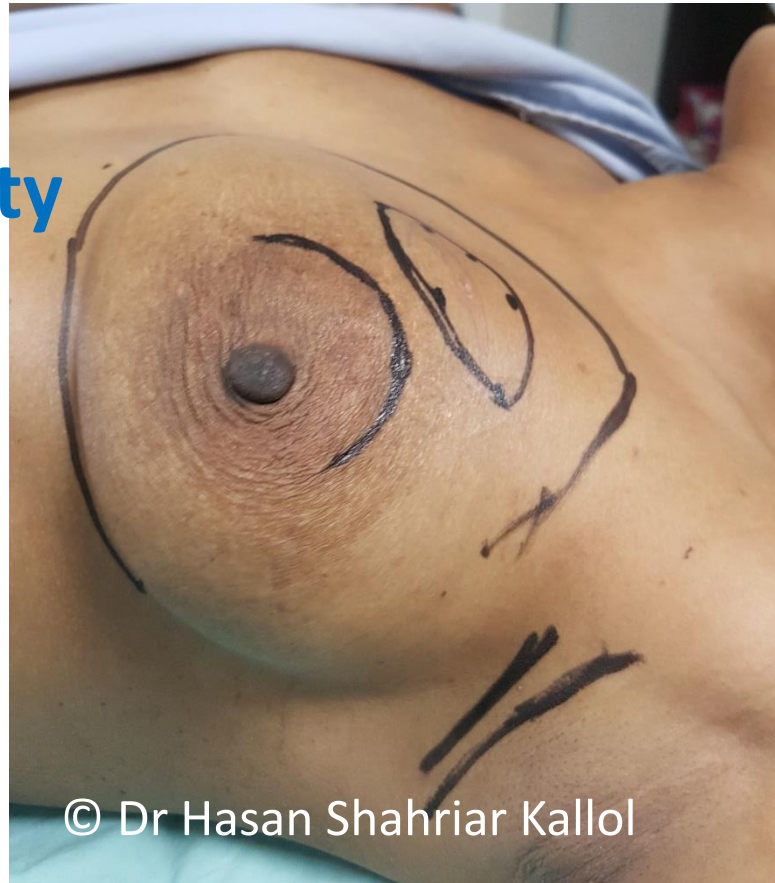
yc T1 N1 Mx



Round block mammoplasty

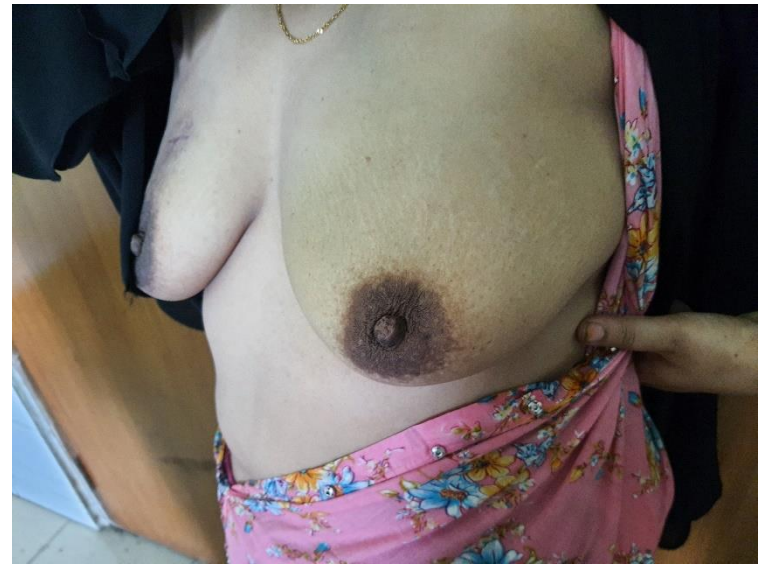


Crescentic mammoplasty



12 months after surgery, chemo and radiation





Superior pole tumour : Post op



Superior pole tumour : Post RT

A case of
unplanned
lumpectomy
with post op
wound infection

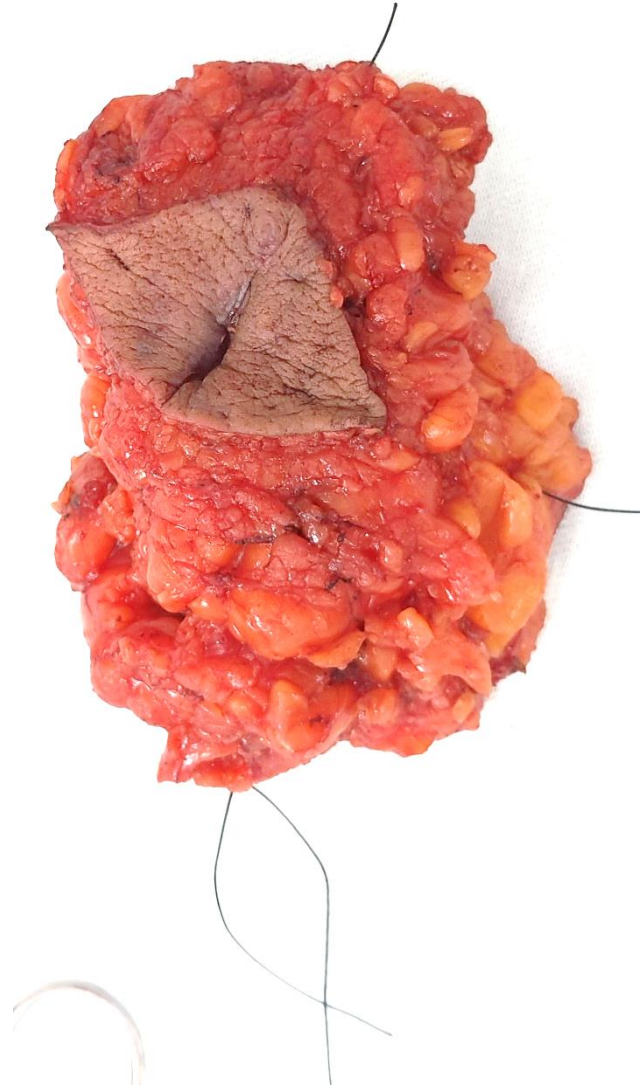


HPR – IDC, no comment
on margin status



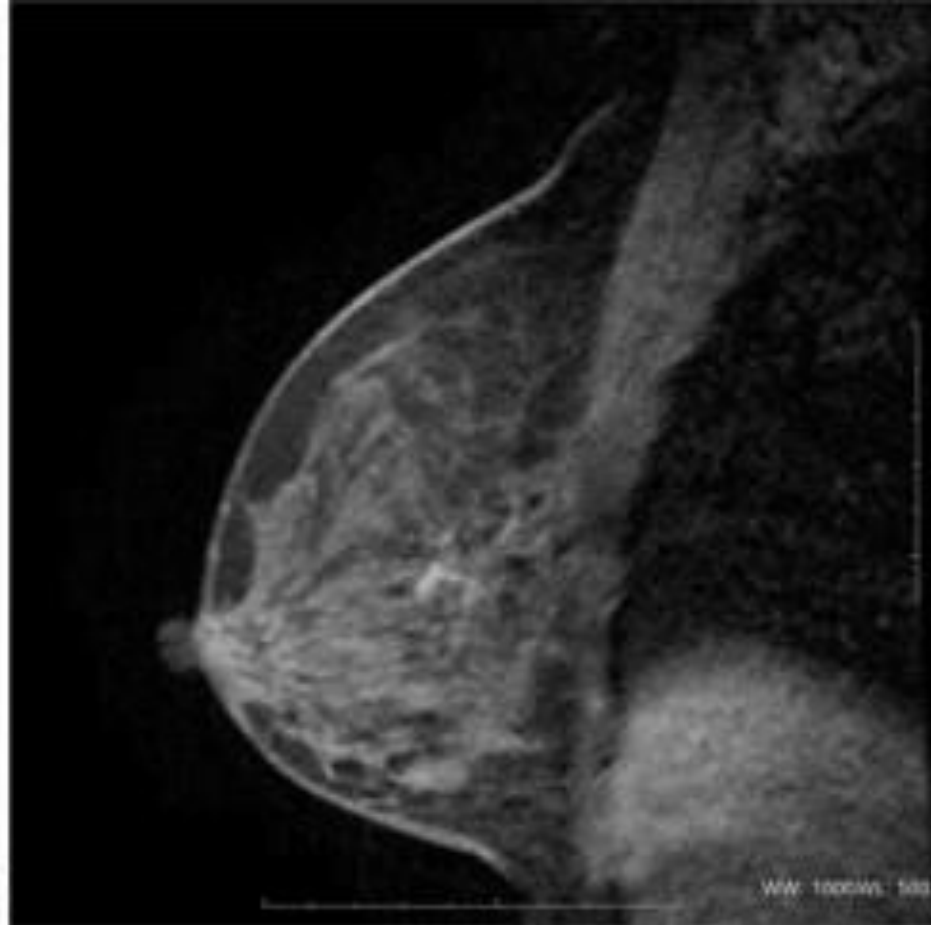
© Dr Hasan Shahriar Kallol

Managed by Oncoplastic breast surgery Parellalogram technique



© Dr Hasan Shahriar Kallol

If the tumour is not palpable



Marker clip



OPEN COIL



BUTTERFLY



BARREL



BOWTIE



TRIPLE TWIST



U-SHAPE

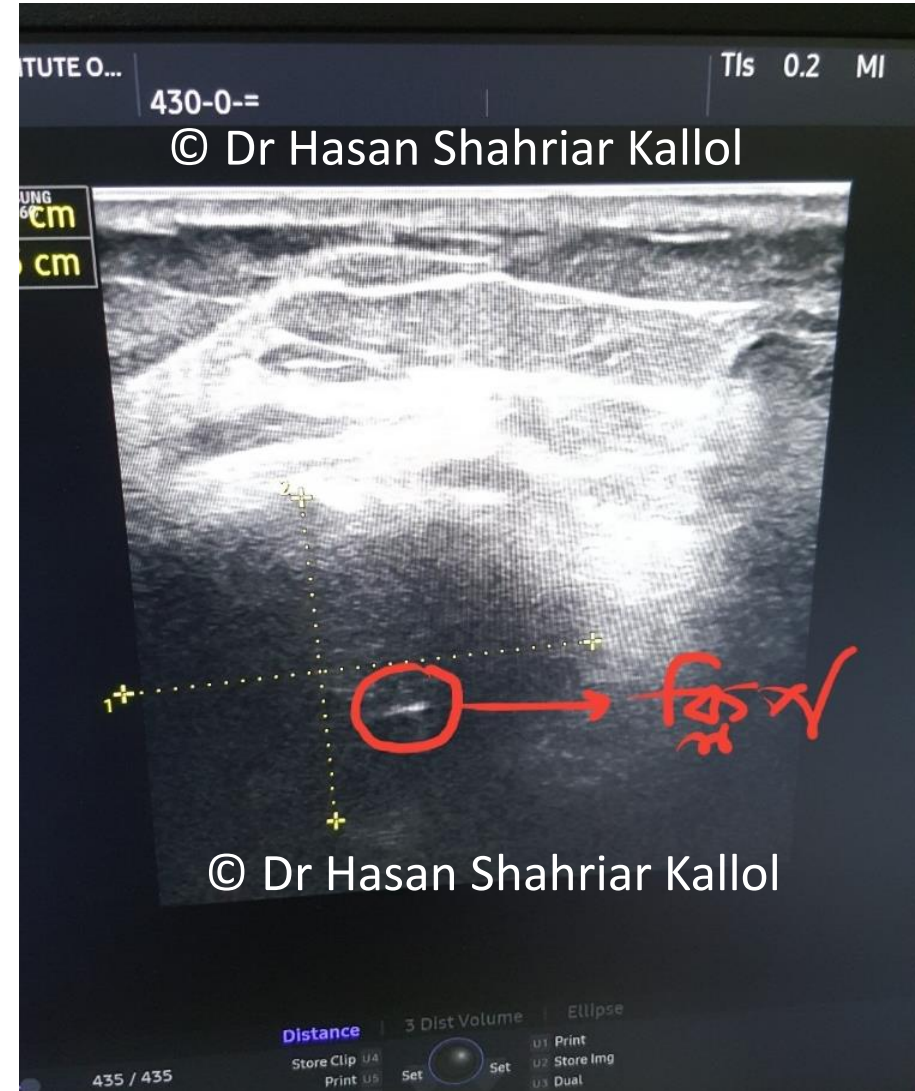
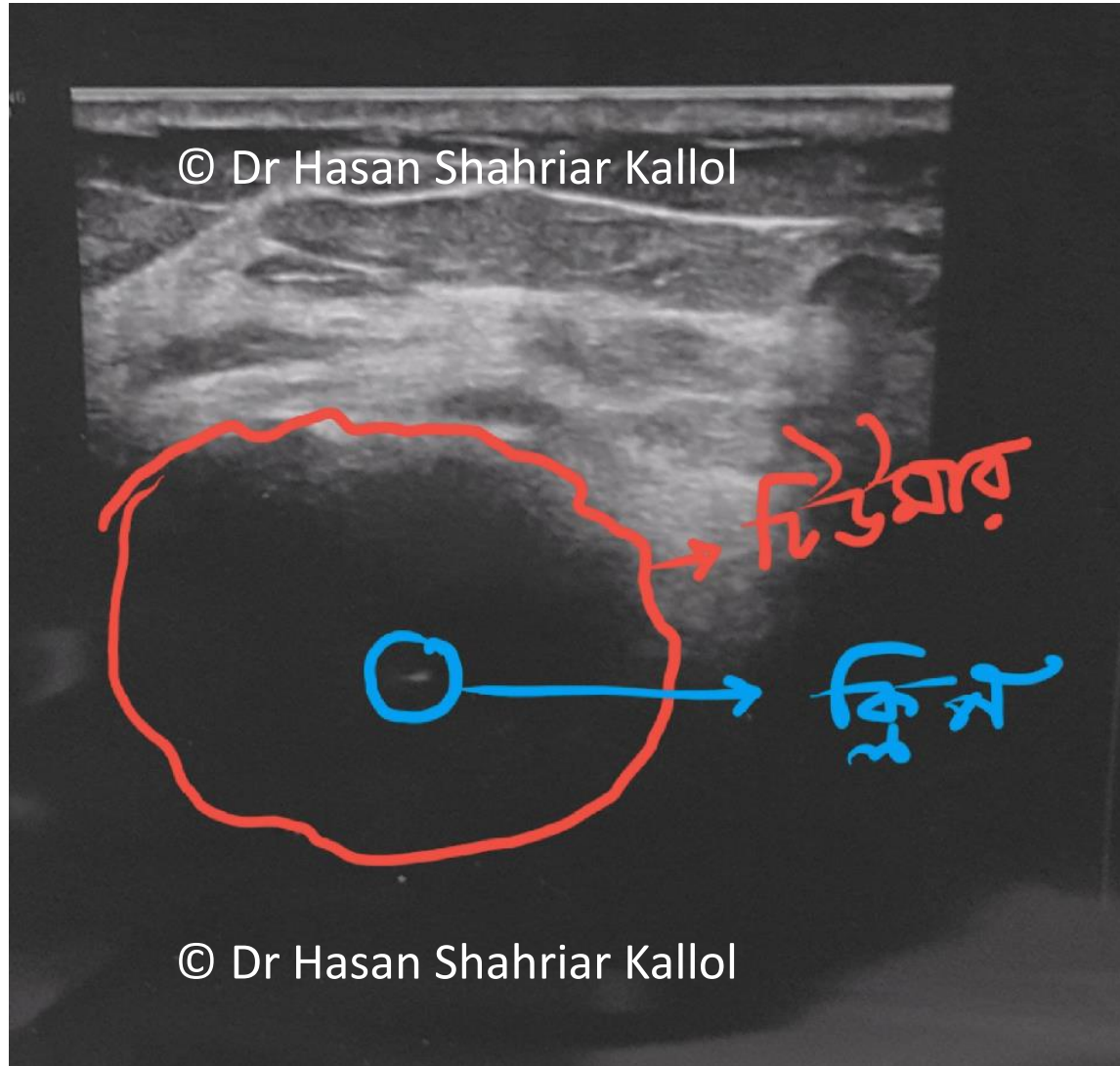


BARBELL

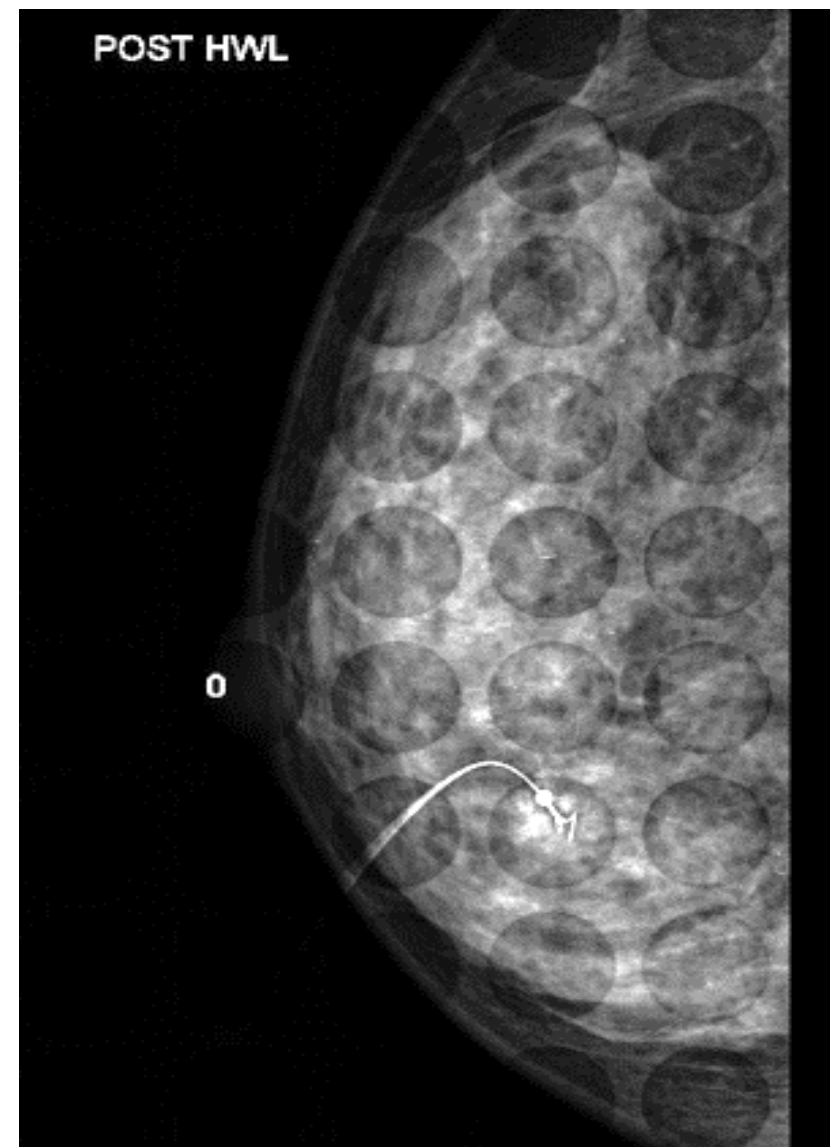
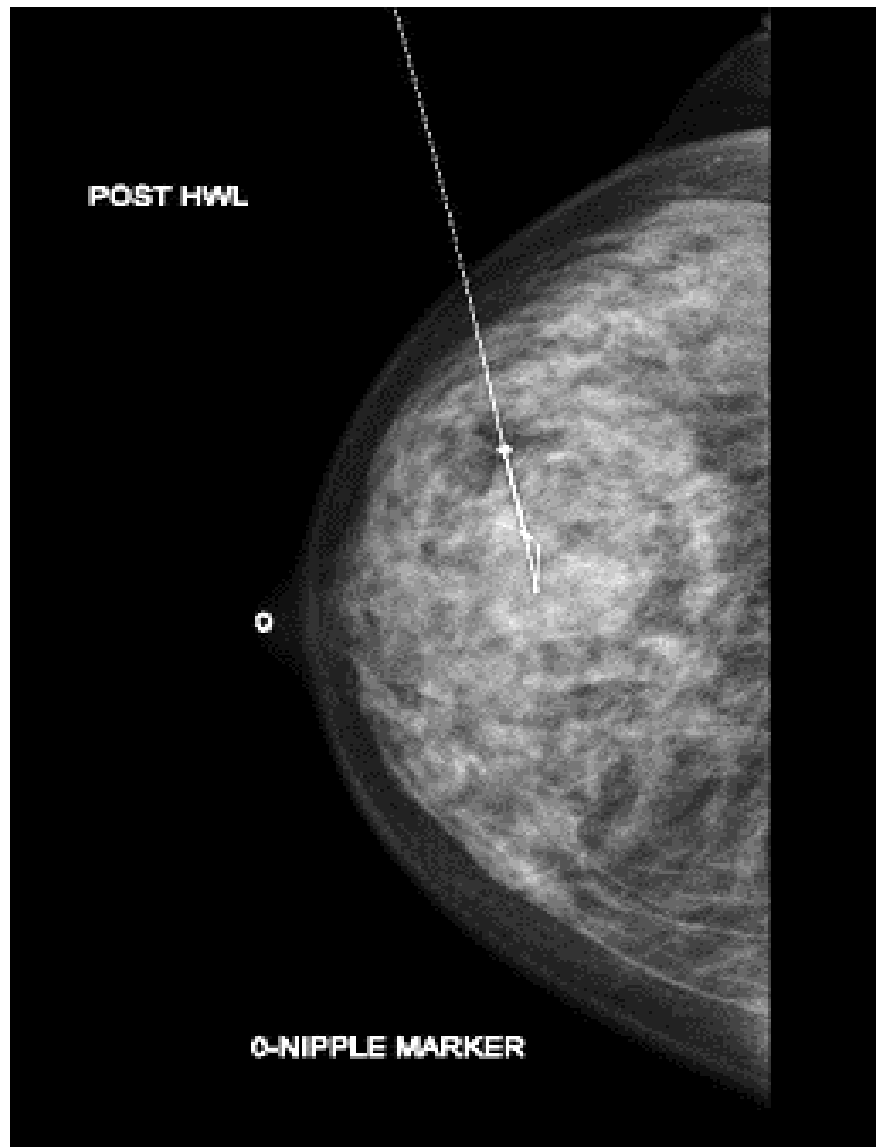


TRIBELL

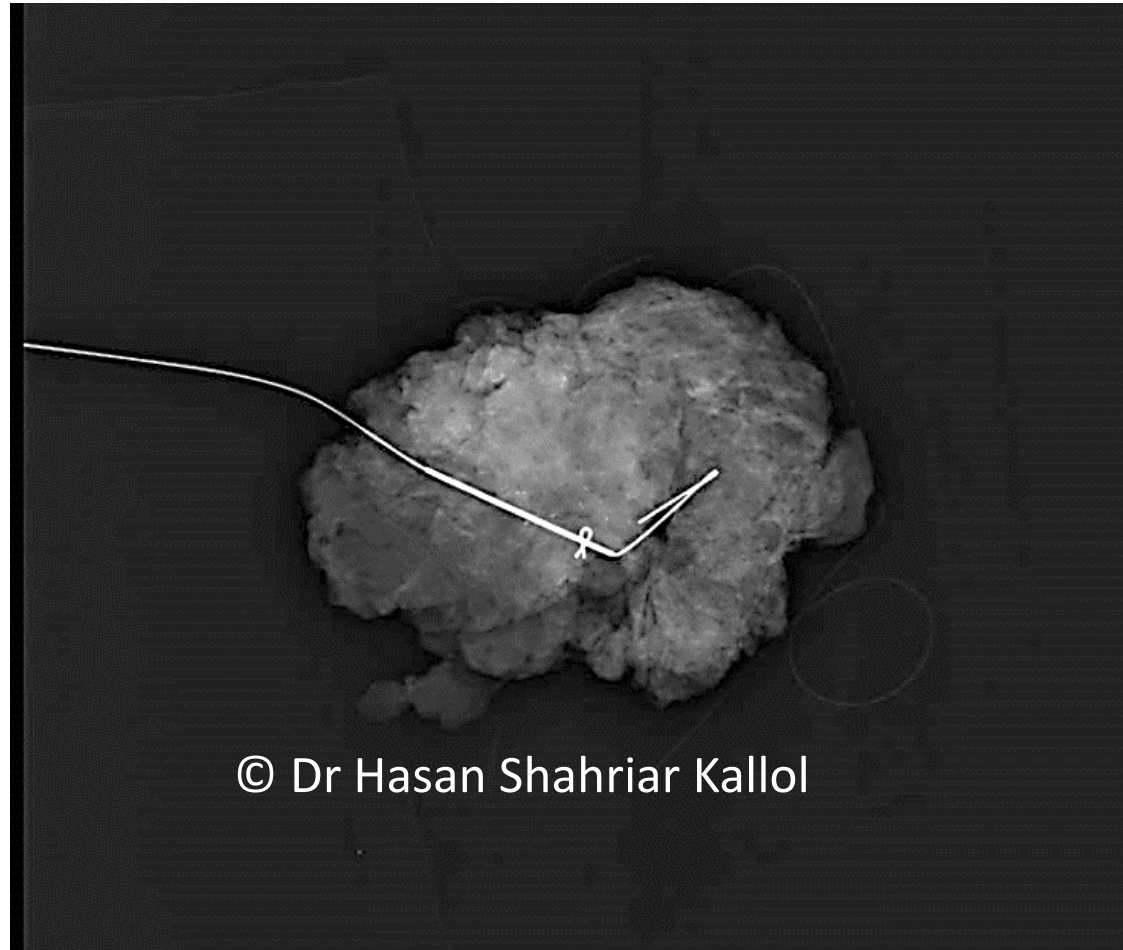
Hydrogel marker clip placed under US guidance



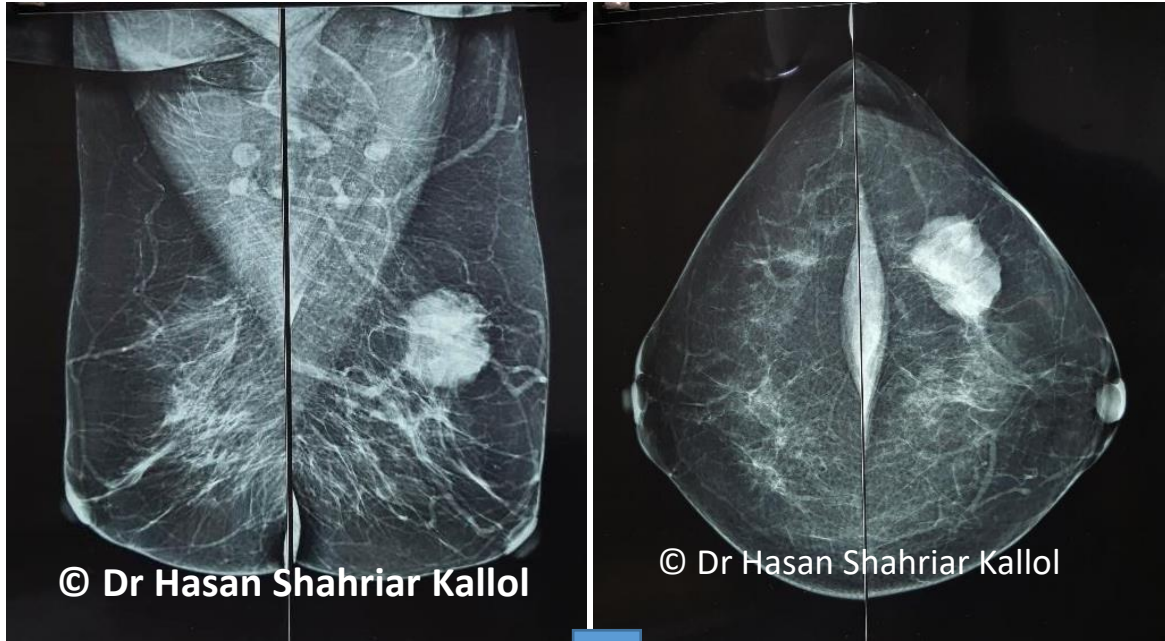
Hooked wire localization



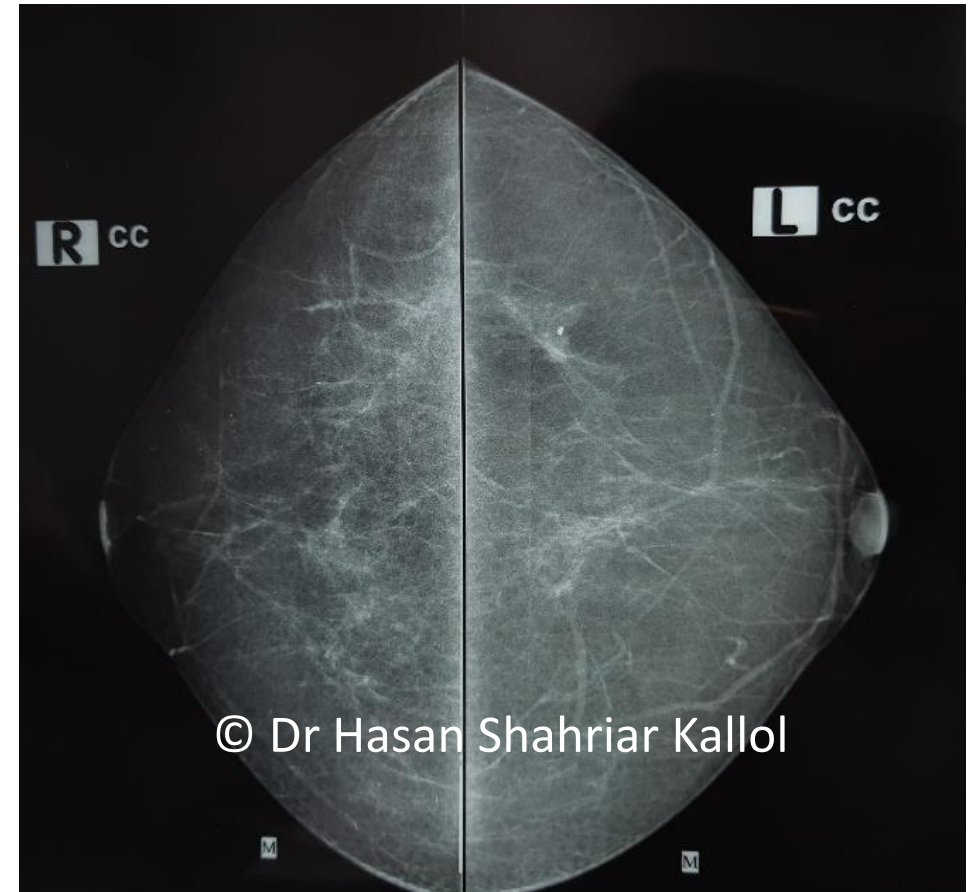
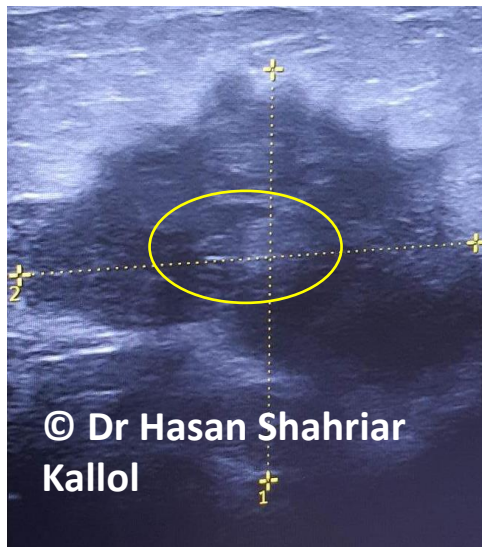
Specimen x-ray after wire guided excision



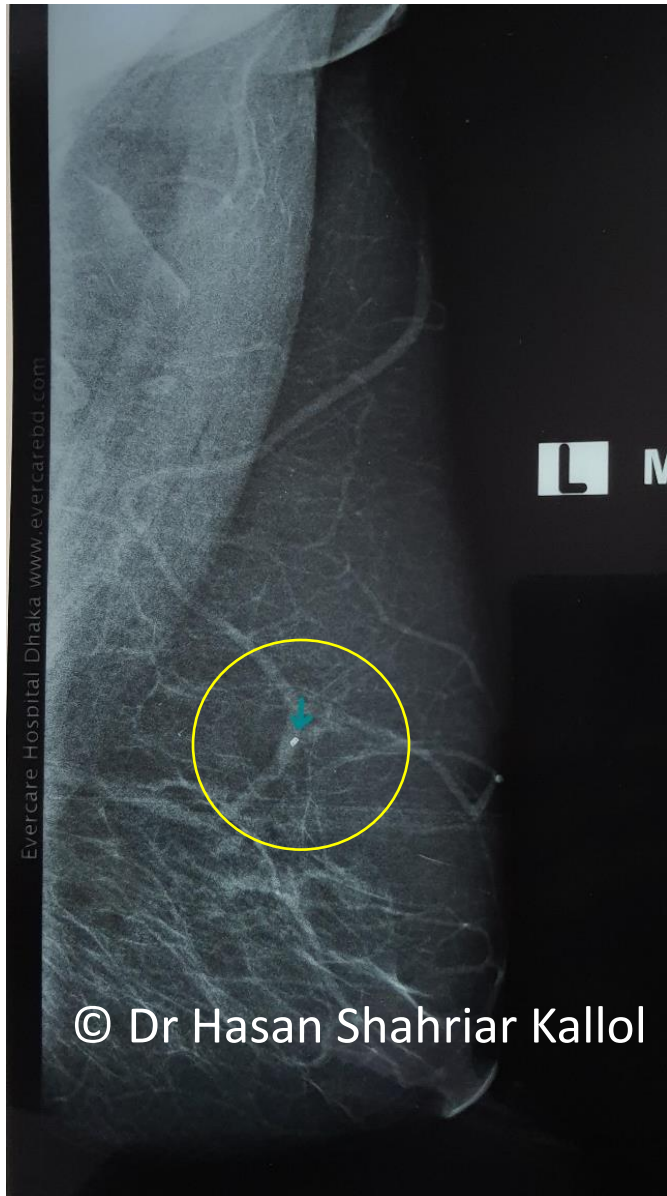
Oncoplastic breast surgery



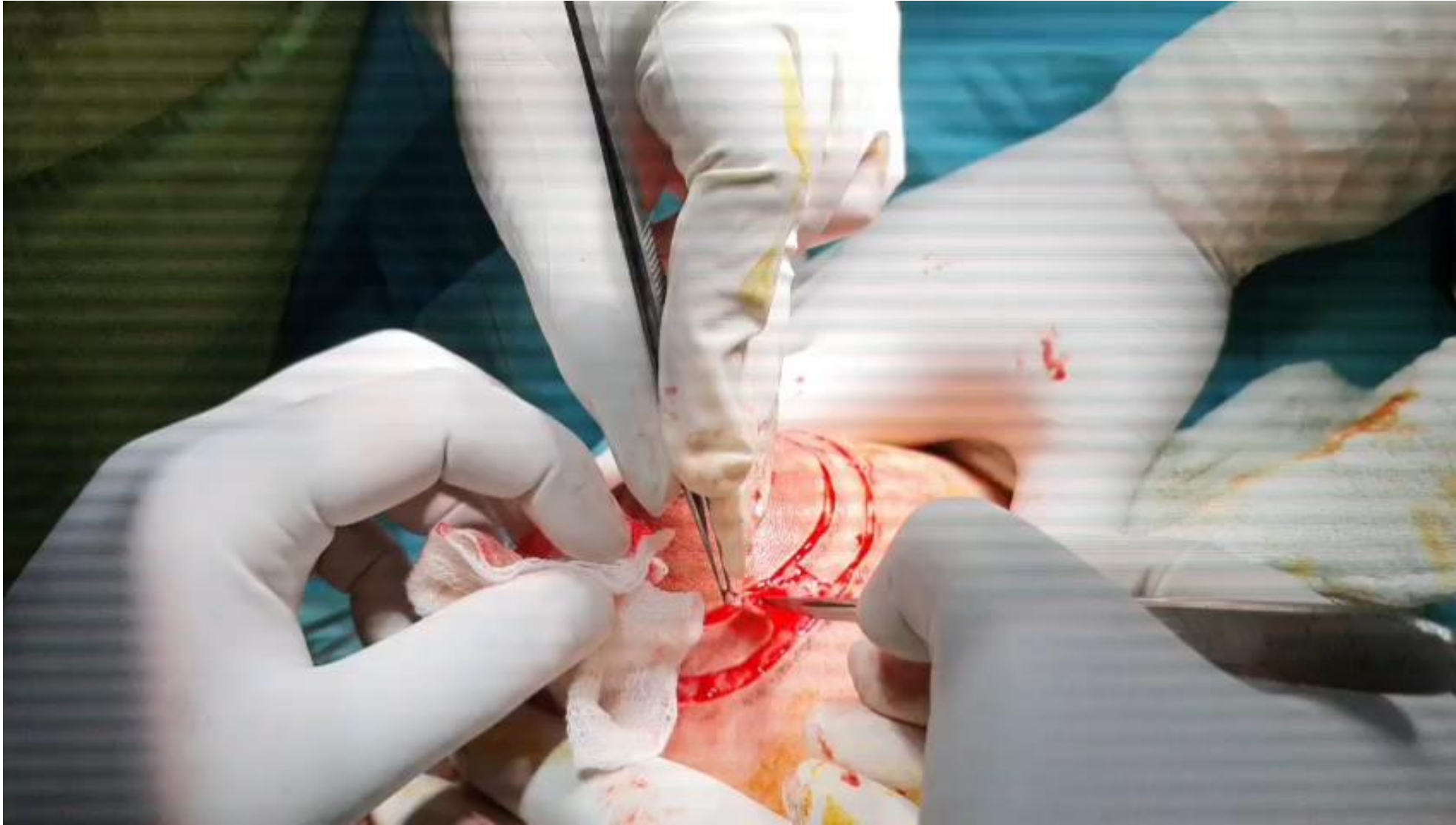
3.5 cm tumour at Lt. breast,
TNBC



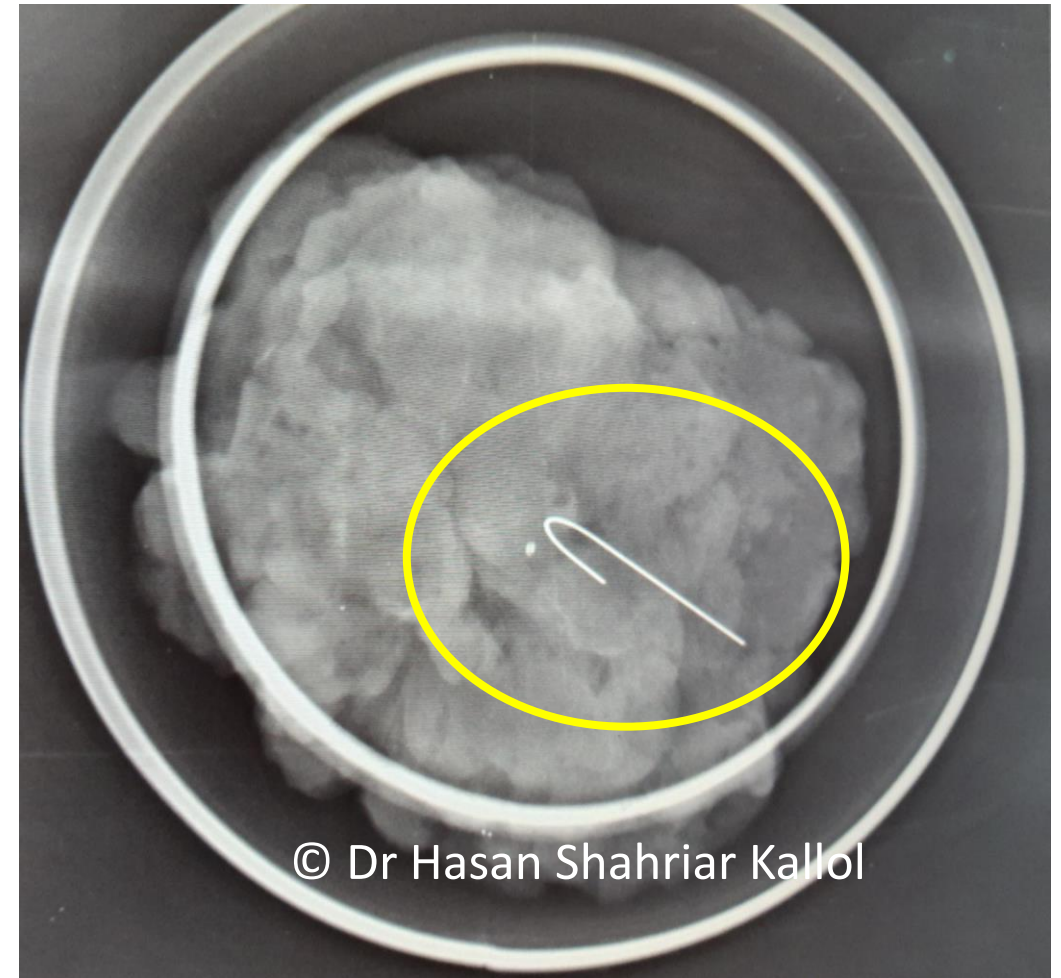
Oncoplastic breast surgery



Wire guided excision with Round block mammoplasty



Specimen x-ray



Appearance after 3 months



Comparison of Oncoplastic Breast-Conserving Surgery and Breast-Conserving Surgery Alone: A Meta-Analysis

Jun-Ying Chen^{1,2,3,*}, Yi-Jie Huang^{4,*}, Liu-Lu Zhang⁵, Ci-Qiu Yang⁵, Kun Wang⁵

3,789 patients
11 studies

2,691 patients in the BCS-alone group

1,098 patients in the BCS plus OPS group

OPS gave actually better outcome than BCS alone

- better cosmesis
- re-excision rate was significantly lower in the BCS plus OPS group (RR, 0.66; 95% CI, 0.48–0.90; $p=0.009$)
- results were close for both the local (RR, 1.14; 95% CI, 0.82–1.59; $p=0.442$) and distal recurrence rates (RR, 1.02; 95% CI, 0.79–1.32; $p=0.856$)
- similar OS (hazard ratio [HR], 1.14; 95% CI, 0.76–1.69; $p=0.527$) and DFS (HR, 1.19; 95% CI, 0.96–1.49; $p=0.112$)

Bangladesh perspective

low local recurrence rates
with equivalent or better
survival of patients after
BCS

routine approach
for early breast
cancers



In the US - **70%** of
cases
(Bramhall et al., 2017)

in our part of the world the rate is as low as 5 – 23%
(Ali, Somashekhar and Kumar N, 2018; Rahman, 2020)

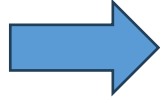
Breast cancer is the highest
prevalent female cancer in
Bangladesh.

Globocan data

NICRH data

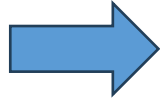
(Paul TK *et al*, 2015)

- increase of awareness



demand of breast conservation more than before.

- To **standardize the OPS**



necessity for **widespread training** of this procedure around



reduce mastectomy rate



physical, psychological and financial impact of mastectomy.

- **Type of Study**

prospective observational study

- **Period of Study**

from March 2021 to June 2022

- **Place of Study**

Department of Surgical Oncology, NICRH

- **Study Population**

Patients with breast cancer who underwent OPS at NICRH during the study period with valid documents

- **Sampling Method**

consecutive purposive sampling

Eligibility Criteria

Inclusion criteria

- All patients, irrespective of age, admitted for surgical treatment of breast cancer willing to have Oncoplastic breast surgery
- Patients with early and locally advanced breast cancers which included clinical stage T1N0/T1N1, T2N0/T2N1, T3N0/T3N1 (as per AJCC TNM staging)
- Patients having either surgery as initial treatment or surgery after neoadjuvant therapy

Exclusion Criteria

- Male breast cancer patient.
- Patients underwent mastectomy.
- Patients with recurrent breast cancers.
- Patients having distant metastases.
- Patients underwent only palliative surgical treatment.
- Patients not willing or fit candidate to take radiotherapy.

Results

The median age of the patients was 40 years (range: 26 to 62 years)

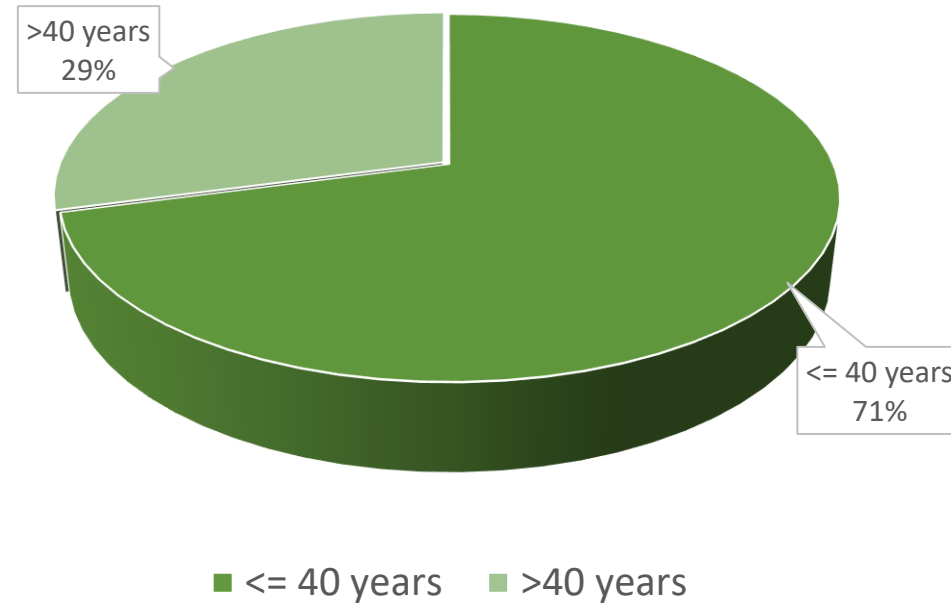


Fig 3: Age distribution

Table 2: Family monthly income by category (n = 48)

Variables	Frequency	Percent
	(n)	(%)
< = 10000 taka	20	41.7
>10000 - 20000 taka	21	43.8
>20000 taka	7	14.6

Table 3: Menstrual status (n = 48)

Variables	Frequency	Percent
	(n = 48)	(%)
premenopausal	23	47.9
artificial menopause	16	33.3
post-menopausal	9	18.8

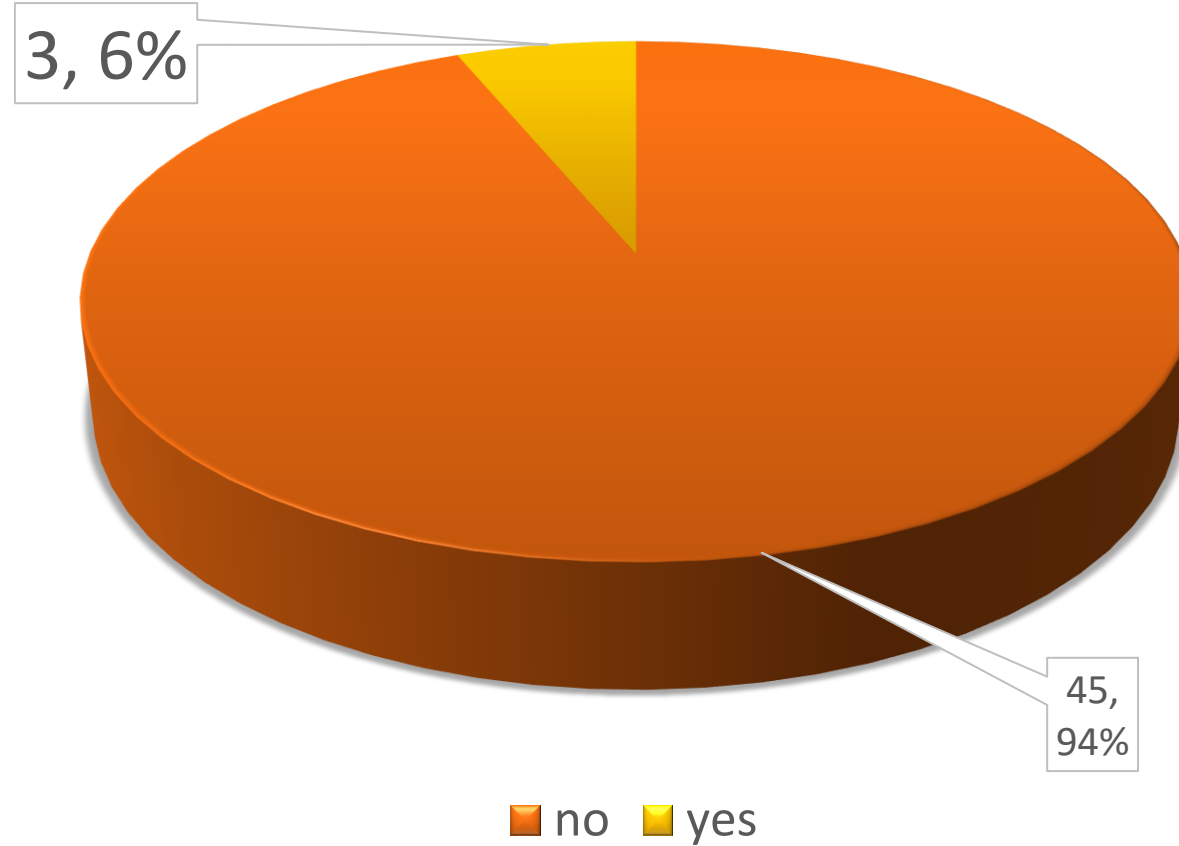


Fig 4: Family history of breast cancer

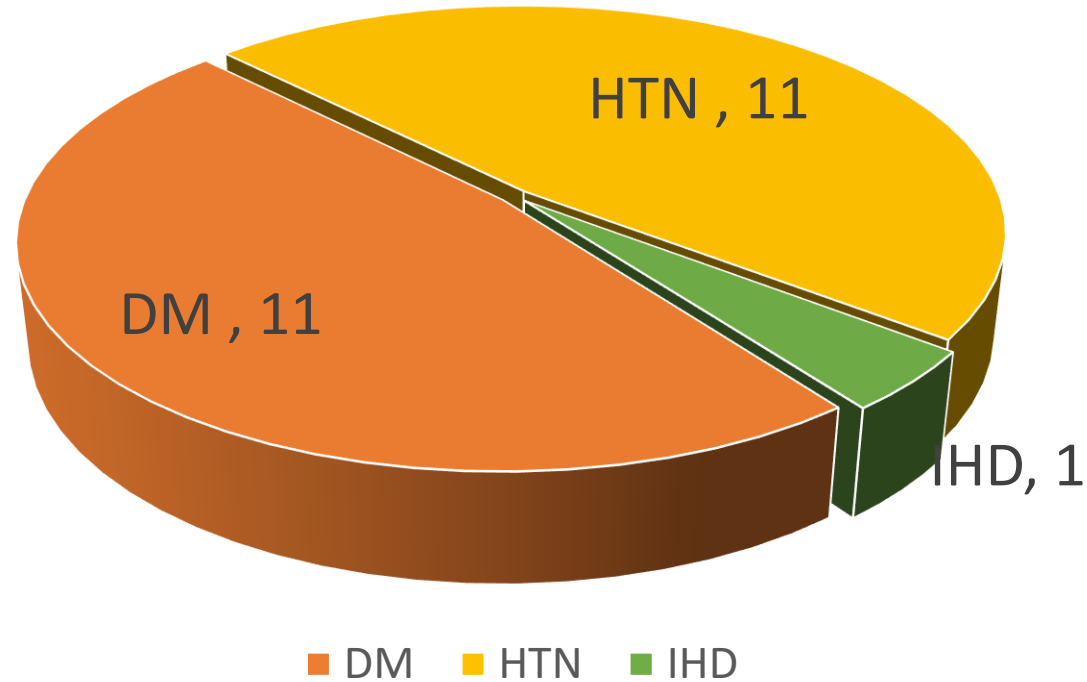


Fig 5: Comorbidity type

Eighteen patients (37.5%) had some sorts of comorbidities including diabetes, hypertension, ischemic heart disease, chronic obstructive pulmonary disease or chronic kidney disease. Four of those have more than one comorbidity.

Table 5: BMI by category (n = 48)

Variables	Frequency (n)	Percent (%)
underweight <18.5	1	2.1
normal (18.5- 24.9)	19	39.6
overweight (25-29.9)	18	37.5
obese (>30)	10	20.8

Mean BMI of the patients were 26.78 ± 4.28 kg/m².

Table 6: Distribution of patients according to tumour characteristics (n = 48)

Variable	Category	Number (n)	Percentage(%)
Site of tumour	UOQ	26	 54.2
	UIQ	14	29.2
	LOQ	7	14.6
	LIQ	1	2.1
	UOQ	26	54.2
Clinical T Stage	T1	6	12.5
	T2	38	 79.2
	T3	4	8.3
Grade of tumour	1	1	2.1
	2	43	 89.6
	3	4	8.3

**Table 7: Distribution of patients according to receptor status
(n = 48)**

Variable	Frequency	Percentage (%)
	(n)	
Hormone receptor (+)ve	12	25
HER2 (+)ve	11	22.4
HER2 equivocal	4	8.3
TNBC	21	43.8

Table 8: Distribution of patients according to clinical staging at presentation
(n = 48)

Variable	Category	Number (n)	Percentage (%)
Clinical T Stage (cT)	T1	6	12.5
	T2	38	→ 79.2
	T3	4	8.3
Clinical N Stage (cN)	N0	10	20.8
	N1	38	→ 79.2

At presentation median clinical size of the tumour was 29 mm (Range: 10 – 60 mm).

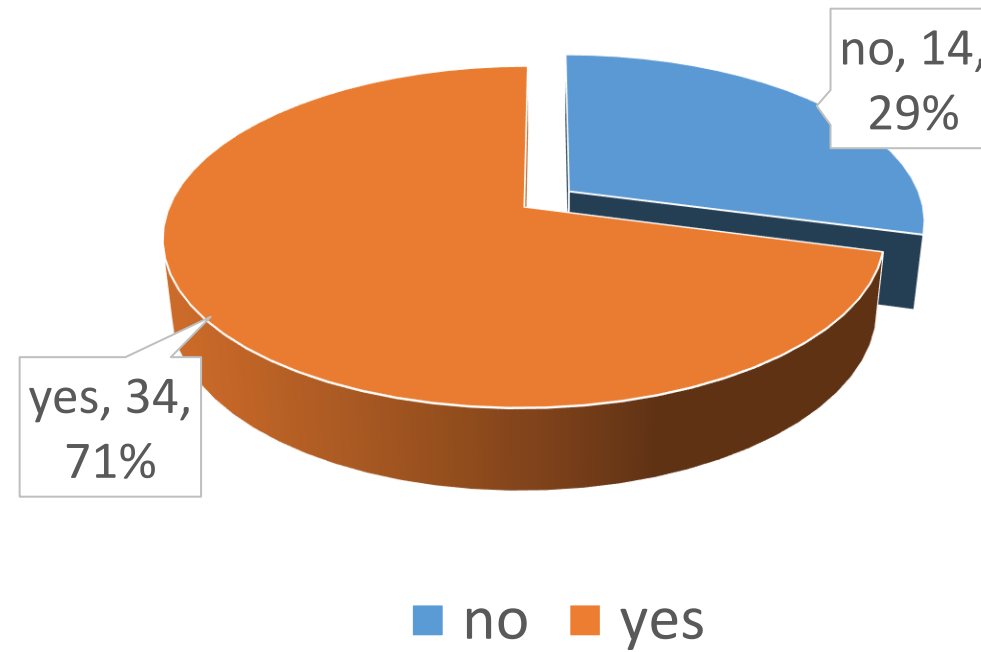


Fig 6: Distribution of patients receiving neoadjuvant chemotherapy

Table 9: Distribution of patients according to clinical staging after NACT
(n = 34)

Variable	Category	Number (n)	Percentage (%)
Clinical T Stage after NACT (ycT)	T0	5	15.2
	T1	19	57.6
	T2	8	24.2
	T3	1	3.0
Clinical N Stage (ycN)	N0	14	41.2
	N1	20	 58.8

Table 10: Distribution of patients by breast procedure (n = 48)

Variable	Frequency (n)	Percent (%)
WLE with round block mammoplasty	10	20.8
WLE with medial mammoplasty	1	2.1
WLE with hemibatwing	4	8.3
WLE with batwing	1	2.1
WLE with J mammoplasty	1	2.1
WLE with omega mammoplasty	2	4.2
WLE only along with volume displacement	11	22.9
Cavity shaving	3	6.3

Variable	Frequency (n)	Percent (%)
WLE with crescentic mammoplasty	3	6.3
WLE with “V” mammoplasty	1	2.1
WLE with Parallaelogram	3	6.3
WLE with Matrix rotation flap	2	4.2
WLE with transposition flap	1	2.1
WLE with LICAP flap	1	2.1
WLE with Lateral mammoplasty	3	6.3
WLE with key hole mammoplasty	1	2.1

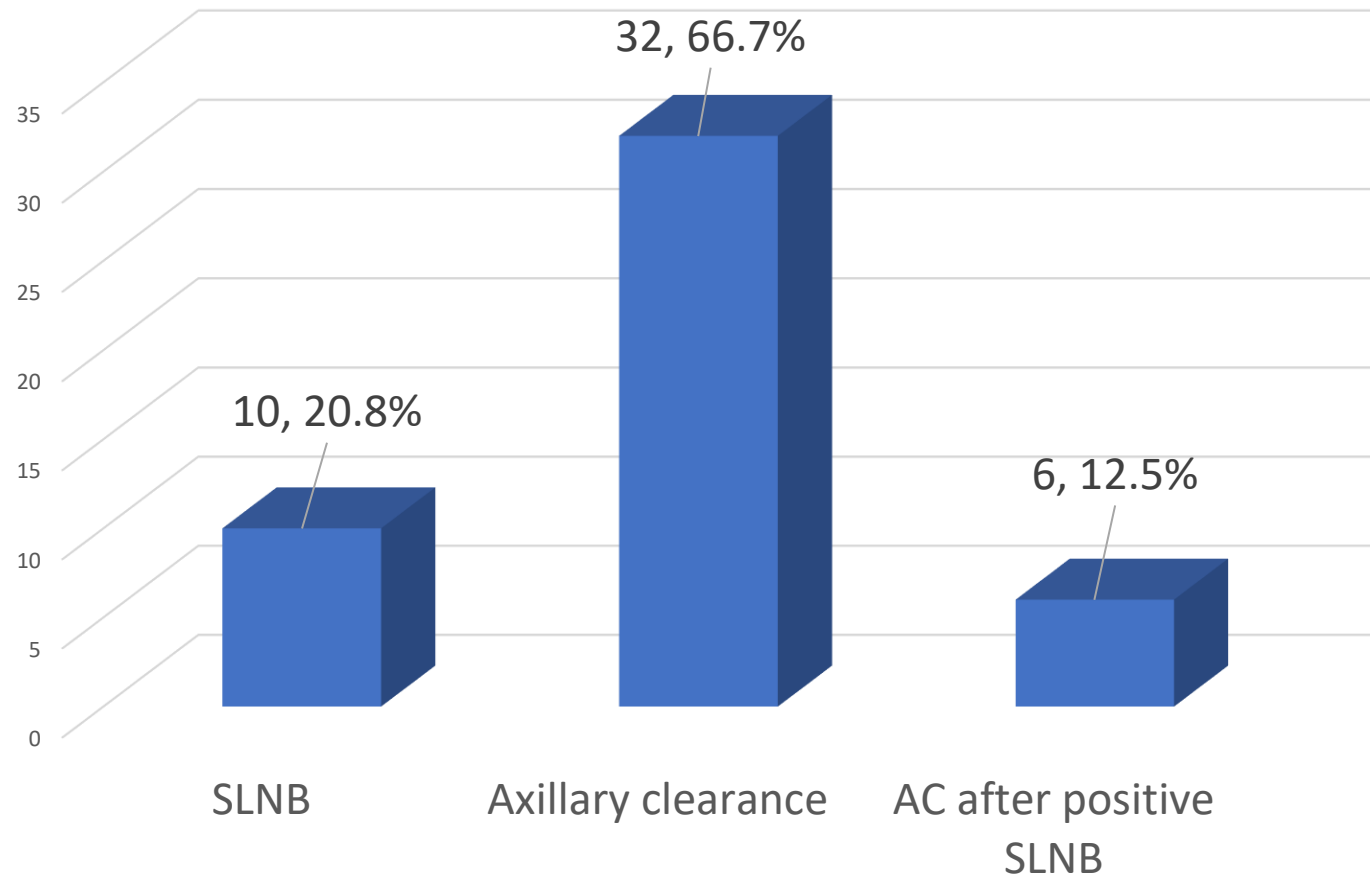


Fig 9: Name of axillary procedures (n = 48)

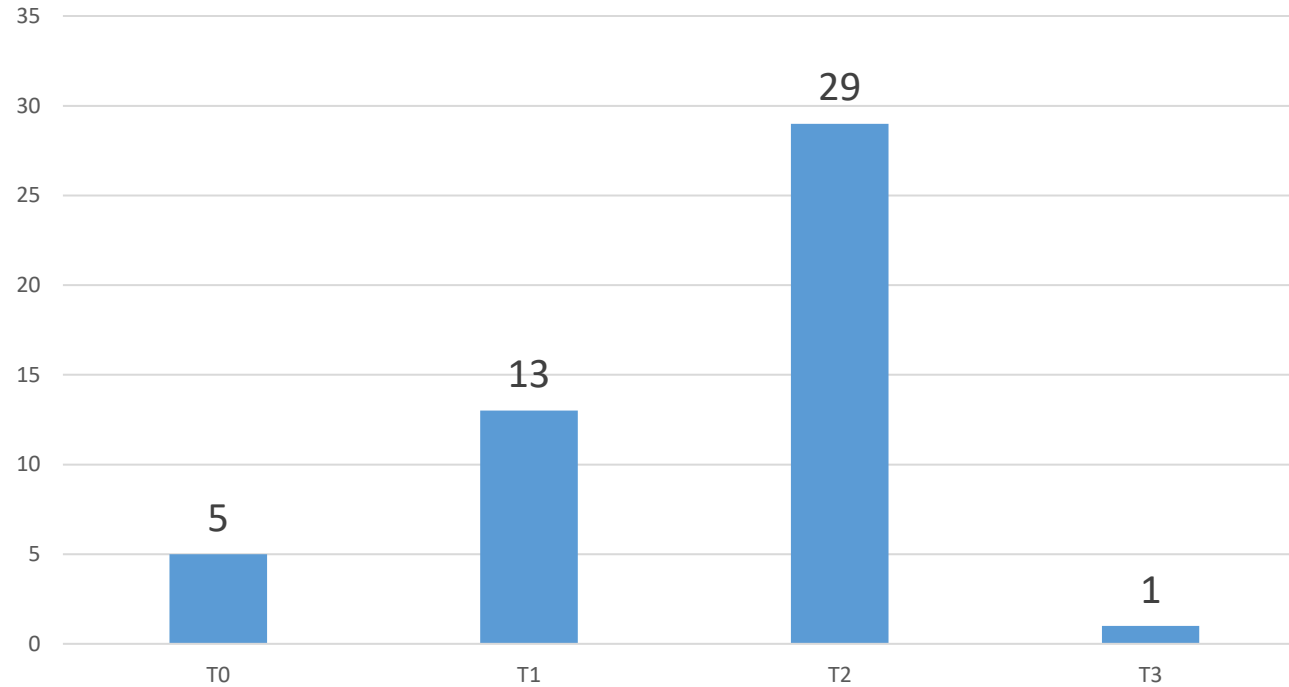


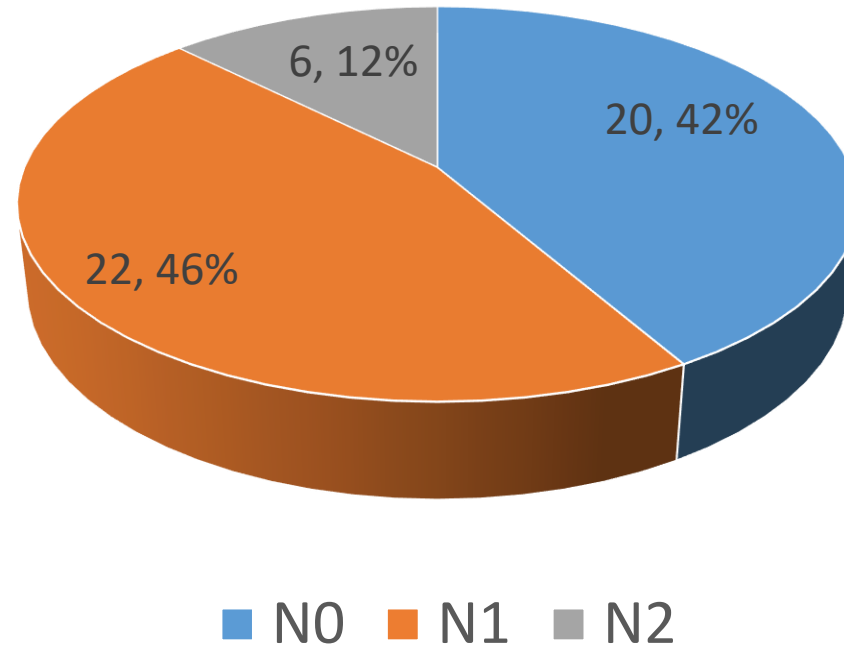
Fig 10: Pathological T stage

Mean pathological size of tumour was 20.38 ± 11.54 mm.

All the patients got pathological clear margin (100 %).

The mean distance of margin clearance was 15.05 (SD ± 7.68) mm

Fig 11: Pathological nodal stage (n=48)



- Mean number of nodes yielded in SLNB was 3.30 ± 1.7 (n = 10).
- The range of positive lymph nodes after SLNB was 0 to 1.
- Mean number of nodes yielded after AC was 9.27 ± 1.77 .
- The mean of positive lymph nodes after AC was 1.76 ± 1.76 .

Table 11: Response to NACT as per RECIST criteria (n = 34)

Variables	Frequency	Percent
	(n)	(%)
complete	3	6.3
partial	26	54.2
stable	3	6.3
progressive	2	4.2

Median duration of procedures was 100 minutes (range of 55 to 180 minutes).

Table 12: Post op pain in day 1 and day 3 (by numerical rating scale, from 0 to 10) (n = 48)

Post-operative pain in day	Score	Frequency (n)	Percent (%)
01	1-5	31	64.6
	6-10	17	35.4
03	1-5	44	91.66
	6-10	4	8.3

The **median score of post-operative pain** at day 1 and day 3 were 5 (range: 3-8) and 2 (range: 1-6) respectively.

The **mean length of post-operative hospital stay** was 3 days (Range: 1-6 days).

Fig 12: Post-operative complications

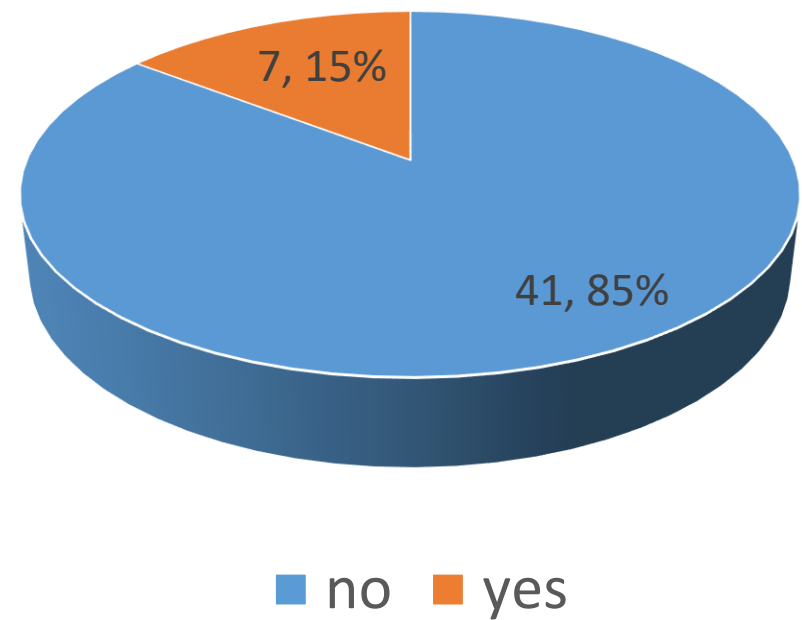


Fig 13: Types of complications

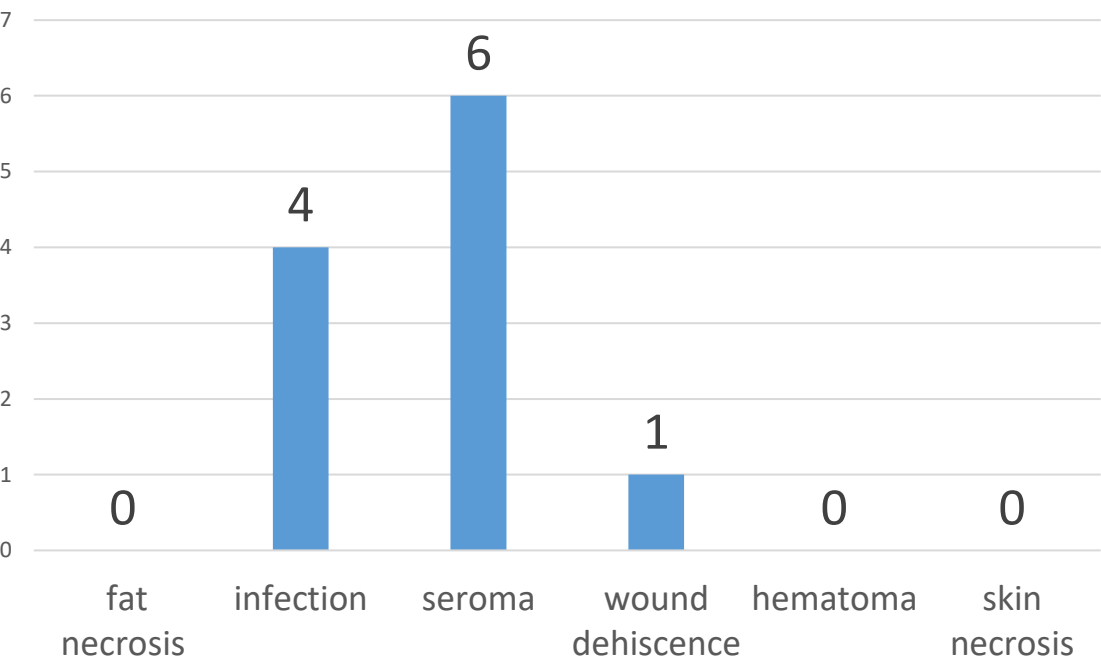


Table 13: Cosmetic evaluation by 4 points Likert scale (n = 47)

variables	Category	Frequency (n)	Percent (%)
Shape	poor	0	0
	Fair	3	6.4
	good	21	44.7
	excellent	23	48.9
Cleavage	poor	1	2.1
	Fair	4	8.5
	good	13	27.7
	excellent	29	61.7
Scar Visibility	poor	2	4.3
	Fair	15	31.9
	good	24	51.1
	excellent	6	12.8
Symmetry	poor	1	2.1
	Fair	5	10.6
	Good	27	57.4
	Excellent	14	29.8

- The median cosmesis score was 13 (Range: 6-16).
- Most of the patients (46, 97.9%) had a good to excellent (score 11 – 16) cosmesis.

Table 14: Quality of life scores in 100 (n = 48)

Variable	Category by score	Frequenc y (n)	Percent (%)
Body image scale category	<80	9	18.8
	81-90	9	18.8
	90-100	30	62.5
Fear of recurrence category	0-40	2	4.2
	41-60	15	31.3
	60-70	8	16.7
	70-80	22	45.8
	80-90	1	2.1

- Most of the patients (30, 62.5%) were highly satisfied with their body image with a score of 91-100.
- Twenty two patients (45.8%) were in 70-80 score range of fear of recurrence. But 25 patients were below 70 score with higher fear of recurrence.

Variable	Category by score	Frequency (n)	Percent (%)
Satisfaction with treatment	50	2	4.2
	75	23	47.9
	100	23	47.9
Cosmetic result	50	5	10.4
	75	32	66.7
	100	11	22.9

Satisfaction with treatment

- 46 patients - they will do the same treatment either certainly (47.9%) or probably (47.9%)

cosmetic result

- 22.9 % - the treated breast resembles the opposite breast very much
- 66.7 % patients said that it is quite a bit similar

Table 16: Association between cosmesis and comorbidity

Cosmesis	Comorbidity		Fisher's Exact test	<i>p</i>-value
	No (n=30)	Yes (n=17)		
Poor to fair	6 (20)	2 (11.11)	.692	0.257 (NS)
Good to excellent	24 (80)	15 (83.33)		

Table 17: Association between BMI category and post-operative complications

Post operation complications	BMI category		Fisher's exact test	<i>p</i> -value
	Underweight to normal (n=19)	Overweight to obese (n=29)		
No	17 (89.5)	24 (82.8)	.416	0.687 (NS)
Yes	2 (10.5)	5 (17.2)		

Table 18: Association between preoperative T stage and cosmesis

Preoperative T stage	Cosmesis		Fisher's Exact test	<i>p</i> -value
	Poor to fair (n=8)	Good to excellent (n=39)		
T0 + T1	2 (25)	26 (66.6)	4.7854	.028
T2 + T3	6 (75)	13 (33.3)		

Table 19: Association between NACT with post-operative complications

Post-operative complications	Neoadjuvant treatment received		χ^2 test	<i>p</i> -value
	No	Yes		
	(n=14)	(n=34)		
No	14 (100.0)	27 (79.4)	3.374	0.09 (NS)
Yes	 0 (0.0)	 7 (20.6)		

Table 20: Association between post-operative complication and cosmesis

Post-operative complications	Cosmesis		χ^2 test	<i>p</i> -value
	Poor to fair (n=8)	Good to excellent (n=39)		
No	5 (62.5)	36 (92.3)	5.2963	.021
Yes	3 (37.5)	3 (7.7)		

Table 21: Association between post-operative complication and body image

Post-operative complication	Body image		χ^2 test	<i>p</i> -value
	≤ 96	> 96		
	(n=38)	(n=10)		
No	35 (65.8)	6 (50.0)	4.227	.039
Yes	3 (34.2)	4 (50.0)		

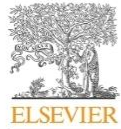
Table 22 : Association between post-operative complication with fear of recurrence

Post-operative complication	QoL fear recurrence		χ^2 test	<i>p</i> -value
	<=75	>75		
	(n=33)	(n=15)		
No	27 (81.8)	14(93.3)	0.3679	.544 (NS)
Yes	6 (1.8)	1 (6.6)		

Conclusion

- OPS can be performed to different age group of patients, irrespective of receptor status, use of NACT, BMI and comorbidity with oncological safety in respect to margin clearance, acceptable post-operative pain and complications and excellent cosmetic outcome in short term.
- It has a positive impact on all aspects of QOL with a high patient satisfaction in respect to body image, fear of recurrence, treatment satisfaction and cosmetic result.

- There is significant association between post-operative complication and body image.
- Preoperative tumour size and post-operative complications are significantly associated with cosmetic outcome after OPS.
- It can be done by trained specialists, with a favourable outcome even in low resource settings in carefully selected patients.



Abstracts for oral presentation at the ABS Conference, 15th & 16th May 2023, ICC Belfast

P037

SHORT TERM OUTCOMES OF ONCOPLASTIC BREAST SURGERY AT A TERTIARY CANCER CENTRE IN BANGLADESH

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Introduction: Oncoplastic breast surgery (OPS) is the preferred approach of treatment for many breast cancer patients with comparable surgical, oncological and survival outcomes. OPS has a huge potential in Bangladesh, but no study has been conducted to date to quantify the surgical, oncological, cosmetic, and quality of life (QoL) outcomes of OPS.

Methodology: This was a prospective study conducted among 48 consecutive patients with breast cancer at National Institute of Cancer Research & Hospital, Dhaka, who met the inclusion criteria for OPS from March 2021 to June 2022. Multiple socio-demographic, tumour, surgical outcome, cosmesis and QoL related data were collected and analysed using SPSS.

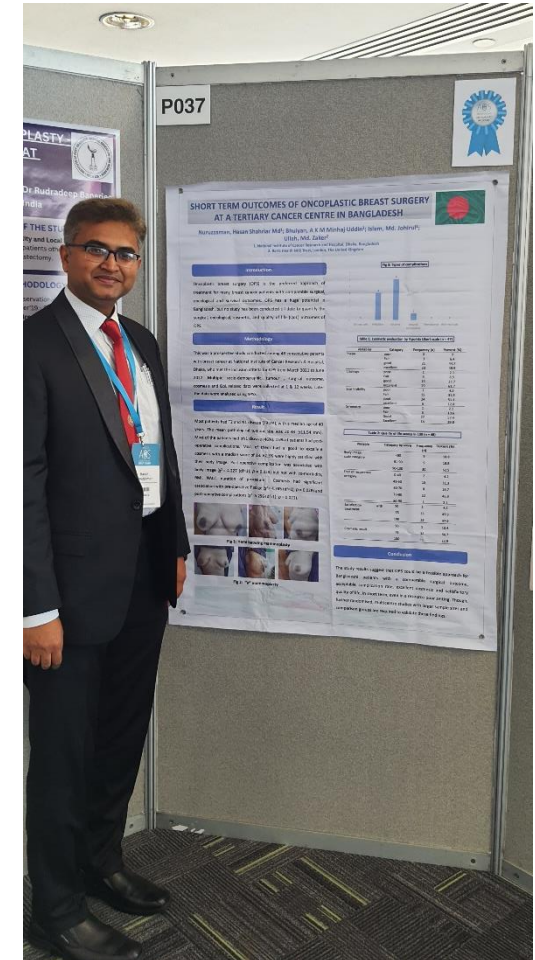
Result: Most patients had T2 and N1 disease (79.2%), with a median age of 40 years. The mean pathological tumour size was 20.38 (11.54 mm). 15% of patients had post-operative complications. Most of them had a good to excellent cosmesis with a median score of 13. 62.5% were highly satisfied with their body image. Post-operative complication was associated with



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body image ($X^2=4.227$ (df=1); $p=0.039$). Cosmesis had significant association with pre-operative T stage ($X^2=4.785$ (df=1); $p=0.028$) and post-operative complications ($X^2=5.296$ (df=1); $p=0.021$).

Conclusion: The study results suggest that OPS could be a feasible approach for Bangladeshi patients with a comparable surgical outcome, acceptable complication rate, excellent cosmesis and satisfactory quality of life, in short term, even in a resource-poor setting. Though, further randomised, multicentre studies with larger sample sizes and comparison groups are required to validate these findings.



Thank you