INTRODUCTION
Breast-conservation therapy with lumpectomy is a valuable component of breast cancer treatment, with an equivalent survival outcome to that of mastectomy. In addition to physical preservation, women who undergo breast conservation have a better view of their body image, are more comfortable with nudity and breast caressing, and might have less adverse physical sequelae from asymmetry, chest wall adhesions, and numbness associated with mastectomy. However, for breast conservation to be effective, surgeons need to remove cancers completely with an adequate surgical margin width and maintain the breast’s shape and appearance. The undertaking of both goals together in the same operation can be challenging, depending on the tumor location and relative size in the breast. If a lesion is large or located in a region that is too difficult to excise without the risk of cosmetic deformity, special approaches to resection should be considered. The value of full-thickness excision with breast-flap mastopexy closure is intuitively apparent. The term oncoplastic surgery is used differently depending on the specialty in which it is being referred. In plastic surgery, the term typically refers to large partial mastectomy combined with a volume replacement technique of partial breast-myo cutaneous flap reconstruction using the latissimus dorsi or transrectus abdominus muscle. In the present study 41 cases of breast cancer underwent oncoplastic surgery using volume...
displacement and volume replacement techniques. Latissimus dorsi flap (L.D. flap) and Transverse rectus abdominis myocutaneous flap (TRAM flap) were used in volume replacement techniques. Aesthetic outcomes were measured by using various parameters at different time intervals.

MATERIAL AND METHODS
This study includes a total of 41 patients who underwent Oncoplastic breast conservative treatment, followed by radiotherapy and postoperative chemotherapy in The Gujarat Cancer And Research Institute Ahmedabad, from 2011 to 2014.

Eligibility Criteria
1. Biopsy proven breast cancer.
2. Early breast cancer

Evaluation All patients underwent a complete history and physical examination. This was followed by mammosonogram, sonogram of abdomen and pelvis, X-ray of chest and trucut biopsy from the mass. If biopsy was done outside our institute a review of the slides was done by our pathologists. The surgery performed was a wide local excision with a level I and II axillary nodal clearance. Reconstruction was done using simple closure, oncoplastic volume displacement and volume replacement techniques post lumpectomy in the same sitting. All the patients were treated with post operative radiotherapy. Adjuvant chemotherapy and hormonal therapy were given as indicated. Postoperatively patients were followed up with 6 monthly clinical examination and mammogram. Followup clinical examination included assessment of cosmesis.

OBSERVATION
This is a non randomized study of 41 patients who underwent breast conservative treatment in our institute.

Table 1: Age Range Distribution

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Number of cases</th>
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<tbody>
<tr>
<td>30-40</td>
<td>16</td>
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<tr>
<td>41-50</td>
<td>13</td>
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<tr>
<td>51-60</td>
<td>6</td>
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<tr>
<td>61-70</td>
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Figure 1: Age Distribution
The most common age group was 30-40 years followed by 41-50 years.

Figure 2: Menopausal Status
25 (61%) patients were premenopausal and 16 (39%) were postmenopausal.

Figure 3: Side
Left sided tumours 21 were more common than right sided cancers in this study.

Quadrant Involved
Aesthetic outcomes of various oncoplastic surgeries

The findings of mammogram was similar to the clinical findings in most of cases. The ultrasound of the abdomen and pelvis and X-ray did not detect any metastasis in any patients. **Neoadjuvant Chemotherapy** Only one patient received neoadjuvant chemotherapy and had good response. She underwent breast conservative surgery thereafter. **Surgery** All the patients underwent BCS which includes lumpectomy with atleast a 1 cm margin (including those who had undergone previous lumpectomy – scar revision was done) along with a level 1 and 2 axillary lymph nodal clearance by either the same or different incision. Five patients underwent MRM followed by TRAM FLAP reconstruction. Only BCS was done in 16(39%), BCS with Latissimus Dorsi myocutaneous flap was done in 14(34%) oncoplastc reconstruction was done in 6 patients.

Sentinal lymph node biopsy was done in 2 patients.

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**Figure 4 : Quadrant Involved**
The most commonly involved quadrant was upper outer quadrant (56%).

**Clinical T Stage:**

The most common T stage was T2 (59%) followed by T1 and T3. No T4 cases were included in the study.

**Clinical Nodal Stage**

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Aesthetic outcomes of various oncoplastic surgeries

Complications Seven patients (17%) developed minimal wound infection which resolved with antibiotics and conservative management. Final Histopathology The final histopathology was infiltrative ductal carcinoma in all the cases. The final staging was done using the AJCC TNM staging system.

PTNM STAGING

TABLE 2 : TNM STAGING

<table>
<thead>
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<tr>
<td>PT1N1M0</td>
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</tr>
<tr>
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<td>PT3N1M0</td>
<td>4</td>
</tr>
<tr>
<td>PT2N2M0</td>
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</tr>
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</table>

Ajcc Staging

The most common stage was stage IIA followed by stage IA Margin Status A gross margin of at least 1cm was aimed at during surgery. The presence of tumour at the margin was considered positive. A frozen section of margin was done in all the cases. The margins were negative in all the patients on frozen sections. No patients required re-excisions. Adjuvant Chemotherapy All the patients received adjuvant chemotherapy. Anthracyclines and Taxans were main component of chemotherapy regimen. No grave adverse events were recorded during chemotherapy. Adjuvant Radiotherapy All the patients were planned to receive radiotherapy in the form of 50Gy in 25# over 5 weeks by external beam radiotherapy followed by boost of 10-15 Gy. Few of the patients among study group are under radiotherapy treatment during follow up and complete assessment of cosmesis is difficult. Hormonal Therapy 17 patients among the study group were ER negative and rest of the hormonal receptor positive patients were started on hormonal therapy as per their menopausal status. Cosmesis All the patients had a photograph taken of their breast post operatively during follow up visits. Cosmesis following breast conservative surgery was decided with regards to the following parameters.

1. breast quadrant with respect to the opposite side
2. nipple symmetry
3. contour maintenance
4. skin pigmentation
5. skin thickening
6. post operative scar healing
7. scar orientation

Figure 7 : Type Of Reconstruction Done
Aesthetic outcomes of various oncoplastic surgeries

8. tender spots
9. heaviness felt
10. patient’s subjective opinion each point was given 0 or 1 point.

The final grade was decided as excellent 9-10 good 6-8 fair 3-5 poor 0-2

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<thead>
<tr>
<th>Axis Title</th>
<th>C0SMESIS</th>
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<tbody>
<tr>
<td>EXCELLENT</td>
<td>GOOD</td>
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<td>FAIR</td>
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**Figure 8: Cosmesis**

Five patients had excellent cosmesis, two with no re-construction, one with oncoplastic re-construction and two with LD FLAP reconstruction. 25 patients had good cosmesis and 11 fair cosmesis. No patient had poor cosmesis. Final assessment of cosmesis requires prolonged follow up. Few of the patients in present study were under radiotherapy treatment hence final assessment of cosmesis was difficult to ascertain in these patients.

**Follow Up** All patients underwent regular follow up at 3 month intervals in the first year and then biannually. Assessment was done during adjuvant chemotherapy and radiotherapy treatment. A complete history and physical examination was done on each visit. No patient in study group developed local recurrence or distant metastasis.

**Figure : Cosmetic Outcomes After Breast Conservative Surgery Using Various Methods**

**DISCUSSION**

**Patients characteristics Age:** The median age of the study population in current study is 38 years. Most of the patients were in 30-40 years age group followed by 40-50 years group. Selection bias, with younger women opting for conservation is also a factor. **Tumour size:** Most of patients who underwent breast conservation surgery are of T2 size. No patient with T4 status was included in this
study. 11 patients had history of lumpectomy, where margin status was not known. Majority of patients were of early breast cancer with young age. 

**Receptor Status:** Most tumor in this study were ER/PR receptor positive. 

**Treatment Modalities Surgical procedure:** Wide local excision with a targeted 1 cm gross margin along with axillary dissection was done. Two patients underwent sentinel lymph node biopsy. Surgical procedure for reconstruction was decided on the basis of tumor breast ratio, previous surgical procedure and location of tumour. Simple breast conservation surgery was done where tumour size was small in comparison to breast volume. Breast reconstruction with oncoplastic volume displacement surgery was done in six cases, where simple primary closure of defect was not giving good cosmesis. Most of the defects were reconstructed using volume replacement techniques (LD flap and TRAM flap). In five cases TRAM flap was used for breast reconstruction, as defect size was very and symmetry with available and majority of patients were not willing to undergo second surgical procedure. 

**Radiotherapy:** External Beam Radiotherapy 50Gy over 25 fractions with a tumour bed boost 10-15Gy was employed. Few patients in study group are still under radiotherapy treatment and final cosmesis is yet to be decided. 

**Adjuvant Therapy:** Anthracyclin based chemotherapy was the main stay of treatment and hormonal manipulation was added as indicated. 

**Assessment of cosmesis** There is no standard way to measure cosmesis, hence a scoring system based on various parameters was used to assess cosmesis. Proper assessment of cosmesis is difficult, it requires prolonged follow up. As changed occurs in reconstructed breast after radiotherapy which takes longer duration to subside. A more liberal use of reconstruction procedure was probably required for better cosmesis. There is also requirement of a standard method to measure cosmesis. Oncoplastic volume displacement techniques require special attention. When tumour size is large, better cosmetic results can be achieved by reducing the opposite volume. Patient must be educated enough to understand the procedure as multiple surgeries may be required for better cosmetic results. In present study oncoplastic volume displacement techniques were not used in most of cases as it requires special plastic surgery assistance and majority of reconstructions were done by operating surgeon himself. In comparison to western world average breast size is smaller in Indian women and they present in advanced stages of disease hence most of them are not suitable for oncoplastic volume displacement reconstruction procedures. 

**CONCLUSION** Breast conserving therapy is a more resource intensive treatment as compared to mastectomy and its outcome depends critically on quality of therapy.  

- Cosmetic outcome are not up to the mark, more liberal use of reconstructive procedure is needed. It is better to involve reconstructive surgeon for better aesthetic outcome.  
- Breast conserving therapy is oncologically safe and its outcome is not inferior to mastectomy. Hence all the patients with early breast cancer have to be counseled regarding this treatment option.  
- Proper counseling regarding prolonged treatment period is essential to reduce the radiotherapy dropout rates.  
- Conservation of patient with locally advanced breast cancer at presentation is feasible provided they are adequately down stage with neoadjuvant chemotherapy. As locally advanced breast cancer( LABC) forms the major mode of presentation in our population it requires a special focus.  
- Judicious case selection, establishment of a scientific treatment protocol, a rigorous adherence to the same and a dedicated team approach are essential to achieve better results.  
- A standard method to measure cosmetic outcomes should be developed.
Aesthetic outcomes of various oncoplastic surgeries

BIBLIOGRAPHY:


