Giant breast fibroadenomas (GFA) are common benign lesions in women <30 years of age. However, such lesions are rare in older women.\(^1\) GFA, larger than 5 cm in size and/or >500 g in weight, usually presents unilaterally and is associated with asymmetry or deformity of the breast.\(^2\) Therefore, surgical removal of the giant breast fibroadenoma is the standard of care.\(^3\) Various treatment modalities have been practiced for giant fibroadenoma of the breast. Just the simple excision of the giant fibroadenoma might lead to asymmetry or deformity of the breast. Simple oncoplastic techniques are better suited to excise GFAs and achieve good aesthetic outcome. Among the oncoplastic techniques, lateral oncoplastic breast surgery (LOBS) was used to remove large invasive breast cancers and phyllodes tumors in the outer quadrants of the breast with an excellent aesthetic outcome.\(^4\)

Flat epithelial atypia (FEA) includes lesions of the terminal duct lobular units wherein dilated acini are lined by one to several layers of columnar epithelial cells. FEA usually indicates low-grade cytologic atypia. It is of uncertain clinical significance but pure FEA patients showed association with cancer in a meta-analysis.\(^5,6\) In this report, we present a case of GFA with focal FEA with no association with cancer, in outer half of left breast managed with modified LOBS with good cosmesis. This work has been reported in line with SCARE criteria.\(^7\)

Case Report

A 42-year-old Tibeto-Burman woman presented with a left breast lump for one and a half years which had increased for last 3 months. Her menstrual cycles were regular and had no known comorbidities. Clinical examination showed...
a 12x8 cm firm mobile tumor in the whole lower outer and lower part of upper outer quadrant (Fig. 1). There was no axillary lymphadenopathy. The bilateral mammogram revealed a dense breast (BIRADS 0). Ultrasonography (USG) showed a well-defined hypoechoic tumor measuring 11x7 cm. Core needle biopsy (CNB) confirmed fibroadenoma with focal flat epithelial atypia (FEA).

The patient underwent left breast lumpectomy and modified lateral oncoplastic surgery under general anesthesia. A peri-areolar skin reduction incision was given (Fig. 1). Subsequently, the skin flap was raised over the tumor around the incision. The lump located deep was completely excised with a big V shaped defect, the apex lying anteriorly (Fig. 2a). The superomedial and inferolateral glandular flaps were then approximated with 3/0 absorbable sutures. The skin was closed with subcuticular sutures without a drain. The excised specimen was sent for histopathological examination (Fig. 2b).

Postoperative period was uneventful. The patient was discharged on second post operative day and followed up at 7 days, one month, 6 months, and then once a year. An excellent cosmesis and symmetry was achieved (Fig. 3). Histopathological examination revealed a marked stromal and epithelial proliferation with proliferating stroma around multiple ducts in a peri-canlicular pattern. Apocrine and myxoid changes were seen at places. Focally glands showed stratification with papillary infoldings. Mild nuclear atypia was also seen. The final histopathological diagnosis was giant fibroadenoma with focal flat epithelial atypia.

**Discussion**

Fibroadenoma is the most common cause of benign breast lumps.\[8\] While fibroadenomas are common and seen between 14-35 years of age, giant fibroadenoma (GFA) defined as size > 5cm or weighing > 500 gms or replaces more than 80% of breast, is less common.\[9\] GFAs account...
for 0.5-2% of fibroadenomas. They appear biologically distinct to usual fibroadenomas with over expression of genes involved in cell growth. The giant fibroadenoma reported in the most elder woman was at 43 years of age. Our case is unique in that it was seen in quite elderly at 42 years of age.

Treatment is indicated for asymmetry, adjacent compression of tissues and ulceration with bleeding. Treatment depends on estimated percentage of breast volume excised (EPBVE). When it is below 10%, simple lumpectomy would suffice but EPBVE >10% requires in addition to lumpectomy some form of volume displacement or replacement oncoplastic breast surgery (OBS). Medial and inferior quadrants of breast are more cosmetically susceptible. Volume displacement techniques are preferred for large, ptotic breasts and can be supplemented with mastopexy or reduction mammaplasty. Various methods are described in literature regarding management of GFA ranging from simple excision to total mastectomy (Table 1).

A glimpse of the table shows a myriad of options to manage GFA. We describe our technique of modified LOBS. LOBS was first described by Singh et al. It is a level 1 OBS technique, was used for managing biopsy proven breast cancer or phyllodes tumor with a mean size of 6.7 cm. It involves biplanar mobilization of fibroglandular breast tissue with margin negative resection and tissue approximation. This technique was modified by Jena and Sinha to excise giant fibroadenoma in outer and central quadrants, with good cosmetic outcome.

Table 1. Literature review of management of GFA

<table>
<thead>
<tr>
<th>Author, published year</th>
<th>Study type</th>
<th>Symptoms</th>
<th>Site</th>
<th>Age of patient/s (yrs)</th>
<th>Size of tumor</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achebe et al, 2014[16]</td>
<td>Retrospective study, 27 patients</td>
<td>Lump with asymmetry</td>
<td>Unilateral (Left or right)</td>
<td>12-25</td>
<td>12-20 cm</td>
<td>Inverted T technique</td>
</tr>
<tr>
<td>Hille-Betz et al, 2015[3]</td>
<td>Retrospective study, 13 patients</td>
<td>Lump with asymmetry</td>
<td>14-31</td>
<td>8.5-12 cm</td>
<td>Inframammary or periareolar excision without reconstruction</td>
<td></td>
</tr>
<tr>
<td>Jategaonkar et al, 2018[17]</td>
<td>Case report</td>
<td>Huge lumps with pendulous breasts</td>
<td>Bilateral</td>
<td>17</td>
<td>63,51 cm</td>
<td>B/L simple mastectomy with delayed reconstruction</td>
</tr>
<tr>
<td>Narayansingh et al, 2017[18]</td>
<td>Case series, 5 patients</td>
<td>Lump</td>
<td>Left, right</td>
<td>13-16</td>
<td>10-13 cm</td>
<td>Periareolar incision with Sawtooth approach</td>
</tr>
<tr>
<td>Hiller et al, 2018[19]</td>
<td>Case report</td>
<td>Lump</td>
<td>Right</td>
<td>30</td>
<td>11.5 cm</td>
<td>Excision with inferolateral pedicle Wise pattern reduction</td>
</tr>
<tr>
<td>Khanal et al, 2019[26]</td>
<td>Case report</td>
<td>Lump with asymmetry</td>
<td>Right</td>
<td>11,16</td>
<td>11,14 cm</td>
<td>Batwing oncoplasty</td>
</tr>
<tr>
<td>Cui et al, 2020[21]</td>
<td>Retrospective study, 10 patients</td>
<td>Lumps</td>
<td>6 right, 4 left</td>
<td>12-32</td>
<td>6-16 cm</td>
<td>Modified round block technique</td>
</tr>
<tr>
<td>Kabuyaya. 2021[22]</td>
<td>Case report</td>
<td>Breast lump with ulceration and bleeding</td>
<td>Right</td>
<td>40</td>
<td>28 cm</td>
<td>Total mastectomy with node sampling</td>
</tr>
<tr>
<td>Jena and Sinha, 2021[23]</td>
<td>Case report, 2 patients</td>
<td>Lump</td>
<td>Left, right</td>
<td>25,28</td>
<td>10,15.5 cm</td>
<td>Modified lateral oncoplasty</td>
</tr>
<tr>
<td>Kitazawa et al, 2022[24]</td>
<td>Case report</td>
<td>Lump</td>
<td>Left</td>
<td>14</td>
<td>8 cm</td>
<td>Inframammary incision with temporary tissue expander</td>
</tr>
</tbody>
</table>
outcome[23] In our case we also modified the original LOBS. While the incision in original procedure was placed along anterior axillary fold extending laterally downwards, we placed a peri-areolar skin reduction incision. The scarring in our technique was minimal compared to original LOBS. Instead of original biplanar mobilization, the superomedial and inferolateral glandular tissue was freed only anteriorly from the skin flap, and approximated minimizing the dead space. Compared to Jena and Sinha, we did not put the suction drain.[23] Postoperative course was uneventful without seroma. Also, a thin rim of skin excision helped remove skin laxity. The bulk and symmetry of breast was well maintained at 1 and 5 years follow up with good patient satisfaction.

Another notable feature in our case was presence of focal flat epithelial atypia (FEA). We did not find other reports reporting FEA in giant fibroadenoma in PubMed database, although there are few studies reporting concomitant usual fibroadenoma. It is a relatively new diagnostic term with wide variation among pathologists in its diagnosis and so the implied risk associated with it.5 Architectural atypia is used to differentiate FEA from ADH or DCIS.[25] In a study by Berry, among 39 patients with FEA and concomitant pathology only one was fibroadenoma. While in 27 cases with pure FEA, 3 had associated DCIS but none were amongst focal FEA group.[26] So it appears that presence of focal FEA makes it less likely that patient harbors carcinoma. A meta-analysis showed 3% rate of invasive cancer in FEA. But it did not differentiate this rate between focal and prominent groups of CNB diagnosed FEA.[8] Our FEA was present concomitant with fibroadenoma without DCIS or invasive cancer. This was assuring and the patient was kept on regular follow up. At 5 years, patient was doing good without any recurrence of new fibroadenoma or carcinoma.

Conclusion
Giant fibroadenoma with focal epithelial atypia is rare and seems less likely to be associated with malignancy. The tumors in outer half of breasts can be managed with simple modified LOBS technique without drain with good cosmetic outcome. Being a level 1 OBS technique, it can be easily performed by general surgeons without any specialized training.

Disclosures
Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.
Peer-review: Externally peer-reviewed.
Conflict of Interest: None declared.

References