A Systematic Review of Breast Cancer Risk in Transgender Patients After Top Surgery

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Background

Approximately 0.5-1.5% of the population identifies as transgender, with an estimated 25 million transgender individuals worldwide. Transgender males are born anatomically female but psychologically identify as male. Many individuals opt to undergo gender reassignment in the form of hormone replacement therapy (HRT) and/or gender surgery. Top surgery is the most common gender reassignment surgery undergone by transgender males. The goal of top surgery is to achieve a masculine chest via removal of breast tissue and excess skin, repositioning and reducing the nipple, removing the inferior mammary fold, and creating proper chest contouring. The risk of breast cancer remains post-top surgery. The transgender population is less likely to seek screening and medical care due to lack of inclusivity and discrimination by healthcare staff.

Methods

Using the PRISMA guidelines, a systematic review identified peer-reviewed articles in PubMed evaluating breast cancer risk in the transgender population after androgen therapy and top surgery. The reported data included:

- Tumor histopathology, hormone status, use of androgens +/- top surgery for gender reassignment, and treatment of oncologic diagnosis (Table 1).

We also compared the incidence of breast cancer in the transgender population to the incidence in cis-gender males and females. Finally, we reviewed current transgender health guidelines.

Discussion

Our literature search yielded 131 articles, 7 of which met the inclusion criteria. A total of 16 cases of breast cancer in transgender patients with a mean age of 45 were observed (Table 1). Invasive ductal carcinoma was the most common reported tumor histology (50% of cases), followed by tubular adenocarcinoma (12.5%). In our review, the tumor histopathology was reported only as ‘breast cancer’ in 37.5% of cases. The majority of cases were ER-positive disease (68.8%), with PR-positive in 56.25% and Her-2 positive in 25% of cases. The majority of patients (68.8%) were using testosterone replacement for gender reassignment therapy, and 37.5% underwent top surgery. Two diagnoses of breast cancer were identified after pathologic examination of the top surgery specimen. The mean follow-up was 8.39 years, reported in 11 of 16 cases identified.

Conclusion

Breast cancer risk persists in transgender patients, regardless of their chosen method for achieving gender reassignment. Given our observations, in addition to education in transgender health care, performing oncologic mastectomy for top surgery may prove to be an important augmentation to an existing aesthetic procedure.

One surgical consideration is that oncologic resections post-top surgery have the potential to be more technically challenging. These patients may present with stage IIB disease and anatomic distortion.

Table 1. Female breast cancer surveillance outcomes. N/A: Not available

<table>
<thead>
<tr>
<th>Year</th>
<th>Study Description</th>
<th>Methods</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Transgender breast cancer surveillance in the Netherlands</td>
<td>Retrospective cohort study</td>
<td>Incidence of breast cancer was lower in transgender patients compared to cisgender women.</td>
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Our data suggest that breast cancer risk is lower in transgender patients compared to cisgender women. However, further research is needed to determine the long-term outcomes of breast cancer surveillance in this population.