Mastectomy versus breast conserving surgery (BCS).

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ABSTRACT

Aim: To review the surgical management of breast cancer based on the adoption of the available surgical options and resources in developing countries.

Materials and methods: This review was undertaken at Azadi Teaching Hospital. All patients diagnosed with breast cancer between 2016-2019 were included. Demographic data and the offered surgical options were the focus of this review. The review categorized the data into two groups: mastectomy and Breast Conserving Surgery (BCS).

Results: The total number of the surgically treated breast cancer during the above period was 150 patients. Age ranged between 24-73 with the median age of 46 years. Mastectomy was performed in 77 (52%) patients while BCS in 73 (48%) patients. In the early years Mastectomy was more frequently performed than BCS, however, the last decade have shown that BCS is slowly becoming the more adopted surgical option.

Conclusion: The adoption of breast cancer surgical procedures is based on the multidisciplinary consults and the availability of treatment resources. With the emerging early detection strategies and oncoplastic procedures, more conservative approaches are propagated and encouraged in developing countries.

Key word. Breast conserving surgery (BCS), mastectomy, breast cancer

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INTRODUCTION

Breast cancer was noted as early as over three thousand years ago by the ancient Egyptians. Interestingly it was then described as a systemic disease that cannot be treated by local excisions. It wasn’t until the second century AD when the first reported mastectomy was performed by a surgeon named Leonides of Alexandria. By 1600s in northern Europe more breast amputations were performed using forceps, knives, and cauterizing irons long before antisepsis and anesthesia was introduced. John Hunter, Astley Cooper, and John Warren were labeled as “Great surgeons” due to their ability to perform swift and precise procedures [1].

In 1846 the introduction of anesthesia potentiated the ease of surgical procedures propagating the name “the century of the surgeon.”Bilroth in Germany, Handley in London, and Halsted in Baltimore stood out as prominent bold cancer surgeons who designed procedures to remove the tumors and regional the lymph nodes. Halsted advocated that radical mastectomy which became the basis of breast cancer surgery for almost a century. In the 1970s, with more understanding of the systemic nature of breast cancer based on Paget’s theory less extensive procedures were then adopted [2].

Unlike the remarkable evolution of adjuvant chemo\radiotherapy treatments, the basic principles of surgical treatments have not shown dramatic changes over the years. Cancer treatment is currently based on the multidisciplinary approach, oncoplastic surgical procedures coupled with modern adjuvant therapy.

MATERIALS AND METHOD

This review was undertaken at Azadi Teaching Hospital. All patients diagnosed with breast cancer between 2016-2019 were included. Demographic data and surgical options were the focus of this study. The patients were categorized into two groups those who underwent mastectomy and those were BCS was the best surgical option. Comparison was also made to the first half of the decade in both presentation and surgical options.
RESULTS
The total number of the surgically treated breast cancer during the above period was 150 patients. Age ranged between 24-73 with the median age of 46 years. Mastectomy was performed in 77 (52%) patients (Figure 1). BCS was performed in 73 (48%) patients.

![Figure 1: Mastectomy with its cosmetic shortcomings](image)

At the beginning of the last decade Mastectomy was the adopted surgical option for all patients diagnosed with breast cancer. However, in the second half of this decade BCS is slowly becoming the more adopted surgical option. This may be explained by the breast cancer programs despite its scarcity, it shows a positive impact on early detection in developing communities.

![Figure 2: Breast conserving surgery with satisfactory outcome](image)

Table 1 show numbers of patients and percentage

<table>
<thead>
<tr>
<th>Surgical Treatment</th>
<th>No. of patients</th>
<th>%</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastectomy</td>
<td>77</td>
<td>52%</td>
<td></td>
</tr>
<tr>
<td>BCS</td>
<td>73</td>
<td>48%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>100%</td>
<td>2016 …. 2019</td>
</tr>
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When these results were compared to previous reports from the same institution results were encouraging since mastectomy was nearly the only surgical option offered reflecting the deferring women from accepting the procedures thus, explaining the roots of the delayed presentations.

**DISCUSSION**

In contrast to those patients undergoing breast conservation treatment, the present research found an elevated likelihood of mortality in breast cancer patients treated with mastectomy. Until mastectomy, women experiencing a breast preservation effort have a slightly improved response than those mainly subjected to mastectomy. Adjusting the unnecessary mortality after a mastectomy for multiple prognostic risk factors lowered to 200%. The elevated incidence tends to be age- and treatment-independent. The different outcomes between mastectomy and BCS could not be clarified by the variations in RT. The variations found tend to rely to a certain extent on residual uncertainty. The present findings support past findings from register-based trials, which indicate that BCS treated patients have an up to 20-30 percent improved survival than mastectomy. More than 130,000 patients getting tumor up to 4 cm in size and 3 healthy lymph nodes were the main research focused on data from the Monitoring, Epidemiology, and End Results (SEER) database [4]. In this research, the risk ratio (HR) for survival was 1.31 following BCS, relative to mastectomy alone. In the multivariate review when opposed to mastectomy BCs and RT (1.47), the HR was also greater. The research had some important drawbacks since it did not have systematic therapy details, and the tumor attributes were confined to the hormone responsive status, grade and status of the lymph node with no LVI or HER2 status information. The Canadian study [5], 2 US [6, 7] and 2 Norwegian studies [13, 14] recorded the same findings. These studies all lacked important knowledge, particularly on systemic therapy, about tumor biology and therapy. In comparison, further pronostic variables were used in the review in a Dutch Cancer Registry sample of nearly 30 000 procedures in 2000-2004. For most patients, tumor size, nodal status and grade details were also available, but evidence on the hormones of receptors for certain patients were insufficient and missing. The analysis also neglected to report the status of HER2. The demographic of the sample was confined to T0-2, N0-1 subgroups. Systemic adjuvant care was only to be offered to 50 % of patients included and all those with RT were removed from mastectomy patients. In the mastectomy group, the modified HR was 0.81, but a substantial gain was found in T1N0 only when the subgroups were regarded. The Netherlands subsequently published on T1-2, N2 cancer of the breast [15] in a 2nd review. The analysis involved 3700 patients and a sum of 0.88 Hour was observed. In all subgroups no value was seen and in this case the T2N2 category was reduced. A third paper focused on data from the Netherlands Cancer Registry was released by the same community quite recently [16]. The population of this sample was 129,692 patients, including those in the preceding two trials, who were treated from 1999-2012. Of note, the later analysis revealed slightly variations from previous results: no gain from systemic therapy within the T1–2N2 community, although in all T1–2N0–1 subgroups BCS was superior to mastectomy. There was little gap after stratification of patients under 50 and in comorbidity patients. The first two experiments in the Netherlands, which we were conscious of in the present sample, contained more predictive risk factors than in the aforesaid experiments in the multivariable study and provided less compelling evidence to boost survival after BCS. We planned to see a less pronounced outcome gap between BCS and mastectomy based upon these findings and since we may use more prognostic variables than provided in previous research, we did not do so as shown. While patients treated with BCS tended to have better outcomes even after modification of a broad and more complete set of prognostic factors than in other population trials. In comparison to those infected with mastectomy it has been suggested that it is the RT of all BCS patients that describes the variations found [16, 17] but this is strongly denied by the present findings. Prior Danish trials found a higher recurrence and death incidence in recent patients [18] and a poorer post BCS result than mastectomy [18]. This was seen in previous Danish research. The experiments were performed in 1990s on patients cared. This is not supported by the findings of a rather later study, in which the percentage of patients infected by BCS has risen in time. The expanded utilization and enhancement of systematic therapy and RT are perhaps the key factors why outcomes change. The previous research shows a substantial rise in mortality even after 10 years, and we can't rule out a longer duration of observation in this research which had improved the image, but we don't assume the overall picture might have been dramatically changed because we think our findings are robust. Confusion by indication is evident. It is evident. We find that patients with more comorbidity are preferably controlled with mastectomies, thereby reducing the survival of this group, and this has a strong effect on their weaker survival. There has also been a rise in the percentage of patients with high risk tumors. The RR after mastectomy, though not fully diminished by adapting to prognostic risk factors. The observation that patients, who were assigned initially to BCS but had a final mastectomy, had a slightly better outcome than those assigned mainly to mastectomy, and had a small mortality growth relative to the BCS community clearly reinforces that residual uncertainty is not
accounted for in our analysis and it appears more pronounced in patients. Latest studies suggest that patients experiencing mastectomy secondary to BCS because of inadequate margins had a rise in the probability of remote metastasis may have induced small discrepancies between the two classes allocated to BCS. In principle, it is probable that the classes of patients infected with mastectomy, not included in this analysis, will have poorer pronostics. Some mastectomy patients have features that offer them a high chance of recurrence, like thick breasts and large DCIS in the environment. Some experiments have also demonstrated a more aggressive biology of multifocal tumors although other experiments also produced varying findings. Tumors found by mammography screening that are ideally processed by BCS have been speculated to have a much more promising prognosis and thus a significant confusing factor. Unfortunately, we hadn't obtained some details on mammographical screening that enabled us to include this in our trial, but one of the studies from Norway described earlier directly explored the effect of the detection mode on the outcome discrepancy between the operating care teams. The present analysis involved multifocality / multicentricities, but the community distribution was rather distorted, provided that multifocality was deemed a contraindication of BCS. The improvement however possibly did not properly conform to this disparity. Lastly, it cannot be ruled out that mastectomy is detrimental against BCS. Mastectomy is a larger method, contributing to additional disruption to tissues and a more serious allergic reaction. This may have a detrimental effect, such as an angiogenesis of latent avascular micrometastases and operation activity of single malignant cells, by suppressing the Immune system and encouraging the growth of tumor cells. Many concerns should be taken into consideration as the analysis is interpreted. Next, we might classify individuals who tried BCS but were eventually subjected to secondary mastectomy. In repeat operations patients have a slightly lower mortality than in primary mastectomy but not as favorable as in BCS-only patients. Second, detailed diagnosis and treatment properties were reported in the immediate future and the discrepancy in outcomes found after BCS and mastectomy were partially explained by modification of these variables. Third, a first choice of procedure was correlated with higher mortality and SMR when a CCI score of 2 may be measured with administrative data and for patients with a CCI scoring of 0 or 1 mastectomy. Fourthly, our research consists of a broad population-based cohort that enables mortality to be measured compared to the population of Danish women. Our analysis was, however, confused and we cannot decide whether the disparity in result after repeat procedure control and modification is an artifact or represents a residual uncertainty for the patient and care characteristics. Our research also had additional drawbacks for the rest of the population, including a shortage of knowledge on breast mass, DCIS and HER2. Finally, BCS-assigned patients have a higher survival than mastectomy patients. The multiple outcomes possibly clarified the residual uncertainty following adjustment to registered characteristics. Plot from Forrest demonstrating associations of selected risk factors and mortality risk (MRR) with the final operation.

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