

The Effect Of The Breast Defect/ Breast Size Ratio On The Cosmetic Outcome In Breast Conserving Surgery

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Abstract

Background: Breast cancer is the most frequently diagnosed and the leading cause of cancer deaths among females worldwide. Breast conserving surgery (BCS) is currently the standard of care for early breast cancer. One of the key determinants for the line of treatment in breast cancer is the size of the tumour in relation to the breast size. The aim of this study is to determine the effect of the ratio of the excised specimen to breast volume on the cosmetic outcome after conventional BCS.

Methods: this is a retrospective study conducted on female patients diagnosed as breast cancer who underwent BCS and whole breast radical radiotherapy at National Cancer Institute, Cairo University. The study included 41 patients with stage I and II breast cancer examined one year after completion of their treatment. Breast volume was calculated using mammography and ratio of the defect to breast volume ratio was calculated. This ratio was correlated with the cosmetic outcome which was assessed using the BCCT.core software.

Results: Thirty six out of the forty one breast cancer patients completed the study. Favorable outcome (excellent + good) was obtained in 52.7 % of patients, while 47.3 % had unfavorable outcome (fair + poor). The mean ratio of the excised specimen volume to the breast volume was 7.2 % in patients having excellent cosmesis, 9.9 % in good, 15.2 % in fair while it was 15.6 % in the poor cosmetic outcome . Breast volume, tumor site, adjuvant treatment and axillary nodal dissection did not seem to be of cosmetic significance. The only statistically significant factors affecting the cosmetic outcome were the specimen volume and the ratio of the specimen to the normal breast volume ($p= 0.006$ and 0.019 respectively). The maximum percentage of breast volume excised after conventional BCS after which unfavorable cosmetic outcome were obtained was estimated to be 14.6 %.

Conclusion: In order to reach a satisfactory cosmetic outcome for conventional BCS, the ratio of the excised to breast volume has to be seriously considered. Other alternative technique including Oncoplasty is an option for Larger excision volumes, to keep both the optimum oncologic and cosmetic outcomes.

Keywords: breast-conserving surgery, oncoplastic surgery, lumpectomy, Ratio of excised to breast volume.