



Long-term quality of life after breast surgery— are breast conserving surgery and mastectomy comparable?

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In a population-based study of long-term quality of life among breast cancer survivors, Diao *et al.* demonstrated an association of mastectomy and reconstruction with worse sexual well-being compared to breast conserving surgery and radiotherapy. Patients older than 65 who received breast conserving surgery and radiotherapy and young patients who received mastectomy and autologous reconstruction reported the highest quality of life scores. Of the 1,215 included patients with breast cancer stage 0–II and a median follow up of 9 years, 631 had received breast conserving surgery and radiotherapy and 584 had been treated by mastectomy and reconstruction. All patients answered paper surveys using BREAQST-Q and Patient-Reported Outcome Measurement Information System (PROMIS). Of the items investigated, including psychosocial well-being, physical function and well-being, upper extremity function, satisfaction with breasts and sexual well-being, only sexual well-being showed a statistically significant difference between the two groups as mentioned above. No difference in overall survival could be demonstrated. However, the use of chemotherapy had a negative impact (1).

With a median follow up of 9 years the authors focused on long term quality of life. This is a very important

aspect of the analysis, because it is known that quality of life changes over time. Short-term analyses demonstrate a better quality of life in patients after breast conserving surgery compared to mastectomy (2). In a recently published study from Germany, patients after mastectomy had an impairment of quality of life shortly after surgery whereas after 24 months it had improved substantially and was even better than in patients after breast conserving surgery (3). Satisfaction after reconstructive surgery also changes over time. While the satisfaction with the body image improves after breast conserving surgery and simple mastectomy, the opposite has been demonstrated for mastectomy and immediate reconstruction (4). These findings underscore the importance of long-term approaches as chosen in the study conducted by Diao *et al.* The main goal of breast surgery for early breast cancer—survival—is always a long-term endpoint. But other endpoints like quality of life and body image also have to be investigated with an adequate follow up, because in a situation with curative intent the next 10 to 20 years do matter.

Age plays an important role in the deterioration of quality of life after breast cancer surgery. While this has been demonstrated for all surgical approaches, the effect is more pronounced after mastectomy (5). In another

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recently published analysis young age was associated with poorer social and sexual function, as well as poorer sexual enjoyment and lower expectations of the future (6). These data demonstrate the importance to include the factor age in all analyses regarding quality of life after breast cancer surgery. The new aspect in the work discussed here is that there is a difference between women younger than 50 and women older than 65 in the long-term quality of life depending on the type of surgery, with younger women being more satisfied with mastectomy and autologous (but not implant) reconstruction and older women with breast conserving surgery and radiation. This result can add a very important aspect in the situation of preoperative counseling.

However, many factors have an impact on the quality of life and this is not always associated with the type of surgery. Thus the interpretation of dichotome results as in the paper of Diao *et al.* always warrants caution.

Some caveats and limitations of the analysis have to be mentioned. The approach of a long-term follow up resulted in a response rate of only 25% and that may have an impact on the results and furthermore as always in long-term observations included patients with techniques of surgery and radiation as well as systemic regimens that are no longer state of the art. Also adding to the possibility of a selection bias is the fact that the indications for mastectomy are not discussed. Maybe the decision for a mastectomy in a situation where it is not clearly indicated represents an attitude towards life that is also mirrored in long-term quality of life?

The authors only included patients after breast conserving surgery and radiation and after mastectomy and reconstruction. In consequence their analysis allow no conclusions regarding simple mastectomy and mastectomy and post-mastectomy-radiation. This has to be taken into account when using the data for preoperative counseling. Furthermore the statistically significant preference for mastectomy in women younger than 50 occurred only after autologous reconstruction and not after implant based reconstruction.

Despite these limitations the publication of Diao and colleagues from the MD Anderson Cancer Center delivered important information regarding the quality of life after breast cancer surgery. Sexual well-being is better in younger women after mastectomy and autologous reconstruction and in older women after breast conserving surgery and radiation. Although these findings are far from leading to a recommendation they can be of use when discussing

surgery with patients who are struggling to find out what their preference is.

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