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Patient-reported aesthetic outcomes in oncoplastic breast surgery compared with conventional breast-conserving surgery: a systematic review and meta-analysis

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Objective: We aimed to compare the aesthetic and surgical satisfaction of oncoplastic breast surgery (OBS) to conventional breast-conserving surgery (CBCS). **Methodology:** This meta-analysis (PROSPERO: CRD42024521223) followed PRISMA and PICO guidelines. PubMed, Embase, Scopus, Web of Science, and Cochrane databases were searched for randomized trials and non-randomized studies comparing OBS to CBCS for female breast cancer patients and reporting outcomes of patient-reported aesthetic results, overall satisfaction, complications, and re-excision. A random-effects model was performed in the R software. Heterogeneity was assessed using I^2 statistics. Continuous and dichotomous data were presented as standardized mean difference (SMD) and odds ratio (OR), respectively. Confidence interval (CI) was defined at 95%. **Results:** A total of 36 non-randomized studies were included, along with 9,453 patients, with 3,578 undergoing OBS. OBS yielded better patient-reported aesthetic outcomes compared with CBCS, notably in satisfaction with breast reconstruction (SMD 0.68; 95%CI 0.126–1.227; $p=0.016$; $I^2=89\%$) and psychosocial well-being (SMD 0.23; 95%CI 0.003–0.459; $p=0.047$; $I^2=49\%$). Physical and sexual well-being showed no significant difference. Overall satisfaction favored OBS (OR 3.08; 95%CI 1.58–6.01; $p<0.001$; $I^2=82\%$), despite higher postoperative complications (OR 1.27; 95%CI 1.003–1.589; $p=0.047$; $I^2=9\%$). There was no significant difference in infections, seromas, and hematomas; however, OBS showed a higher risk of skin/nipple-areola complex necrosis (OR 2.56; 95%CI 1.28–5.11; $p=0.008$; $I^2=0\%$). Regarding the need for a second surgery, OBS had fewer re-excisions (OR 0.46; 95%CI 0.34–0.62; $p<0.0001$; $I^2=45\%$). **Conclusion:** OBS shows better aesthetic and satisfaction outcomes than CBCS, with reduced re-excisions. Nonetheless, postoperative complications require careful evaluation.

Keywords: breast neoplasms; breast-conserving surgery; breast reconstruction; patient satisfaction.