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**Predictors of poor aesthetic outcome after breast-conserving surgery
in patients with breast cancer**

Promotionsfach: Frauenheilkunde

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The aim of this study was to explore features of patients reporting poor aesthetic outcome after simple breast-conserving surgery in order to influence future surgical practices and clinical decision-making.

We prospectively evaluated the data of 709 patients diagnosed with one-sided breast cancer shortly after breast-conserving surgery. Aesthetic outcome was measured by the aesthetic status scores of the Breast Cancer Treatment Outcome Scale (BCTOS) resulting in a score with range 1 to 4 with 1 indicating the best aesthetic outcome. Clinical, surgical, and pathologic variables were assessed in order to identify predictors of poor aesthetic outcome after breast-conserving surgery.

Poor aesthetic outcome, defined as a score of 3,00-4,00 was reported by 46 (6,5%) patients, and 209 (29%) patients reported an intermediate aesthetic outcome, defined as a score of 2,00-2,99. A single factor analysis of variance (ANOVA) showed a negative impact of higher specimen weight on aesthetic outcome ($p < 0,001$). Univariate logistic regression analysis revealed the following significant risk factors for poor aesthetic outcome: 12 o'clock positioning of tumour localisation (odds ratio (OR) 3,33), a tumour behind the nipple areolar complex (OR 6,32), fishmouth-shaped incision with resection of the nipple areolar complex (OR 6,54), quadrantectomy (OR 2,81), central segmental resection (OR 4,80) and pT-stages 3 and 4 (OR 19,91). Bivariate logistic regression analysis indicated statistically independent associations between poor aesthetic outcome and tumour position in the inner half of the breast (OR 2,14) or behind the nipple areolar complex (OR 7,20) and quadrantectomy (OR 3,02).

Poor aesthetic outcome is relatively rare after breast-conserving surgery, but at the same time an important topic for the concerned women and predictable in specific situations. Knowing these predictive factors of suboptimal aesthetic outcome may therefore guide surgical research, may guide the improvement of oncoplastic techniques and may help inform patients about surgical alternatives.