Abstract:
Currently, postoperative outcome analysis in breast augmentation is essentially subjective, and objective evaluation of treatment efficacy is lacking. This study evaluates the influence of anatomic and round implant parameters on breast contour changes after subpectoral breast augmentation using three-dimensional (3D) surface imaging. 3D surface breast scans of 17 patients (34 breasts) undergoing subpectoral breast augmentation with round implants and of ten patients (20 breasts) receiving anatomic implants via an axillary approach under endoscopic assistance or a submammary fold incision were obtained before and 6 months postoperatively. 3D linear distance, breast volume, and surface measurement were correlated with the implanted round and anatomic implant parameters, and the resulting breast shape changes were evaluated. Total breast volume changed in correlation with the implant size (2.4% difference; r=0.894; p=round; p=0.01).
Postoperatively, the IMF dropped by an average of 1.3 cm for round implants and by 1.1 cm for anatomic implants, without relevant differences between the applied surgical incision and the selected implants (p>0.05). Breast projection increased significantly more with anatomic implants (2.4 cm) than with round implants (1.7 cm) (p=0.01). The breast
projection increase was 22% less than expected for round implants and 25% less than expected for anatomic implants based on the manufacturer implant parameters (p<0.01), without essential differences regarding the surgical incision. 3D breast shape changes induced by round and anatomic implants after subpectoral augmentation mammoplasty are objectively documented including breast projection, volume, and N-IMF distance changes. 3D surface imaging may have a potential clinical contribution to objective surgical outcome research. LEVEL OF EVIDENCE III: This journal requires that authors assign a level of evidence to each article. For a full description of these Evidence-Based Medicine ratings, please refer to the Table of Contents or the online Instructions to Authors at www.springer.com/00266.

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