3D BREAST IMAGING FOR COSMETIC BREAST SURGERY: DOES 3D IMAGING IMPROVE PATIENT REPORTED OUTCOMES IN PRIMARY BREAST AUGMENTATION?

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Purpose: Our purpose was to evaluate the impact of 3D imaging during preoperative consultation on patient reported outcomes in primary breast augmentation surgery using the Breast Q. We hypothesized that 3D imaging would facilitate patient education and surgical planning and improve patient reported outcomes.

Methods: We performed a prospective, randomized cohort study of women $\geq$ 18 years desiring elective breast augmentation surgery. The study includes a non-randomized cohort of patients who chose to have standard evaluation and 3D simulation. IRB approval was obtained through Washington University in St. Louis/Barnes-Jewish Hospital. Our intended analysis is for 100 patients to be recruited into the randomized cohort. Patients with greater than grade II ptosis were excluded. A research coordinator performed randomization. Patients were assigned to the control group (pre-operative evaluation with standard simulation with sizers alone) or the intervention group (standard simulation and 3D imaging simulation). Blinding was not possible as 3D imaging simulation was done by the operating surgeon in preoperative consultation. Patients completed the Breast Q before surgery and at minimum 6 months follow up. Standard operating technique was used with subpectoral or dual plane breast implant placement. Breast Q scores were calculated and conventional statistical analyses were performed.

Results: 30 women were examined with: (1) mean age of 37, (2) 93% silicone implants (3) 58% of implants <400 cc and 42% $\geq$ 400cc (4) 63% Allergan and 37% Sientra manufactured (5) 46% anatomic, shaped and 54% round implants. Half were randomized and two thirds were simulated. No significant difference was detected for satisfaction with breasts ($p < 0.52$), psychological well-being ($p<0.91$) or sexual well-being ($p<0.93$). No significant difference was detected for satisfaction with outcome ($p<0.19$) or satisfaction with information ($p<0.74$). There were, however, increasing patient expectations and demand for 3D simulation as a part of the pre-operative evaluation as more patients opted for the non-randomized cohort with increasing time of the study. All 15 non-randomized patients requested 3D simulation.

Conclusions: 3D breast imaging used in preoperative simulation for primary breast augmentation is not associated with improved patient reported outcomes as measured by the Breast Q. However, patients in our practice increasingly expect 3D imaging to be a part of their pre-operative visit and 3D imaging may be a useful marketing tool in building an aesthetic breast surgery practice.