PURPOSE: Although reduction mammaplasty is associated with improved health-related quality of life (HRQoL), surgical treatment for younger patients remains controversial. This study measures complications following reduction mammaplasty in adolescents and young women, and the impact of surgical complications on HRQoL outcomes.

METHODS: Clinical evaluations were performed and the following validated surveys were administered to skeletally mature patients undergoing reduction mammaplasty, aged 12–21 years: Short-Form 36v2 (SF-36), Rosenberg Self-Esteem Scale (RSES), Breast-Related Symptoms Questionnaire (BRSQ), and Eating-Attitudes Test-26 (EAT-26). Subjects completed surveys at baseline and postoperatively at 6 months, 1 year, 3 years, 5 years, and 7 years.

RESULTS: A total of 512 subjects were included (mean age was 17.8 years). Less than one-third of subjects experienced at least one complication, most commonly: hypertrophic scarring, persistent altered breast or nipple sensation, keloid formation, and wound dehiscence. Complication rates did not vary by BMI category, age, or amount of tissue resected. Patients demonstrated significant postoperative improvements in all SF-36 domains (physical functioning, role-physical, general health, bodily pain, vitality, social functioning, role-emotional, and mental health), and on the RSES, BRSQ, and EAT-26. HRQoL outcomes largely did not vary by complication status.

CONCLUSION: Although major complications following reduction mammaplasty are rare in adolescents, minor complications are common. Complication rates in this sample did not vary by BMI category, age, or amount of tissue resected. Providers should be aware of the benefits reduction mammaplasty can provide younger macromastia patients, regardless of complication status.

BACKGROUND: Adolescent breast enlargement can be a deforming, distressing, and disabling condition. Presenting symptoms and complication rates of adolescent breast reduction patients have been reported to mirror those seen in the adult population.1 Compared with their adult counterparts, the adolescent population may display greater rates of obesity and social distress prior to surgery.1 Benefits of breast reduction can include resolution of pain, improved quality of life, extroversion, and emotional stability.2 There is some data to suggest in adults, breast reduction may promote physical activity and weight loss post-operatively.3 There is unfortunately a paucity of literature regarding these types of outcomes for the growing number of adolescents seeking breast reduction or gynecomastia surgery.

METHODS: A retrospective study was undertaken to compare pre- and post-operative BMIs for adolescents undergoing surgery for mammary hyperplasia and gynecomastia over a 13 year period from 2002 to 2015.

RESULTS: A total of 69 females and 64 males were identified. Mean age at time of surgery for females was 17.1 years and 15.6 years for males. This difference is statistically significant (p<0.0001). Average pre-operative BMI for females was 30.7 (SD 6.1) compared to males at 27.8 (SD 6.0). This difference is also significant (p=0.007). Only 20.1% of females had a normal BMI compared to 26.5% who were overweight and 52.9% who were obese. No patients were underweight. For the males, 3.1% were underweight, 31.3% were normal weight, 31.3% were overweight, and 34.4% were obese. Average total tissue resection weight was 1384.5 gm in females and 218.6 gm in males. The correlation coefficients of total resection weight and BMIs was r=0.57 for females and r=0.67 in males. 49.3% of females and 59.4% of males had 6 months or more of post-operative weight data recorded. Of these patients the majority of both females (79.4%) and males (75.7%) remained overweight or obese post-operatively. Comparison of pre-operative versus post-operative BMIs showed no significant differences for females or males (p=0.36 and p=0.15, respectively).

CONCLUSION: The majority of adolescent patients presenting with mammary hyperplasia or gynecomastia requesting surgery are overweight or obese. More than half of females were obese with a BMI >=30 compared to one third of males. Females are more likely to undergo surgery at a later age than their male counterparts. There is a moderate to strong positive correlation between pre-operative BMI and amount of breast tissue removed at surgery. Post-operatively patients who are followed long-term
do not show a significant decrease in BMI with at least three-fourths of both male and female patients remaining overweight or obese.

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CRANIOMAXILLOFACIAL/HEAD & NECK SESSION 5

Outcomes and Complications of Cranioplasty in the Pediatric Population: A Systematic Review

Presenter: Amjed Abu-Ghname, MD

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BACKGROUND: Pediatric calvarial reconstruction is challenging given the unique anatomical and growth considerations in this population. Successful cranioplasty reconstruction using autologous and alloplastic materials have been reported, but a head-to-head comparison in outcomes is lacking. The purpose of this study is to address the knowledge gap in cranioplasty outcomes using currently available materials.

METHODS: A systematic review was performed using the guidelines outlined in the Preferred Reporting Items for Systematic reviews and Meta-analyses (PRISMA). The electronic literature search included Medline/Pubmed, Scopus and Cochrane Databases to identify papers on pediatric cranioplasty from January 1990 to December 2017. Only pediatric cranioplasty studies with a minimum of 1 year follow up with reported surgical site occurrences and cranioplasty outcomes were included. Surgical site occurrences (SSO) and infections (SSI) data among the different materials were abstracted. Outcome data comparing fresh bone grafts, banked bone flaps, Titanium Mesh (Ti), Polymethyl Methacrylate (PMMA), Polyether Ether Ketone (PEEK), and Hydroxyapatite (HA) were analyzed. Surgical site occurrences included seromas, hematomas, wound dehiscences, skin or flap necrosis, surgical site infections, and bone flap resorptions.

RESULTS: A total of 27 studies met the inclusion criteria, encompassing 755 pediatric patients. There were 343 patients that underwent autologous cranioplasty (149 fresh bone grafts and 194 banked bone flaps). Alloplastic reconstruction was performed in 412 patients (211 HA, 110 PMMA, 60 Ti, and 31 PEEK). The mean age ranged from 2.9 to 17.4 years and the follow up time averaged 1 to 10 years. Of all materials evaluated, fresh bone grafts and Ti mesh were associated with the lowest surgical site infections (0.7%, and 3.3% respectively; p =<0.0005) and graft failures requiring reoperation (4%, and 3.3% respectively; p =<0.0001). The lowest surgical site occurrence rates were associated with Ti mesh and HA (6.7%, and 9% respectively; p =<0.0001). Banked bone flaps had the highest rates of surgical site infections (51%; p =<0.0001) and graft failures (40.2%; p =<0.0001). PEEK implants had the highest rates of surgical site infections (16.1%; p =<0.0005). Graft failure rates for PEEK, PMMA, and HA implants were 19.3%, 16.4%, and 7.1% respectively. Fresh bone grafts had lower rate of resorption (7.4%) compared to banked bone flaps (39.7%; p =<0.0001).

CONCLUSION: Based on the available studies reviewed, fresh bone graft reconstruction and titanium mesh demonstrated the lowest surgical site infections and graft failure rates. Banked bone flaps demonstrated the highest overall surgical site occurrences and graft failures. Prospective studies evaluating the efficacy of current cranioplasty materials in the pediatric population are needed.

Patient-Specific Implants for Cranioplasty: Is There an Ideal Implant?

Presenter: Jennifer L. McGrath, MD

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