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**PURPOSE:** Surgical care represents an important source of opioid prescribing and chronic use, but rates of prolonged opioid use following pediatric procedures remain unclear. We describe the rates and risk factors for new persistent opioid use in patients after common cleft operations.

**METHODS:** We examined claims from the Truven Marketscan databases from January 1, 2010 to December 31, 2014. We included opioid-naive patients ages 8 to 25, who underwent one of 12 cleft-related procedures. We included a random sample of similarly aged patients without procedural codes across a similar time period as a control. Included cleft patients had no procedural six months following surgery. All cleft patients filled an opioid prescription during the perioperative period, defined as 30 days before and 14 days after surgery. The primary outcome was new persistent opioid use, defined as prescription fills between 90 and 180 days after the procedure.

**RESULTS:** This cohort included 2,039 cleft patients and 2,100 control patients. The incidence of new persistent opioid use following surgery was 4.4% and 0.1% in the control group. Two soft tissue operations were associated with persistent use: revision palatoplasty (aOR, 4.23: 95% CI, 1.59 - 1127, p=0.004) and major revision of nasolabial fistula (aOR, 4.88: 95% CI, 1.48 - 16.01, p=0.009). Placement of distractors was also associated with higher odds of persistent opioid use (aOR, 4.10: 95% CI 1.67 - 10.05, p=0.002). Increasing age (ages 21–25: aOR, 4.33: 95% CI, 1.87–10.0, p=0.001) and depression (aOR, 2.61: CI 1.01–6.72, p=0.047) were significant risk factors for opioid use more than three months after surgery.

**CONCLUSION:** New persistent opioid use occurs after both soft tissue and bony cleft-related procedures and could lead to chronic use in children, adolescents, and young adults.

K.G. Bennett: None. C.M. Harbaugh: None. H.M. Hu: None. C.J. Vercler: None. S.R. Buchman: None. J.F. Wajee: None.

**QS57**

Normal Metopic Closure Proceeds Similarly Between Different Ethnicities: A Temporal Closure Curve Analysis

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**PURPOSE:** Normal metopic suture closure was thought to be around 2-years-old until studies demonstrated closure around 7-months-old, ranging from 3–9 months. Further, the progression of morphology is unclear and prior studies have shown differing opinions on thresholds for surgery. Clinically, some have noted that different ethnicities may close at different rates. A pilot study performed by our group found that closure rate was similar between races, but may have been underpowered. We examined metopic closure rates in the first 11 months of life for African-American (AA) and Caucasian (CA) babies.

**METHODS:** A retrospective review of non-suture-related head CT scans from 2010–2015 at our academic pediatric hospital was performed. 133 African-American and 133 Caucasian scans from the first 11 months of age were analyzed. The primary outcome measure used was percentage of metopic suture closure. Non-linear regression analysis was performed to develop and compare lines/curves of best fit for each data set.

**RESULTS:** 266 patients were examined: 133 African American and 133 Caucasian babies. For ages 0–9 months, each month contained at least 10 of each ethnicity. Sutures were classified by percentage of metopic closure. The following findings were made from our data set: All patients had fully open sutures in the first two months of age, not all patients had fully closed sutures by 9 months of age, all patients had fully closed sutures by 11 months of age. Non-linear regression analysis found no statistical difference between AA and CA metopic suture closure curves.

**CONCLUSION:** Although it has been suggested that African-American and Caucasian babies may have different temporal closure patterns of the metopic suture, our study shows that overall both groups show a similar rate of normal metopic closure from 0–11 months of age. The temporal closure curve analysis are similar, indicating that normal metopic closure rate is comparable between these groups. This can affect clinical decision-making, such as follow-up timing.

A.Y. Lin: None. K. Tadisina: None.

**QS58**

Indications and Outcomes of Single-Pedicle versus Two-Pedicle and Multiple Simultaneous Thigh Free Flaps in Head and Neck Reconstruction
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PURPOSE: The anterolateral thigh (ALT) free flap is one of the most commonly used flaps for head and neck reconstruction. Given that perforators of an ALT flap routinely arise sequentially from the descending branch of the lateral circumflex artery as it descends down the thigh, a long ALT flap can be more reliably harvested than a wide ALT flap. The purpose of this study is to demonstrate indications and outcomes for single-pedicle ALT free flaps compared to double-pedicle ALT flaps as well as multiple simultaneous thigh (MST) flaps.

METHODS: Our series of 81 consecutive patients undergoing head and neck reconstruction with an ALT flap was retrospectively reviewed. Patients with a composite mandibular defect who underwent reconstruction with both a fibular free flap and an ALT free flap were excluded. Receiver operating characteristics curve analysis was performed to determine our cut-off values for width and length of single-pedicle versus double-pedicle ALT flaps.

RESULTS: Fifty-seven and 18 patients were reconstructed with an ALT flap with one or two pedicles, respectively. Six patients underwent MST flaps. Defect size (width ≥12 cm, length ≥17 cm) for cutaneous defects (p<0.05), the presence of divergent mucosal defects, and through-and-through oral cavity or pharyngeal defects were associated with the use of two pedicles. There was one flap failure of a single-pedicle ALT flap. While operative time was increased for the groups of double-pedicle ALT flaps and MST flaps, there were no flap complications including partial flap loss, venous congestion, or wound healing issues from poor flap perfusion.

CONCLUSION: Harvesting an ALT flap with two pedicles has the potential to reduce flap complications and should be considered for divergent and extremely wide (>12 cm) or extremely long (>17 cm) defects. Our proposed algorithms will help guide flap choice when designing an ALT free flap for a cutaneous and/or mucosal defect of the head and neck.

B.B. Trinh: None. I.E. Rodriguez: None. F.W. Deleyiannis: None.

QS59

Resident Needs Assessment And Development Of A High Fidelity Porcine Model For Autologous Breast Reconstruction

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PURPOSE: The ‘learn as you go’ approach is a common theme in surgical pedagogy but may leave residents with perceived surgical skills deficiencies. Much of the literature on microsurgical education focuses on the execution of the vessel anastomosis while there is a paucity on flap harvest and recipient vessel preparation. The purpose of this study was to perform a needs assessment and pilot a live porcine microsurgical training model for junior residents.

METHODS: Following a didactic lecture given by an experienced microsurgeon, three swine were intubated and prepared according to standard animal ethics protocol at our institution. Five to six plastic surgery residents and a preceptor were assigned to each station. Three surgical objectives were created during this pilot: 1) Prepare the internal mammary vessels (IMVs) 2) Identify perforators to the abdominal tissue 3) Determine if the abdominal tissue should proceed as a pedicled TRAM or free tissue transfer. Eliciting performance while providing real-time feedback was employed to encourage social learning and augment near-peer teaching. Fidelity of the model and utility of the course was tested using an online anonymous survey administered to the resident participants. Self-reported confidence scales were examined for the following skills: IMV preparation, vessel anastomosis, and flap dissection.

RESULTS: Preparation of internal mammary vessels was successfully performed in all three porcine subjects. Bilateral SIEA flaps were performed in Swine #1 and pedicled TRAMs were performed in Swine #2 and #3 due to insufficient deep inferior epigastric vessels. All swine survived the surgical procedures and were euthanized humanely following completion of the training session. Fourteen of the 17 residents responded to the follow-up survey (82.4%). Most residents are ‘very unconfident’ in IMV preparation (n=8, 57.1%), vessel anastomosis (n=6, 42.9%), and flap dissection.

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