Comparison of 30-day postoperative outcomes of open and minimally invasive pyeloplasty utilizing prospective NSQIP-P database

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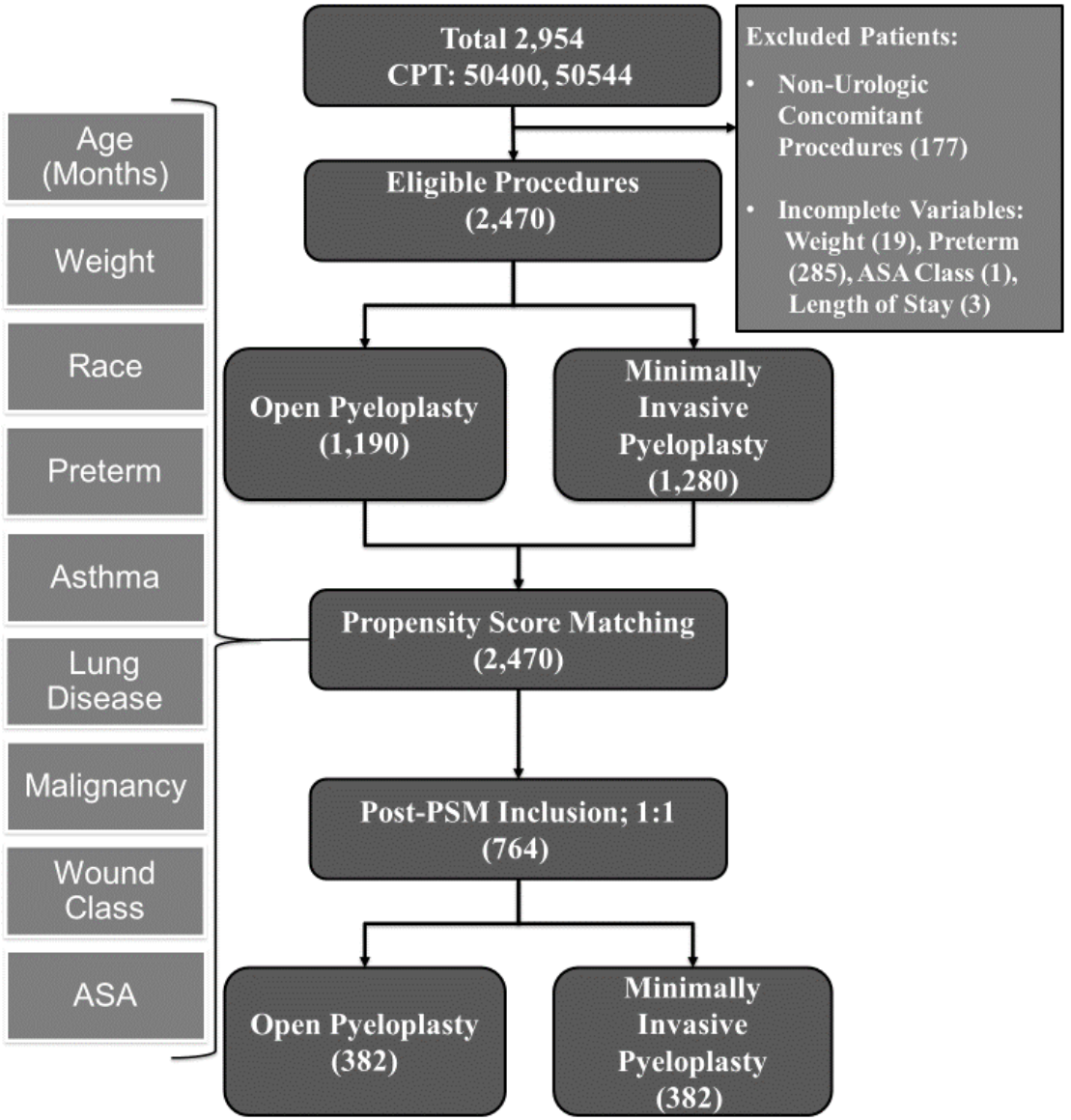
Objective

- Open Pyeloplasty is the gold standard for surgical correction of Ureteropelvic Junction Obstruction
- Improvements in surgical technology have created a pathway for minimally invasive techniques
- **Primary Aim**: To evaluate for differences in 30-day outcomes in pediatric patients undergoing Open and Minimally Invasive Pyeloplasty in a large, population-based cohort
- **Secondary Aim**: To evaluate patient level characteristics for 30-day Readmission and Complication rate between cohorts

Study Design

- ACS NSQIP-P Database; 2012-2017
- Patients <18 Years of Age
- Underwent either:
  - Open Pyeloplasty
  - Minimally Invasive Pyeloplasty
- Propensity Score Matching



Results

- Minimally Invasive Pyeloplasty:
  - Increased Operative Time
  - Increased Procedure-related Readmission
- No Differences:
  - Length of Stay
  - Complication Rate
  - Reoperation Rate

	Minimally Invasive Pyeloplasty (n= 382)	*Open Pyeloplasty (n= 382)*	*p value*
Operative time (min): mean (SD)	192.42 (63.89)	142.00 (61.90)	***<0.001***
Total hospital LOS (days): mean (SD)	1.58 (2.55)	1.63 (1.23)	0.692
Days operation to discharge: mean (SD)	1.51 (2.04)	1.57 (0.90)	0.614
Infection			
Superficial Incisional SSI (%)	0 (0%)	0 (0%)	1
Deep Incisional SSI (%)	0 (0.0)	1 (0.3)	1
Organ/Space SSI (%)	3 (0.8)	1 (0.3)	0.616
Urinary Tract Infection (%)	10 (2.6)	7 (1.8)	0.624
Systemic Sepsis (%)	2 (0.5)	1 (0.3)	1
Wound Disruption (%)	0 (0%)	0 (0%)	1
Pneumonia (%)	0 (0%)	0 (0%)	1
Seizure (%)	0 (0%)	0 (0%)	1
Cardiac			
Cardiac Arrest Requiring CPR (%)	0 (0%)	0 (0%)	1
Bleeding/Transfusions (%)	0 (0%)	0 (0%)	1
Any complication (%)	15 (3.9)	10 (2.6)	0.397
Reoperation (%)	9 (2.4)	5 (1.3)	0.418
Readmission (%)	30 (7.9)	20 (5.2)	0.188
Procedure related readmission (%)	19 (5.0)	8 (2.1)	**0.05**

Conclusion and Limitations

- **Caveats:**
  - Unable to identify “Learning Curve” or “Case Complexity”
  - No long-term data (>30 days) to evaluate success
  - Pain scores and narcotic use was not reported

- Open Pyeloplasty sets a high benchmark for outcomes
- When incorporating new technology and techniques; we need to be cognizant of our outcomes

- Manuscript has been accepted for publication into Journal of Pediatric Urology