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Background. Approximately 3 million pediatric ambulatory surgical procedures are performed each year in the United States; however, little is known about the incidence of and risk factors for surgical site infections (SSI) after pediatric surgical procedures performed in these settings. Therefore, we aimed to describe the epidemiology of SSI in children after ambulatory surgery.

Methods. We conducted a prospective, observational study in a single health-care network with three ambulatory surgical facilities (ASF) and one hospital-based facility. We enrolled children <18 years who had an ambulatory surgical procedure between June 2012 and December 2015. Data on follow-up care were collected via a structured telephone interview (30–45 days post-surgery) and review of the electronic health record (EHR) 60 days post-surgery. We identified SSIs 30 days after surgery by applying 2010 National Healthcare Safety Network (NHSN) definitions. We also developed a broader definition of possible infectious events associated with surgery up to 60 days after surgery.

Results. We enrolled 8,502 surgical encounters; 64% occurred at the hospital-based facility. Three procedure categories (soft tissue excision, hernia, scrotal/testicular) accounted for 56% of encounters at the ASF. We identified 21 NHSSN defined SSIs (2.5 SSIs per 1,000 surgical encounters). In adjusted analysis, there was no difference between hospital-based facility and ASF SSIs rates (P = 0.7). After adjusting for procedure type and broader definition, we identified 404 surgical encounters with strong or some evidence of possible infection (48 per 1,000 surgical encounters). There was poor agreement of possible infections identified via parent interview vs. EHR. In multivariable analyses using the broader definition, older age and black race were associated with a reduced risk.

Conclusion. Using a rigorous surveillance definition, the incidence of surgical site infections was low after pediatric ambulatory surgery although our data suggest there may be additional infectious complications that are not captured by the NHSSN definition. Given the annual rate of pediatric ambulatory surgery, even a low rate of infection may result in a significant medical burden.

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233. Catibacterium acne Surgical Site Infections: Case Series From a University-Affiliated Health Network
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Background. Catibacterium (formerly Propionibacterium) acne, residing on skin, hair follicles, and sebaceous glands, can persist in the dermal layer despite standard surgical skin preparations. Traditionally considered a colonizer, it’s been increasingly recognized as a cause of surgical site infections (SSI). We aimed to gain further clinical insight into C. acne’s role in SSI.

Methods. Study design: retrospective chart review. Study Time: January 1, 2013–December 31, 2017. Study Setting: Three hospitals within University of Wisconsin Health System (UW Health).

Case Definition: all patients with ≥1 postoperative culture positive for C. acne. We defined SSI by CDC criteria, and collected basic demographic and relevant clinical variables.

Results. We identified 77 patients with C. acne postoperative cultures: neurosurgical (61%), orthopedic (17%), cardiothoracic (9%), general surgery (8%), and other surgical departments (5%). Forty-six (60%) of the patients were male. Time from surgery to positive culture was median 24 days (range: 1–670), with >30 days in 36% patients. Infection and colonization were present in 77 and 23% of the patients, respectively. Infected patients were more likely to have wound infection on examination (OR 5.8 [1.4–27.9, P = 0.004]), but had no significant difference in temperature, leukocytosis, or C-reactive protein compared with colonized patients. Additional surgeries for debridement, implant revision, or device re-implantation were needed in 62% of the patients. Length of hospital stay due to SSI was prolonged by median 6 days (range 0–33). Median antibiotic duration was 2 weeks, with 25% patients receiving antibiotics for 26 weeks. Infection outcomes included cure (86%), chronic infection (3%), and recurrence (8%). All six patients with recurrences had neurosurgical infections and did not receive antibiotics after the initial positive culture (infection not recognized).

Conclusion. SSI caused by C. acne are associated with significant morbidity, especially in patients undergoing implant-related neurosurgical or orthopedic procedures. Due to low virulence and slow-growing properties, time to infection may be prolonged, and traditional inflammatory markers may be lacking. Early recognition of infection, while challenging, is crucial to improving postoperative patient outcomes.

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2134. Risk of Surgical Site Infection Following Carpal Tunnel Release in the Operating Room vs. Clinic-Based Procedure Room Within a Veterans Affairs Medical Center
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Background. A clinic-based procedure room (PR) is a less restrictive environment compared with the traditional operating room (OR). PRs are increasingly being used for minor surgical procedures. Carpal tunnel release (CTR) is one of the most common minor surgical procedures in the U.S. Veteran population. It is unknown if there is a difference in the incidence of surgical site infections (SSI) among patients who undergo CTR in the PR vs. OR.

Methods. Patient records were queried using Current Procedural Terminology codes from a single Veterans Affairs Medical Center that underwent clean, elective CTR from October 2014 through April 2017 were reviewed. Demographic and clinical data were obtained through chart extraction. Multivariable logistic regression was used to assess the association between infection and patient demographic characteristics, clinical characteristics, and operating environment. The National Healthcare Safety Network definition for SSI was used.

Results. A total of 312 procedures were included in the analysis; 221 procedures in the OR and 91 in the PR. Mean age was 63 years; 88% male. Sixty-four (21%) smokers, 80 (26%) were diabetic. Mean BMI was 32.9 kg/m². The overall infection rate between OR and PR was 1.9% vs. 2.6%, respectively. Infected patients were more likely to have wound infection on examination (OR = 28.21; CI: 1.84–434.57). CTR performed in the OR had a similar risk for SSI compared with CTR performed in the PR. The mean total 90-day cost was $4,254 as compared with the PR total cost of $417.

Conclusion. The rate of SSI following primary and revision CTR in a high-mortality U.S. Veteran population was 2.88%, much higher than in nonveteran populations with lower morbidity. Other studies have found that pre-procedural optimization of modifiable risk factors such as blood glucose control, smoking status and weight is important. There was no difference in rate of SSI between the OR and PR environments. Revision CTR appears to be higher risk for SSI. A larger sample size is important to validate these findings. Minimally invasive procedures performed in a PR could lead to greater patient satisfaction, access to surgery, higher efficiency, and a 10-fold cost-savings.

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2135. Costs vs. Earnings in Colon Surgery and Coronary Artery Bypass Grafting Under a Prospective Payment System: Sufficient Financial Incentives to Reduce Surgical Site Infections?
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Background. Little is known about actual hospital earnings in patients with and without surgical site infections (SSI) under a prospective payment system. To exemplify respective financial incentives for hospitals to prevent SSI, we aimed to compare hospital costs and earnings in colon surgery and coronary artery bypass grafting (CABG) patients, with and without SSI.

Methods. Based on a national and validated SSI surveillance cohort, we performed a nested financial analysis at a participating tertiary care center in Switzerland. Consecutive patients with colon operations and CABGs from January 2015 through December 2016; and from January 2015 through October 2016, respectively, were included. Co-primary outcome measures were actual hospital costs and earnings under a prospective payment system (SwissDRG), stratified by SSI status. An Assessment of SSI status was performed as part of a standardized follow-up protocol at 1 month and one year after surgery.

Results. In colon surgery (n = 229), the median costs were $68,796 (interquartile range [IQR], $39,600–$95,217) with CABG and $26,256 (IQR, $18,282–$54,230) without SSI (unadjusted P = 0.001; adjusted P = 0.001). In CABGs (n = 433), the median costs were $117,170 (IQR, $57,329–$201,953) with SSI and $48,855 (IQR, $40,053–$67,860) without SSI (adjusted P = 0.001; adjusted P = 0.001). In colon surgery, the median earnings were −$10,738 (IQR, −$31,462 to −$2,223) without SSI and −$2,243 (IQR, −$13,009 to $4,917) without SSI (adjusted P = 0.001; adjusted P = 0.038). In CABG, the median earnings were −$25,050 (IQR, −$54,060 to −$10,882) with SSI and −$2,485 (IQR, −$11,597 to $3,375) without SSI (adjusted P = 0.001; adjusted P = 0.001).

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