Abstract

• Background: The National Healthcare Safety Network (NHSN) reports the pooled mean for appendectomy surgical site infections (SSIs) as 1.15 and 3.47 for risk levels 0.1 & 2.3 respectively. Pediatric appendectomy SSI rates reported in the literature vary from 1.6-20% depending on risk classification. SSI surveillance generally consists of culture review by infection control (IC) supplemented by post discharge infection reporting by surgeons. This method of case finding may underestimate the SSI burden as cultures may not always be obtained & surgeons may not report patients with SSIs seen as outpatients.

• Objective: Describe a comprehensive surveillance process, incidence & stratification of pediatric appendectomy SSIs in a tertiary care children’s hospital.

• Methods: A collaborative effort between IC and the pediatric surgery department was launched to accurately determine the incidence & classification of SSIs in pediatric appendectomy patients. Surgeons supplied IC with a monthly appendectomy case list classified by diagnosis of nonperforated or perforated. IC identified SSIs by review of positive wound/aspirate cultures & surgeon reports from outpatient clinics. Additionally, IC reviewed electronic alerts of all patients readmitted within 30 days of surgery. All SSIs were reviewed with the surgeons for accuracy of classification. SSI rates were determined from 10/2010-2/2013; using NHSN definitions. Overall SSI rate, nonperforated superficial & organ space and perforated superficial & organ space SSI rates were calculated.

• Results: 62 total SSIs indentified: 14.5% (9/62) were nonperforated SSIs & 85% (53/62) were perforated SSIs; of which, 88.6% (47/53) were perforated organ space SSIs. 29/62 infections were diagnosed by clinical symptoms only (purulent drainage, fever, localized pain/tenderness, presence of abscess), as no cultures were performed. Organisms isolated included Pseudomonas aeruginosa (4), Candida albicans (1), Escherichia coli (6), & several gram positive organisms (3). 19/62 SSIs were poly microbial.

• Conclusions: NHSN reported appendectomy SSI rates are underestimated in the pediatric population. Patients presenting with a perforated appendix are at high risk of developing an organ space SSI. Collaborative, integrated surveillance between IC and surgeons is vital to accurate case identification and classification for SSI. Effective interventions to decrease the incidence of deep organ space SSI following perforated appendectomy should be prioritized.

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Summary

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References
