Pediatric surgical site infection

Infection is a major complication following Cerebrospinal fluid shunt procedures for hydrocephalus. However, pediatric risk factors for surgical site infection (SSI) is currently not well defined. Because an SSI prevention bundle is increasingly introduced, the purpose of a study of Shibamura-Fujiogi et al. was to evaluate risk factors associated with SSIs following CSF diversion surgeries following an SSI bundle at a single quaternary care pediatric hospital.

They performed a retrospective cohort study of patients undergoing CSF diversion procedures from 2017 to 2019. SSIs were identified prospectively through continuous surveillance. We performed unadjusted logistic regression analyses and univariate analyses to determine an association between SSIs and patient demographics, comorbidities and perioperative factors to identify independent risk factors for SSI.

They identified a total of 558 CSF diversion procedures with an overall SSI rate of 3.4%. The SSI rates for shunt, external ventricular drain (EVD) placement, and endoscopic third ventriculostomy (ETV) were 4.3, 6.9 and 0%, respectively. Among 323 shunt operations, receipt of clindamycin as perioperative prophylaxis and presence of cardiac disease were significantly associated with SSI (O.R. 4.99, 95% C.I. 1.27-19.70, p = 0.02 for the former, and O.R. 7.19, 95% C.I. 1.35-38.35, p = 0.02 for the latter). No risk factors for SSI were identified among 72 EVD procedures.

They identified receipt of clindamycin as perioperative prophylaxis and the presence of cardiac disease as risk factors for SSI in shunt procedures. Cefazolin is recommended as a standard antibiotic for perioperative prophylaxis. Knowing that unsubstantiated beta-lactam allergy label is a significant medical problem, efforts should be made to clarify beta-lactam allergy status to maximize the number of patients who can receive cefazolin for prophylaxis before shunt placement. Further research is needed to elucidate the mechanism by which cardiac disease may increase SSI risk after shunt procedures [1)].

1)
Shibamura-Fujiogi M, Ormsby J, Breibart M, Warf B, Priebe GP, Soriano SG, Sandora TJ, Yuki K. Risk factors for pediatric surgical site infection following neurosurgical procedures for hydrocephalus: a retrospective single-center cohort study. BMC Anesthesiol. 2021 Apr 21;21(1):124. doi: 10.1186/s12871-021-01342-5. PMID: 33882858.