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Pediatric Neurosurgical Practice Patterns Designed to Prevent Cerebrospinal Fluid Shunt Infection.

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Background/Aims: Various factors have been associated with cerebrospinal fluid (CSF) shunt infection risk, leading to many recommendations intended to reduce that risk. We sought to assess current North American pediatric neurosurgical practice patterns in this regard via a web-based survey. Particular attention was paid to the use of antibiotic-impregnated materials and prophylactic perioperative antibiotics.

Methods: The membership of the section on pediatric neurological surgery of the American Association of Neurological Surgeons and Congress of Neurological Surgeons was invited to complete a survey of current practices intended to minimize CSF shunt infection risk. To be eligible for participation in this study, the respondent had to maintain an active neurosurgical practice within North America and place or revise at least 25 shunts in pediatric patients (<21 years) per year. Responses to the questionnaire were then analyzed.

Results: A total of 100 responses were analyzed. All respondents were familiar with antibiotic-impregnated shunt catheters, and 61 of 100 had actually used them. Eleven of 61 respondents use them universally, 20 of 61 in >50% of cases, and 30 of 61 in <50% of cases. Antibiotic-impregnated suture material was known to 59% of respondents, of whom 28% (14 of 59) reported having actually used antimicrobial suture. All respondents use perioperative intravenous antibiotics with vancomycin, first-generation cephalosporins, and then second-generation cephalosporins being the most common. Routine use of intraventricular antibiotics was reported by 27%. An assessment of surgical techniques revealed that 90% limit shunt contact with patient's skin, 62% use the double-gloving technique, 45% handle shunt components only with instruments, and 34% use an antiseptic shampoo preoperatively.

Conclusion: Our survey reveals a wide range of practices intended to prevent shunt infection and captures, in particular, current trends in the use of antibiotic-impregnated materials and perioperative antibiotics for CSF shunting procedures.

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