**Guilherme Gago, MD – Médico Residente de Neurocirurgia – Hospital São José – Irmandade Santa Casa de Misericórdia de Porto Alegre (ISCMPA)**

**Frederico Gibbon, MD – Médico Residente de Neurocirurgia – Hospital São José – Irmandade Santa Casa de Misericórdia de Porto Alegre (ISCMPA)**

**Luan Dias – Acadêmico de Medicina – Universidade do Vale do Rio dos Sinos (UNISINOS)**

**Paulo Valdeci Worm, MD, PhD – Chefe do Serviço de Neurocirurgia do Hospital São José, Irmandade Santa Casa de Misericórdia de Porto Alegre (ISCMPA)**

**Background**: Ventriculoperitoneal (VP) shunt infections is a relatively common complication. However, conventional cultures have a suboptimal positivity rate. Sonication is a complementary method that aims to assist in the identification of microorganisms retained within the biofilm. This biological communities of microorganisms organized in a self-produced matrix of extracellular polymeric substances (EPS), sometimes, prevents the isolation of etiological agents through traditional cultures.

**Objective**: Methodologically demonstrate that the use of sonication in patients undergoing neurosurgical procedures for suspected VP shunt infection at Hospital São José increased the identification of etiological agents when compared to CSF culture and ventricular catheter conventional culture.

**Method**: Patients who were individually submitted to revision surgery for suspected VP shunt infection were retrospectively analyzed during the period from 2021-2022. Materials collected by the neurosurgical team were submitted to different culture methods, including CSF culture, conventional ventricular catheter tip culture and sonication. The variables analyzed were sex, age, comorbidities, previous antibiotic therapy, other known infectious sites and the cultures, these being: CSF (Cerebrospinal Fluid) culture, culture of conventional catheter, culture of surgical wound secretion and culture with sonication.

**Results**: 72 patients underwent VP shunt during the period. Of these, 7 underwent revision surgery due to suspected infection. Two cases underwent revision surgery for late shunt infection. We evaluated a total 09 patients. In CSF cultures 22.2% showed bacterial growth, while in ventricular catheter culture without sonication there was no growth (0%) and with sonication, 66.6% of samples showed growth. Of the 6 positive cases after sonication there was growth of 8 etiological agents. Coagulase-negative staphylococci was the most common bacteria.

**Conclusion**: Sonication was superior to other methods in detecting the infectious agent. This is an important complementary method in the process of diagnosing implant-related infections.