G43 Fatal Latrogenic Pseudomonas Aureginosa Meningitis After Epidural Anesthesia: A Case Report

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After attending this presentation, attendees will become familiar with the risk factors associated with iatrogenic meningitis, as well as the proper approach to follow by the forensic pathologist.

This presentation will impact the forensic science community by emphasizing the importance of: (1) a thorough investigation in potential infection-associated fatalities: and, (2) surveillance for infections in medico-legal cases.

Case report: A 22-year-old pregnant woman at her 35th gestation week was admitted to the hospital after spontaneous rupture of membranes. She had a past medical history necrotizing faciitis during childhood and a previous episode of meningitis. An emergency cesarean section was performed due to failed labor induction. Epidural anesthesia was placed at this time. The baby was born with low Apgar scores and was taken to the intensive care unit (ICU). The patient was discharged three days later and soon developed headaches, agitation, and altered mental status. A lumbar puncture performed at the ED showed a very elevated white blood cell count on her cerebrospinal fluid (CSF). She was admitted to the ICU, where she had rapid decrease in consciousness, and erratic breathing, and needed to be intubated shortly thereafter. A magnetic resonance imaging (MRI) showed severe cerebral edema, suggestive of meningitis. CSF cultures grew Pseudomonas aureginosa. A ventriculostomy was performed; her condition continued to deteriorate to the point where there was no sign of brain activity. The family withrew care and she was pronounced dead.

Autopsy revealed bacterial meningitis with fibrinoid necrosis and multiple intraparenchymal microabscesses. Postmortem CSF cultures were negative for Pseudomonas aureginosa

Latrogenic meningitis, along with epidural abscess and vertebral osteomyelitis, are rare but clinically important known complications of spinal anesthesia. Some of the potential patient-associated risk factors to develop meningitis after spinal procedures include: bacteremia; diabetes; immunodeficiency; alcoholism; chronic renal failure; malignancy; and, spinal trauma. Other described causes include: poor antiseptic technique; starch powder from gloves; and, aerosolized oropharyngeal secretions from medical personnel.

Almost half the cases of postdural puncture meningitis are caused by Streptococcal species. Pseudomonal species are an infrequent cause of meningitis and occur almost exclusively as a nosocomial infection.

Clinicians should maintain a high index of suspicion in a patient with altered mental status that has undergone spinal anesthesia, since early diagnosis is key to a successful treatment regimen. Equally important is to follow strict aseptic techniques during all spinal procedures.

Being a preventable entity, each case of potential iatrogenic meningitis should be investigated thoroughly by the forensic pathologist with specific inquiry regarding the circumstances surrounding the death, and postmortem CSF cultures as to try to elucidate a specific cause.

Only a minority of deaths due to infections fall under the jurisdiction of medical investigators. This makes communication between forensic pathologists and clinicians essential because the sentinel case of an outbreak can often be detected at a medical examiners office.

Surveillance for infections in medico-legal cases is of utmost importance for medical examiners; it can frequently help achieve an organism-specific diagnosis, and may also identify potential high risk populations.

Meningitis, Pseudomonas, Epidural Anesthesia

 ** Presenting Author*