



### **G16 Sudden Death From Aggressive Pansinusitis and Pituitary Abscess With Clinical Features Suspicious for Intracranial Trauma**

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After attending this presentation, attendees will be aware that severe pansinusitis can lead to pituitary abscesses that can be rapidly fatal and have clinical features suggestive of intracranial trauma. This presentation will impact the forensic science community by describing a rare, fulminant natural disease process that was initially suspicious for trauma.

Pituitary abscesses are rare lesions that are usually confined to the pituitary gland and can be found arising from other pituitary lesions. They can infrequently occur from direct extension of severe or chronic bacterial and fungal sinusitis. They are usually associated with chronic or indolent headaches and facial pain that leads the patient to seek treatment, but they can be rapidly progressive with systemic manifestations resulting in sudden death.

**Case Description:** The decedent was a 38-year-old male with a past medical history of sciatica and morbid obesity who was found unconscious at home by a co-worker after not appearing for work. He had not complained of any headache, facial pain, or ear pain the night prior; however, he had consumed a large amount of alcohol and taken prescription pain medication that night.

After transportation to the hospital, traumatic head injury was suspected because of diffuse soft tissue swelling involving the left side of his face and head and rust-colored drainage from his left ear and nose. A Computer Tomography (CT) scan of the head found no overt trauma but did show opacification of the left external auditory canal associated with marked soft tissue edema. The paranasal sinuses also had mucosal thickening, mild opacification, and air fluid levels. A Magnetic Resonance Imaging (MRI) scan performed a few hours later showed extensive soft tissue edema and newly developed opacification of the bilateral mastoids and middle ear spaces. There was also a marked increase of the paranasal sinus opacification, mucosal thickening, and fluid levels in comparison to the earlier CT images. The opacification in the posterior sphenoid sinus abutted the anterior sella turcica with focal destruction of the bone. Diffuse cerebral edema with cerebellar tonsillar herniation and global hypoxic-ischemic injury was identified. Although his condition stabilized, he had suffered a global cerebral insult eventually culminating in brain death.

The case was referred to the medical examiner due to continued concerns about possible trauma because of the rust-colored drainage being suspicious for possible blood issuing from the left ear and nasal passages and because of the acute decompensation.

The major findings at autopsy included thick yellow-pink purulent discharge from the left ear and nares. The left side of the face and head had diffuse soft tissue edema, and an eight by six centimeter (cm) erythematous and purulent ulceration involved the left preauricular area with extension into the external ear canal. The sphenoid bone was dissected to reveal purulent, mucoid material filling the paranasal sinuses consistent with pansinusitis. The purulence and necrotic debris extended into the sella turcica raising the concern of a pituitary abscess. This was confirmed histologically by acute inflammation and marked necrosis involving the majority of the pituitary gland. Thin tan-yellow purulent fluid drained from the middle ear when the petrous portion of the left temporal bone was removed. Multiple bacterial and fungal cultures were performed but did not isolate a causative organism. No intracranial trauma was present.

The autopsy was able to confirm that the decedent suffered from a rare, fatal, natural disease consistent with rapidly progressing pansinusitis leading to a pituitary abscess and severe sepsis. This case illustrates the importance of pituitary examination at autopsy, particularly in the setting of sudden death and severe sinusitis.

**Pituitary Abscess, Sinusitis, Sudden Death**