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## Irrigation for cerumen removal causing meningitis – case report

### Abstract

**Introduction:** Cerumen impaction is a common problem seen in primary care clinics. There are a variety of methods to deal with impacted cerumen including water irrigation but meningitis after water irrigation cerumen removal has not been previously reported.

**Methods:** We describe the case of a 59-year-old female with otitis media who developed meningitis with empyema after water-jet irrigation for impacted cerumen.

**Results:** Our patient presented 24-hours after water-jet irrigation for impacted cerumen with worsening headaches. Workup included positive CSF cultures and empyema on MRI consistent with meningitis. She also had ear drainage from the treated ear which was positive for multiple organisms. Neurologically she deteriorated in the short term but began to improve with intensive intravenous treatment. She was treated with six months of intravenous antibiotics and transitioned to further treatment with oral antibiotics as her laboratory testing and imaging improved. She showed ultimate resolution of labs, imaging and neurologic findings, returning to baseline.

**Conclusion:** We report the first case to our knowledge of meningitis after water-jet irrigation for impacted cerumen. We recommend care when treating impacted cerumen in patients with underlying otitis media as there may be a risk for meningitis in certain circumstances.

### Keywords

Cerumen impaction, meningitis, cerumen removal

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## Irrigation for Cerumen Removal Causing Meningitis

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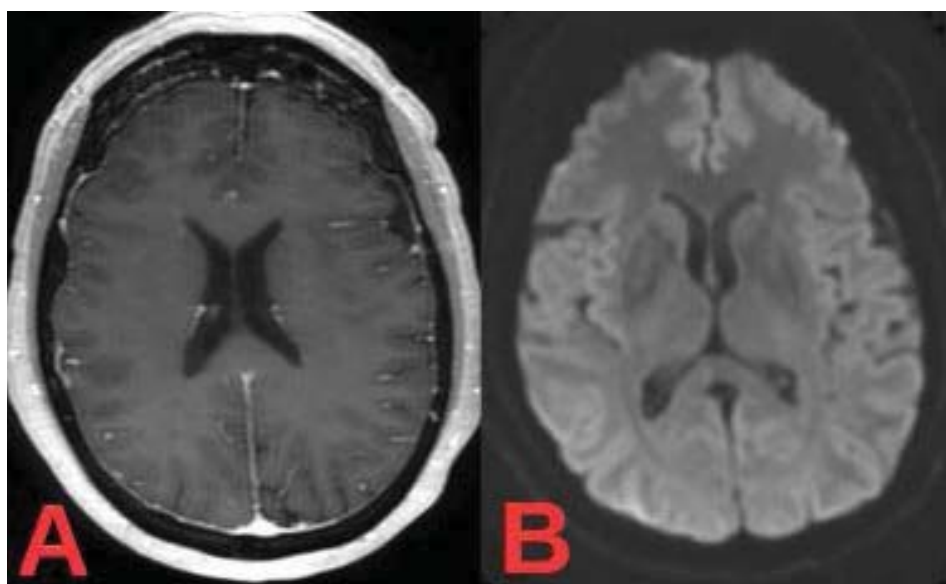
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A cerumen impaction occurs when cerumen builds up to a degree to cause pain or interfere with hearing. Impacted cerumen is a relatively common problem with an estimated prevalence of 2-6% of the population affected.<sup>1</sup> There are over 12 million office visits per year in the United States for cerumen removal.<sup>1</sup> Many methods of cerumen removal are available including cerumenolytic agents, irrigation, manual removal, and others.<sup>1,2</sup> Complications of cerumen removal include failure to remove cerumen, pain, ear injury, acute otitis externa, tympanic membrane perforation and vertigo.<sup>1,3-5</sup> Cerumen removal complications, which require expertise care are rare, affecting only approximately 0.26% of cases of cerumen removal.<sup>6</sup>

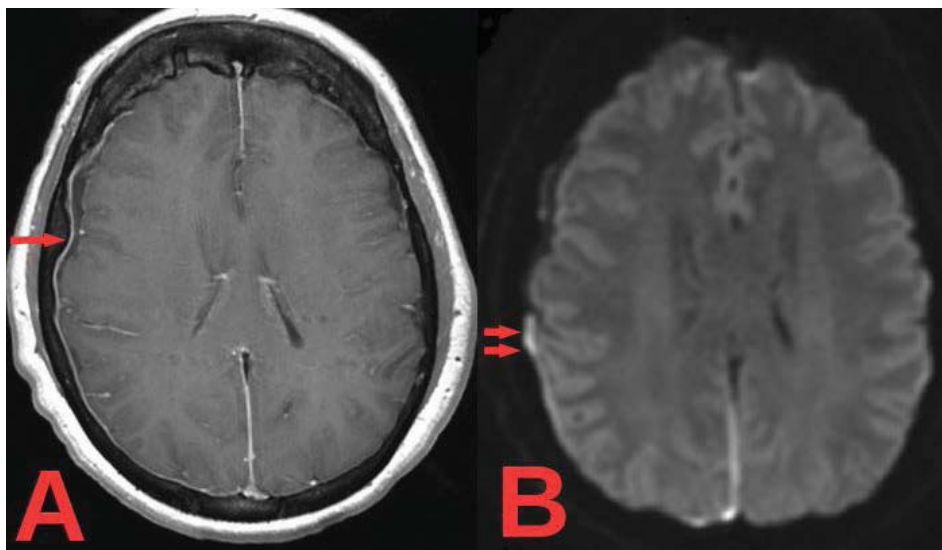
Here we present images of a patient who had sinusitis and cerumen impaction and developed meningitis after cerumen removal with water jet irrigation (Figures 1-3). The patient was treated with six months of intravenous antibiotics and transitioned to further treatment with oral antibiotics as laboratory testing and imaging improved. The patient showed ultimate resolution of labs, imaging, and neurologic findings, returning to baseline. We recommend care when treating impacted cerumen in patients with underlying otitis media as there may be a risk for meningitis in certain circumstances. ■



**Figure 2.** Sagittal CT right temporal bone with possible defect in superior middle ear (arrow).



**Figure 3.** (A) T1 with contrast and (B) diffusion restriction showing resolution of the subdural empyema.



**Figure 1.** (A) T1 with contrast showing subdural fluid with contrast enhancement (arrow) and (B) diffusion restriction of the fluid (double arrow).

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