

IMAGES OF EMERGENCY MEDICINE**Dermatology****Man with ear injury****Thomas Liu MS, DO | Dulaya Santikul DO | Matthew Meigh DO**

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Email: tliu@garnethealth.org**1 | PATIENT PRESENTATION**

A 61-year-old male presented to the emergency department (ED) for bilateral ear pain for 3 days. At the time of injury, he was working as a maintenance worker cleaning pipes in a chicken pen. While cleaning, he accidentally dropped his earphones into his cleaning solution container. He wiped off the earphones and placed them back in his ears. He stated that this caused a sharp pain.

The patient developed difficulty hearing bilaterally the next day. By the third day, he was not able to completely hear from his left ear, which prompted him to visit the ED.

**FIGURE 1** Left ear showing the eschar appearance and inner ear involvement**FIGURE 2** Right ear also showing eschar appearance**2 | DIAGNOSIS****2.1 | Chemical ear burn**

Physical examination showed both ears had an eschar-like appearance surrounding the external auditory meatus. (Figures 1 and 2). The inner canal of the left ear also had a similar eschar appearance with thick yellowish drainage. A small portion of the tympanic membrane

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was visualized and appeared erythematous. The right inner ear was unaffected.

Otolaryngology consultation was made, and recommendations included transfer to a tertiary care center for likely ear debridement and left external auditory canaloplasty. Ear burns secondary to jet fuel and welding processes have been described in the past.^{1,2} However, chemical burn by acids to the inner ear is uncommonly reported.³ Burn by acid brings about coagulation necrosis by having hydrogen ions interact with proteins and inducing tissue necrosis.⁴ Formation of an eschar appearance is characteristic of acid burns.

Careful examination is needed to ensure if the inner ear is involved because surgical intervention is usually needed.

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