CASE REPORT

Delayed-onset Pseudomonas infection manifesting as pain

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Key words: chondritis; delayed infection; Mohs micrographic surgery; Pseudomonas.

INTRODUCTION
The overall infection rate after Mohs micrographic surgery (MMS) is low, with 1 study estimating it to be 3.2% for sutured wounds and 6.8% for second intention wounds.1 Risk factors for infection after MMS include malnutrition, older age, diabetes, immunosuppression, and extensive inflammatory skin disease.2 Surgical sites on the ears, lower extremities, and lips are considered high-risk sites for postoperative surgical site infections.2 In a study of positive culture findings following MMS, infections were most commonly caused by Staphylococcus aureus (45.4%) and Pseudomonas aeruginosa (10.8%), along with other gram-positive and gram-negative species.3 To our knowledge, no cases of delayed infections of the ear have been reported following MMS. Herein, we present 2 such cases of delayed (>30 days) P aeruginosa infections after MMS on the ear.

CASE REPORTS
Case 1
An 89-year-old man underwent MMS for a primary nodular basal cell carcinoma on the lower portion of his left antihelix. Two stages were required to obtain clear margins, and the defect was repaired by partial intermediate closure. The area, measuring 2 × 2.4 cm, was allowed to heal by secondary intention (Fig 1). The patient returned to the clinic 2 months later. His ear was painful on touch and was bleeding. There was a tense bulla at the root of the helical crus (Fig 2). The culture of a swab specimen showed P aeruginosa, and he was prescribed ciprofloxacin. Two weeks later, he reported no more pain or bleeding at the site. He did not have a history of diabetes, immunosuppression, or smoking.

Case 2
An 81-year-old man underwent MMS for a primary squamous cell carcinoma of the posterior aspect of the superior portion of the helix. He had a history of renal insufficiency but no history of immunosuppression, diabetes, or smoking. Clear margins were obtained after 2 stages. The final wound dimensions were 2.5 × 1.4 cm (Fig 3). The wound was allowed to heal by secondary intention.

The patient came to the clinic 2 weeks later to have his wound checked. At that time, the wound was fully granulated, and he did not have any symptoms of infection. However, 2 weeks later (1 month after MMS), he returned to the clinic with new-onset pain with tenderness, drainage, and a new anterior papule (Fig 4). A swab specimen and biopsy were obtained for evaluation. The swab finding was positive for P aeruginosa, and pathologic findings showed an ulcer with granulation tissue and gram-negative bacilli. The patient was given ciprofloxacin, and the wound healed appropriately.

DISCUSSION
These 2 cases demonstrate that new-onset pain and drainage even months after MMS can signify a P aeruginosa infection. Both cases occurred on the ear,

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and it is known that the ear is a high-risk site for postoperative infection. Rates of postoperative chondritis after MMS have been reported at 5.6%, with most symptoms noted during the first postoperative week. P aeruginosa colonization of the surgical site can increase the risk of postoperative chondritis, and the risk increases when MMS extends to the cartilage. However, rates of postoperative infection of the ear are still low, even when perichondrium is exposed during secondary intention healing.

Mailler-Savage et al described the use of fluoroquinolones as an adjunct to MMS on the ear, with the most widely accepted belief that antibiotic prophylaxis is not necessary to prevent postoperative infections. When postoperative P aeruginosa infections do occur, treatment is imperative to prevent malignant otitis externa.

Delayed infection at a site of MMS is rare; however, infection with Mycobacterium abscessus has been reported. To our knowledge, delayed-onset Pseudomonas infections have not been reported in the dermatology literature, although they have been reported after ophthalmologic surgery. In both of our cases, the delayed infections occurred in older patients after secondary intention healing. Therefore, it may be prudent to discuss the possibility of delayed infections, even weeks after surgery, with patients who have secondary intention healing after MMS on the ear. In conclusion, Pseudomonas infection should be
considered when patients have new-onset pain after MMS on the ear.

Conflicts of interest

None disclosed.

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