Journal of Dental Sciences 20 (2025) 1328–1330

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journal homepage: www.e-jds.com

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Severely swollen upper lip associated with methicillin-resistant *Staphylococcus aureus* infection

KEYWORDS
Lip;
Cellulitis;
Methicillin-resistant *Staphylococcus aureus*;
Infection;
Antibiotic resistance

Acute lip swelling can arise from infections, reactive responses, cystic lesions, neoplasms, or systemic diseases.[1] Delayed or ineffective treatment of the lip could lead to long-term aesthetic and functional complications. Methicillin-resistant *Staphylococcus aureus* (MRSA) can cause various skin and soft tissue infection; however, severe lip involvement is exceedingly rare. Knowledge related to its treatment and prognosis is very limited. Therefore, we would like to present a unique case of MRSA-related lip cellulitis and its management.

A 73-year-old male with a medical history of anemia presented to our emergency department with significant upper lip swelling that had progressively worsened over 5 days. He was afebrile and slightly hypertensive, but he felt well overall despite the swelling. Physical examination revealed erythematous swelling with dark scabs, deep ulceration, and suppurative fistulas (Fig. 1A–C). Laboratory tests showed elevated C-reactive protein (16.23 mg/dL) and serum creatine (2.49 mg/dL). The patient denied any allergies, recent medications, trauma, insect bite, or travel history. The preliminary diagnosis was non-odontogenic lip cellulitis with impaired renal function. Under local anesthesia, the fistula was enlarged with a hemostat. The abscess was drained, and a Penrose drain was inserted. Pus and blood were collected for culture analysis. Empirical treatment with amoxicillin-clavulanate was initiated.

Three days later, the swelling become more diffused and highly inflamed (Fig. 1D–E). Culture came back positive for MRSA. Based on the antibiotic sensitivity test, the patient was treated with oral levofloxacin 750 mg daily and clindamycin 300 mg every 6 h for two weeks. The swelling resolved within 14 days (Fig. 1F), and the wound healed one month later (Fig. 1G). Although the patient was pleased with the results, a depression was observed at the middle of the vermilion border of the upper lip. The renal function also returned close to normal. No recurrence was reported in the subsequent visits.

S. aureus-related lip swelling was rarely reported. Previous case reports often described it as an edematous and erythematous swelling, resembling angioedema or an anaphylactic reaction.[2–4] Occurrence in the lower lip was more frequently reported.[1–4] The current case featured prominent eschars, deep ulcer and yellowish blisters on the upper lip, distinguishing it from previous cases. Multiple

https://doi.org/10.1016/j.jds.2025.01.015

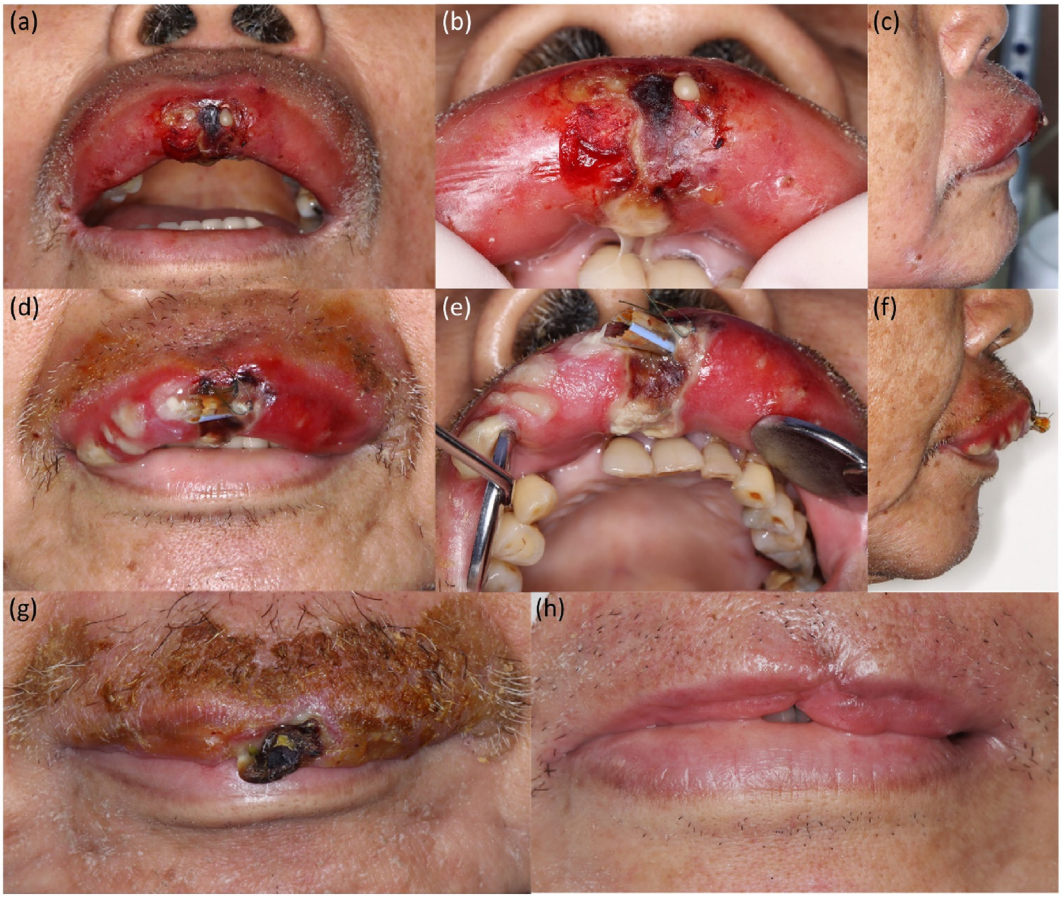

Figure 1 Clinical photographs of our patients. (A—C) Clinical manifestation at the emergency department. The photographs were taken from the frontal view, inferior view, and lateral view. (D—F) On the 3-day follow-up, the swelling spread bilaterally and became more severe, especially on the side without a drain. The photographs were taken from the frontal view, inferior view, and lateral view. (G) On the 17-day follow-up, the swelling had subsided. (H) On the 35-day follow-up, the lesion had completely healed. However, a small depression was noted at the middle of the vermilion border of the upper lip.

comorbidities, compromised immunity and minor lip wounds, such as scratches, laceration wounds, and lip dryness are potential risk factors.[2,3,5] Antibiotics combined with surgical debridement or drainage is often employed to treat such cases, depending on the location, extent, and depth of the infection.[1—5] However, due to the antibiotic resistance of certain bacterial strains, the empirical antibiotic treatment was ineffective in our case, emphasizing the importance of early culture analysis and sensitivity testing. In addition, surgical manipulation of the lip should be done with caution, to minimize nerve damage or esthetic problem.

The present case described the treatment of a severe MRSA-associated lip cellulitis, which resulted in a favorable clinical outcome. It highlights the importance of culture-guided therapy for unusual lip infections to aid diagnosis and proper antibiotic selection. Surgical drainage should be considered for extensive lip swelling. Further clinical investigation on the treatment of MRSA-lip cellulitis should be conducted.

Declaration of competing interest

The authors have no conflicts of interest to declare regarding this article.

Acknowledgments

None.

References

1. Ghafoor M, Halsnad M, Fowell C, Millar BG. Impetigo presenting as an acute necrotizing swelling of the lower lip in an adult patient. *Oral Surg Oral Med Oral Pathol Oral Radiol* 2012;113:e22—4.
2. Lucerna AR, Espinosa J, Darlington AM. Methicillin-resistant Staphylococcus aureus lip infection mimicking angioedema. *J Emerg Med* 2015;49:8—11.

3. Yedikian T, Lescott C, Rego E, et al. Methicillin-resistant Staphylococcus aureus lip abscess as a complication of facial laceration. *Am J Med Case Rep* 2023;11:116—8.
4. Huoh KC, Chang KW. Lip abscess associated with isotretinoin treatment of acne vulgaris. *JAMA Dermatol* 2013;149:960—1.
5. Amin D, Satishchandran S, Drew S, Abramowicz S. Diagnosis and treatment of lip infections. *J Oral Maxillofac Surg* 2021;79:133—40.

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Received 11 January 2025
Final revision received 12 January 2025
Available online 27 January 2025