

# Lower Lip Cellulitis Mimicking Angioedema: A Case of Septic Shock with Acute Kidney Injury

Dr Dinesh L Jadhav<sup>1</sup>, Dr Linganagouda S Patil<sup>2</sup>, Dr. P Shiva Sai Reddy<sup>3</sup>

<sup>1</sup>Professor, Department of General Surgery, SSIMS and RC. Contact number: 8050619291.

<sup>2</sup>Professor and HOD, department of General Surgery, SSIMS and RC. Contact number:9880033313.

<sup>3</sup>Junior Resident, department of General Surgery, SSIMS and RC.

Corresponding author: Dr. P Shiva Sai Reddy, Junior Resident, department of General Surgery, SSIMS and RC.

---

## Abstract

### Background

Lower lip swelling is a diagnostic challenge in emergency settings, with angioedema and cellulitis representing important differential diagnoses. Although cellulitis involving the facial region is relatively common, isolated lower lip cellulitis progressing to septic shock and acute kidney injury (AKI) is rare and potentially life-threatening.

### Case Presentation

A 71-year-old male presented with rapidly progressive swelling of the lower lip following an unknown insect bite. He complained of fever and breathlessness. He was a known case of type 2 diabetes mellitus, hypertension, and ischemic heart disease. Clinical examination revealed hypotension, diffuse swelling of the lower lip extending to the bilateral cheeks and submandibular region, erythema, tenderness, local rise in temperature, restricted mouth opening, and halitosis. Initial differential diagnosis included angioedema; however, the presence of inflammatory signs and systemic toxicity favored cellulitis. The patient was managed with intravenous antibiotics, fluid resuscitation, inotropic support, oral hygiene measures, and glycerin magnesium sulfate dressings. Despite aggressive treatment, he developed necrotizing fasciitis with abscess formation over the right cheek. Incision and drainage revealed an oro-cutaneous fistula communicating with the oral cavity. The gangrenous vermilion margin of the lower lip was debrided. Subsequent wound care and antibiotics resulted in clinical improvement, following which fistula closure and lower lip reconstruction were planned.

### Conclusion

This case highlights the importance of differentiating lower lip cellulitis from angioedema in patients with rapidly progressive facial swelling. Early diagnosis, prompt antibiotic therapy, aggressive supportive management, and timely surgical intervention are critical in preventing severe complications such as septic shock, AKI, and tissue necrosis.

**Keywords:** Lower lip cellulitis; Angioedema; Septic shock; Acute kidney injury; Necrotizing fasciitis; Oro-cutaneous fistula; Facial cellulitis

---

Date of Submission: 28-05-2026

Date of Acceptance: 06-06-2026

---

## I. Introduction

Cellulitis is a non-suppurative invasive bacterial infection involving the skin and subcutaneous tissues. It commonly occurs following trauma, insect bites, or odontogenic infections and is usually caused by  $\beta$ -hemolytic streptococci and Staphylococcus aureus. Facial cellulitis is clinically significant because of the rich vascular and lymphatic drainage of the head and neck region, which predisposes to rapid spread of infection and severe systemic complications.

Lower lip cellulitis is uncommon and may clinically resemble angioedema, particularly during the early stages of presentation. Angioedema is generally characterized by painless, non-inflammatory swelling, whereas cellulitis is associated with pain, erythema, warmth, tenderness, and systemic signs of infection. Failure to distinguish between these conditions can delay appropriate management and worsen patient outcomes.

We present a rare case of lower lip cellulitis initially mimicking angioedema in an elderly patient with multiple comorbidities, complicated by septic shock, acute kidney injury, necrotizing fasciitis, and oro-cutaneous fistula formation.

## **II. Case Report**

A 71-year-old male presented to the emergency department with swelling of the lower lip following an unknown insect bite one day prior to admission. The swelling rapidly progressed and was associated with fever and breathlessness.

The patient was a known case of type 2 diabetes mellitus, hypertension, and ischemic heart disease. There was no history suggestive of allergy, drug intake, or previous episodes of angioedema.

On examination, the patient was toxic-looking and hypotensive. Local examination revealed diffuse swelling of the lower lip extending to both cheeks and the submandibular region. The swelling was associated with erythema, local rise of temperature, tenderness, restricted mouth opening, and halitosis. Based on the rapid progression of swelling, angioedema was initially considered; however, inflammatory changes and systemic toxicity raised suspicion for cellulitis.

The patient was admitted to the intensive care unit and started on broad-spectrum intravenous antibiotics, fluid resuscitation, and inotropic support. Regular oral cavity washes and glycerin magnesium sulfate dressings over the chin and submandibular regions were initiated.

During the hospital stay, the patient developed worsening soft tissue infection with necrotizing fasciitis and pus collection over the right cheek. Surgical incision and drainage of the abscess were performed. Intraoperatively, an internal communication between the abscess cavity and oral cavity was identified, resulting in an oro-cutaneous fistula. Pus and tissue samples were sent for culture and sensitivity testing.

Subsequently, the patient developed gangrene involving the vermilion margin of the lower lip, which required surgical debridement. With continued antibiotic therapy, serial dressings, and wound care, the infection gradually resolved. The fistulous tract was debrided and closed, and reconstructive surgery for the lower lip was planned.

## **III. Discussion**

Lower lip cellulitis is a rare but potentially life-threatening condition, especially in elderly patients with immunocompromising comorbidities such as diabetes mellitus. The facial region has extensive vascular and lymphatic communication, facilitating rapid dissemination of infection into adjacent fascial spaces and systemic circulation.

The clinical differentiation between cellulitis and angioedema is essential. Angioedema typically presents with sudden, non-tender swelling without erythema or local warmth and is frequently associated with allergic reactions or medication use. In contrast, cellulitis presents with inflammatory signs such as tenderness, erythema, warmth, fever, and systemic toxicity. In the present case, the rapidly progressive lower lip swelling initially resembled angioedema; however, the associated fever, tenderness, local warmth, and hypotension supported an infectious etiology.

Common pathogens implicated in facial cellulitis include *Streptococcus* species and *Staphylococcus aureus*. In severe infections, polymicrobial involvement and anaerobic organisms may also contribute, particularly in odontogenic or necrotizing infections. Empirical antibiotic therapy should therefore provide broad-spectrum coverage until culture reports become available.

Delayed diagnosis or inadequate treatment may lead to severe complications including abscess formation, necrotizing fasciitis, septic shock, airway compromise, and acute kidney injury. The development of necrosis and oro-cutaneous fistula in this patient underscores the aggressive nature of the infection. Early surgical intervention, including incision and drainage and debridement of necrotic tissue, plays a crucial role in source control and prevention of further spread.

This case also highlights the importance of multidisciplinary management involving emergency physicians, intensivists, surgeons, and wound care specialists. Prompt recognition, hemodynamic stabilization, aggressive antimicrobial therapy, and timely surgical management contributed to the favorable outcome in this patient.

## **IV. Conclusion**

Lower lip cellulitis is an uncommon clinical entity that can mimic angioedema and rapidly progress to severe systemic complications. Careful clinical assessment is essential to differentiate infectious from allergic causes of facial swelling. Early aggressive management with broad-spectrum antibiotics, hemodynamic support,

and timely surgical intervention is critical in preventing complications such as septic shock, acute kidney injury, necrotizing fasciitis, and tissue loss. This case emphasizes the need for a high index of suspicion and multidisciplinary care in managing rapidly progressive facial infections.

#### **Learning Points**

1. Lower lip cellulitis may clinically mimic angioedema during early presentation.
2. Presence of erythema, tenderness, fever, and systemic toxicity favors an infectious etiology.
3. Elderly diabetic patients are at increased risk of severe facial soft tissue infections.
4. Early aggressive antibiotic therapy and surgical intervention are crucial to prevent complications.
5. Multidisciplinary management improves outcomes in complicated facial cellulitis.

#### **Declarations**

#### **Patient Consent**

Appropriate informed consent should be obtained from the patient for publication of clinical details and images.

#### **Conflict of Interest**

The authors declare no conflict of interest.

#### **Funding**

No financial support was received for this study.

#### **Ethical Approval**

Institutional ethical approval was waived as this is a single case report.

#### **References**

- [1]. Stevens DL, Bisno AL, Chambers HF, et al. Practice guidelines for the diagnosis and management of skin and soft tissue infections. *Clinical Infectious Diseases*. 2014;59(2):e10-e52.
- [2]. Raff AB, Kroshinsky D. Cellulitis: A review. *JAMA*. 2016;316(3):325-337.
- [3]. Hirschmann JV. Differential diagnosis of cellulitis and stasis dermatitis. *Journal of the American Academy of Dermatology*. 1995;32(2):201-203.
- [4]. Brook I. Microbiology and management of soft tissue and muscle infections. *International Journal of Surgical Pathology*. 2008;16(4):328-338.
- [5]. Bisno AL, Stevens DL. Streptococcal infections of skin and soft tissues. *New England Journal of Medicine*. 1996;334(4):240-245.