

Case Report**Aggressive management of necrotizing fasciitis in the lower chin: A multidisciplinary surgical approach****Saket Kumar*¹, Beenish Syaed¹, Jalashri Shamanewadi², Mamata Shivshette¹**¹Dept. of Maxillofacial Surgery, Rajiv Gandhi University of Health Sciences, Bengaluru, Karnataka, India.²Subbaiah Institute of Dental Sciences and Hospital, Karnataka, India.**Abstract**

Rapid fascial and subcutaneous tissue necrosis is a hallmark of necrotizing fasciitis (NF), an uncommon but potentially fatal soft tissue infection. The clinical presentation, extensive surgical management, and postoperative care of a patient with NF affecting the lower jaw and chin region are described in detail in this report.

Keywords: Radical debridement, Infection control, Lower jaw, chin, Necrotizing fasciitis.

Received: 23-02-2025; **Accepted:** 02-04-2025; **Available Online:** 27-08-2025

This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial 4.0 International](https://creativecommons.org/licenses/by-nc/4.0/), which allows others to remix, and build upon the work noncommercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprint@ipinnovative.com

1. Introduction

Necrotizing fasciitis in the head and neck is a rare but rapidly progressing infection that often stems from dental or soft tissue origins, involving a mix of aerobic and anaerobic bacteria such as *Streptococcus* and *Staphylococcus* species¹. The condition typically presents with severe, disproportionate pain, rapidly advancing redness and swelling, and may develop into skin necrosis and systemic sepsis if not promptly addressed². Immediate aggressive surgical debridement combined with broad-spectrum IV antibiotics and supportive care is essential to stop the spread of infection and improve patient outcomes.

2. Case Report**2.1. Case presentation**

A 45-year-old woman arrived with fever, lethargy, and rapidly worsening pain and swelling in the chin and lower jaw. She had a history of poorly controlled diabetes mellitus (**Figure 1**). Examination showed extensive soft tissue necrosis with purulent discharge in the submental region (**Figure 2**). The presence of palpable crepitus indicated a gas-

forming infection, along with significant induration and tenderness in the cervical area.



Figure 1: Preoperative image showing the patient with the lesion.



Figure 2: Preoperative close-up of the lesion, revealing necrotizing fasciitis.



Figure 3: Intraoral view of the lesion.



Figure 4: Intraoperative image showing surgical debridement of the necrotic tissue.



Figure 5: Postoperative image showing the lesion after debridement, demonstrating the initial healing process.



Figure 6: Final postoperative image showing complete healing and resolution of the lesion.

2.2. Investigations

Blood tests revealed leukocytosis, significantly elevated blood glucose, and increased C-reactive protein (CRP) levels. Contrast-enhanced CT scans showed extensive soft tissue swelling, gas accumulation in the subcutaneous plane, and infection spreading into deep cervical spaces. Intraoral examination revealed an ulceration on the floor of the mouth with exposed necrotic tissue and a foul odor (**Figure 3**). The lower incisors were severely mobile due to underlying bone loss, and purulent discharge from the lingual vestibule confirmed deeper fascial involvement.

3. Treatment and Management

Emergency surgical debridement was performed under local anesthesia to assess and remove necrotic tissue. The

debridement extended beyond the visibly affected areas, with multiple incisions made to ensure proper drainage and infection control (**Figure 4**). A fasciotomy was conducted to relieve tissue tension and prevent further spread. Daily wound irrigation with Betadine and hydrogen peroxide was performed, and negative-pressure wound therapy (NPWT) was considered to aid healing. Large-bore drains were placed in the cervical and submental regions to prevent fluid accumulation, and regular dressing changes with saline-soaked gauze were conducted.

Broad-spectrum intravenous antibiotics, including clindamycin and piperacillin-tazobactam, were started and later adjusted based on culture sensitivity results. Hyperbaric oxygen therapy was considered to improve tissue oxygenation and support healing. Blood glucose levels were closely monitored, and intravenous fluids and nutritional support were administered to assist recovery.

3.1. Reconstruction phase

Secondary wound closure was delayed until the infection was fully resolved. Soft tissue reconstruction using local flaps was planned to restore function and aesthetics. Postoperative healing showed significant improvement (**Figure 5**), and complete recovery was achieved in the final stages.

4. Discussion

Necrotizing fasciitis (NF) in the head and neck region, though uncommon, requires urgent diagnosis and intervention due to its rapid progression and high mortality risk. Individuals with underlying conditions such as diabetes mellitus are particularly susceptible, as seen in this case where poor glycemic control contributed to disease severity. Effective management hinges on early recognition and aggressive treatment to prevent complications³.

A high index of suspicion is crucial, especially in patients presenting with rapidly spreading swelling, pain, crepitus, and signs of systemic infection. Imaging, particularly contrast-enhanced CT, plays a key role in determining the extent of infection and guiding surgical intervention. Gas formation in the subcutaneous tissue and deep fascial plane involvement are hallmark features⁴.

Surgical debridement is the primary treatment modality, and timely intervention significantly reduces morbidity and mortality. In this case, extensive debridement was necessary, emphasizing the need for removing all necrotic tissue to contain the infection. Multiple incisions and fasciotomy facilitated adequate drainage, helping to prevent further spread. Supportive techniques such as negative-pressure wound therapy (NPWT) and hyperbaric oxygen therapy have been beneficial in enhancing wound healing and infection control⁵.

Empirical broad-spectrum antibiotics should be initiated promptly, with modifications based on culture and sensitivity

results. The combination of clindamycin and piperacillin-tazobactam provided effective coverage in this case. Adjunctive measures, including stringent glycemic control, intravenous hydration, and nutritional support, are vital for recovery⁶.

Reconstructive efforts should be considered only after complete infection resolution. Delayed primary closure with local flaps ensures optimal healing while reducing the risk of reinfection. In this patient, strategic planning of reconstruction allowed for both functional and aesthetic rehabilitation.

This case underscores the importance of a multidisciplinary approach in managing necrotizing fasciitis of the head and neck⁷. Prompt diagnosis, aggressive surgical debridement, targeted antimicrobial therapy, and comprehensive supportive care are crucial for achieving favorable outcomes. Future research should explore optimized treatment protocols, the role of novel wound healing therapies, and early diagnostic markers for better clinical outcomes⁸.

5. Conclusion

The aggressive character of necrotizing fasciitis in the chin and lower jaw is demonstrated in this instance, underscoring the significance of prompt identification and thorough surgical debridement.

6. Author Contribution

All authors contributed equally in designing the review article, writing, and revising. All authors contributed to the article and approved the submitted version.

7. Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

8. Source of Funding

None.

References

1. Wong CH, Chang HC, Pasupathy S, et al. Necrotizing fasciitis: clinical presentation, microbiology, and determinants of mortality. *J Bone Joint Surg Am.* 2003;85(8):1454-60.
2. Stevens DL, Bryant AE. Necrotizing soft-tissue infections. *N Engl J Med.* 2017;377(23):2253-65.
3. Anaya DA, Dellinger EP. Necrotizing soft-tissue infection: diagnosis and management. *Clin Infect Dis.* 2007;44(5):705-10.
4. Hakkarainen TW, Kopari NM, Pham TN, Evans HL. Necrotizing soft tissue infections: review and current concepts in treatment, systems of care, and outcomes. *Curr Probl Surg.* 2014;51(8):344-362.
5. Hasham S, Matteucci P, Stanley PR. Necrotizing fasciitis. *BMJ.* 2005;330(7495):830-3.
6. Descamps V, Aitken J, Lee MG. Hippocrates on necrotizing fasciitis. *Lancet.* 1994;344(8921):556.
7. Meleney FL. Hemolytic streptococcus gangrene. *Arch Surg.* 1924;9(2):317-64.

8. Endorf FW, Garrison MM, Klein MB. Necrotizing soft-tissue infections: differences in patients treated at burn centers and non-burn centers. *J Burn Care Res.* 2008;29(6):933-8.

How to cite: Kumar S, Syaed B, Shamanewadi J, Shivshette M. Aggressive management of necrotizing fasciitis in the lower chin: A multidisciplinary surgical approach. *J Orofac Health Sci* 2025;12(1):122–25.