

# Palatal Ulcerative Lesion Following Extraction of a Primary Molar: A Diagnostic Challenge in a Pediatric Patient with History of Cleft Palate



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## Abstract

A 9-year-old female presented with a draining fistula adjacent to #A. The etiology was suspected to be an eruption cyst from the permanent tooth successor and an extraction of #A was indicated. Following extraction under nitrous oxide sedation and local anesthesia, the patient returned for a one-week follow-up, where an ulcerative, purulent lesion was observed on the palatal mucosa adjacent to the extraction site. Given the patient's history of cleft lip and palate repair, the lesion raised concern for pathologic processes, and multiple differential diagnoses were considered. Clinical and radiographic evaluation revealed no underlying osseous pathology. The lesion demonstrated spontaneous resolution over time without intervention. The final diagnosis was determined to be a palatal drainage tract secondary to local anesthetic delivery. This case highlights the importance of recognizing iatrogenic causes of oral lesions and emphasizes careful diagnostic evaluation, particularly in patients with craniofacial anomalies.

## Introduction and Background

A 9-year-old female presented to the clinic for evaluation and extraction of primary tooth #A. Her medical history was significant for a repaired cleft lip and palate, with prior surgical interventions completed at a young age, and she had no known drug allergies or other significant medical conditions. The chief complaint was related to pain and infection associated with tooth #A. Clinical examination revealed that the tooth was associated with an abscess, which was confirmed radiographically by the presence of a potential eruption cyst. The treatment plan included extraction of tooth #A under nitrous oxide sedation and local anesthesia. Local anesthesia was administered using buccal infiltration, periodontal ligament (PDL) injection, and palatal infiltration techniques. The extraction was completed without intraoperative complications, and due to the severity of the initial infection, the patient was scheduled for a one-week follow-up evaluation.

Children with cleft lip and palate present with complex oral health challenges requiring multidisciplinary care. According to the American Academy of Pediatric Dentistry, these patients often exhibit increased susceptibility to dental disease, altered anatomy, and oral mucosal variations requiring careful evaluation.

Additionally, studies have shown that children with cleft conditions demonstrate a higher prevalence of oral mucosal lesions and dental pathology compared to non-cleft populations.

Post-extraction complications in pediatric patients may include infection, delayed healing, and soft tissue lesions. However, distinguishing between pathologic lesions and iatrogenic findings is critical, particularly in medically complex patients.

## Clinical Photos and Radiographs



## Differential Diagnosis

The differential diagnosis for an ulcerated lesion on the palatal mucosa in a pediatric patient is broad and includes both reactive and pathologic conditions. Traumatic ulceration, particularly secondary to local anesthetic injection, was strongly considered given the recent dental procedure and lesion location. Infectious etiologies such as a palatal abscess or sinus tract of odontogenic origin were also considered due to the presence of purulence, although radiographic findings did not support ongoing osseous infection. Other possibilities included aphthous ulceration (major type), which can present as large, painful ulcers on non-keratinized mucosa, and primary herpetic gingivostomatitis, although the localized nature of the lesion made viral causes less likely. Less common considerations included necrotizing sialometaplasia, a benign but self-limiting condition that can mimic more serious pathology, as well as reactive lesions such as pyogenic granuloma or a foreign body reaction. Although rare in pediatric patients, more serious conditions such as osteomyelitis-related sinus tracts or malignancy were also included in the differential diagnosis and ruled out based on clinical progression and resolution over time.

## Conclusion/Discussion

This case highlights the diagnostic challenges associated with ulcerative lesions of the palate in pediatric patients, particularly in those with a history of cleft lip and palate repair. The presence of an erythematous, ulcerated lesion with purulence following extraction initially raised concern for residual infection or other pathologic processes. However, the absence of radiographic pathology and the lesion's proximity to the site of local anesthetic administration suggested an alternative etiology. Palatal injections are known to cause localized tissue trauma, vascular compromise, and, in some cases, secondary drainage tracts that may clinically mimic infectious or neoplastic lesions. In patients with a history of cleft palate, altered anatomy, scar tissue, and variations in vascular supply may further complicate both presentation and healing, increasing the likelihood of atypical findings. This case underscores the importance of a thorough differential diagnosis, interdisciplinary collaboration, and careful clinical monitoring. Recognizing iatrogenic causes of oral lesions is critical to avoid unnecessary invasive procedures such as biopsy, particularly when lesions demonstrate progressive resolution over time.

In conclusion, this case emphasizes that not all post-extraction lesions in pediatric patients represent true pathology, and iatrogenic factors must be carefully considered in the diagnostic process. A comprehensive clinical and radiographic evaluation, combined with appropriate follow-up, can allow clinicians to differentiate between self-limiting conditions and those requiring intervention. In this patient, conservative monitoring proved to be an effective approach, as the lesion resolved completely without the need for biopsy or additional treatment. Furthermore, this case highlights the importance of heightened clinical awareness when managing patients with craniofacial anomalies, as their unique anatomy may influence both presentation and healing. Early recognition and appropriate management of such lesions can prevent unnecessary procedures and contribute to optimal patient outcomes.

## References

- American Academy of Pediatric Dentistry. (2024). Policy on the management of patients with cleft lip/palate and other craniofacial anomalies. Chicago, IL: AAPD.
- American Academy of Pediatric Dentistry. (2019). Policy on management of patients with cleft lip/palate and craniofacial anomalies.
- Sharma, A., et al. (2014). Oral health status in children with cleft lip and palate. *North American Journal of Medical Sciences*, 6(6), 266–270.
- Gogna, N., Hussain, S., & Al-Rawi, S. (2015). *Palatal mucosal necrosis after administration of a palatal infiltration*. *British Dental Journal*, 219, 560–561.