

# A Misdiagnosed Case of Palatal Abscess in a Pediatric Patient: A Case Report

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**Abstract:** *Diagnosing palatal swelling in children can often be challenging to the clinician. Swellings may arise from manifold including neoplasms, periapical lesions, and periodontal abscesses. Diagnoses can be done with examination of clinical presentation such as growth pattern, surface texture, base, and consistency of lesion. Appropriate radiological and histological examination provides support to definitive diagnosis. Most commonly, the etiology involves the palatal roots of the posterior teeth or rarely the laterals. A complete knowledge over differential diagnosis, with physiologic and anatomic factors that influence the spread and localization of dental infections is more important to facilitate timely intervention for improved prognosis. The current case report highlights an unusual case of a 10-year-old girl presenting with a palatal abscess crossing the midline.*

**Keywords:** Oral Pathology, Pediatric dentistry, Abscess

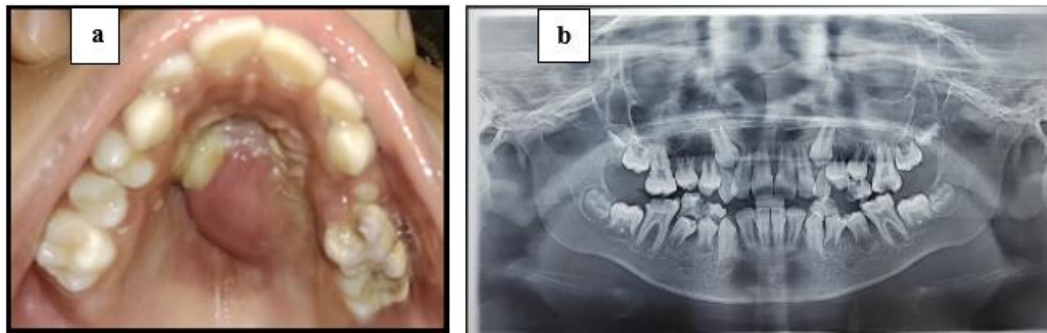
## 1. Introduction

Palatal swellings often pose a diagnostic challenge to the clinician, and they may be congenital or acquired in origin, may be painful or painless as in case of benign swellings which may arise due to various reasons including periapical lesions, periodontal abscesses, or neoplastic processes whereas congenital origins include unerupted teeth and torus palatinus. The palate is very typical for an abscess arising from a nonvital lateral incisor or the palatal root of an upper first molar.<sup>1</sup> For masses on the hard palate, the differential diagnosis is relatively limited and can be concised by assessing the growth pattern of the mass. Diagnosis for acutely presenting masses on the hard palate frequently includes reactive lesions, commonly abscesses. An abscess is a nonspecific inflammatory response to the presence of bacteria in normally sterile tissues. The seriousness of the infection is related to the numbers and virulence of the bacteria, host resistance, and associated anatomic structures.<sup>2</sup> In the pediatric patient, dental abscesses are common, however, palatal presentations are rare. Abscesses are often associated with developmental anomalies of the teeth, infections of the pulp due to destruction of tooth structure or they may occur spontaneously without any apparent etiological factor. Early intervention can prevent serious complications such as septicemia, cavernous sinus thrombosis, brain abscess, shock, and occasionally death. This report presents an unusual case of a pediatric patient with a palatal abscess crossing the midline.

## 2. Case Report

A 10-year-old girl reported to the Department of Pediatric and Preventive Dentistry with a chief complaint of a pain positive swelling on the palatal region and history of pain since 1 week. The patient mother gave a history of pain on the upper left back tooth region for which they visited local dentist who further referred the child to medical college and

hospital. A detailed case history was obtained which gives no relevant medical history. Intraoral examination revealed a soft, erythematous, non-ulcerated, fluctuant swelling measuring 3 cm x 3.5 cm present on the left half of the palate which crossed the midline. CBCT was taken, reported well defined radiolucency seen in the periapical region of palatal, & mesiobuccal root (0.5x0.5 cm) with breach in the left maxillary sinus floor and hypodense area involving entire maxillary sinus on left side infected periapical granuloma in relation to 26 and odontogenic sinusitis in relation to left maxillary sinus. FNAC was done and sent for microbiological analysis which revealed gram positive cocci in chains. Laboratory hemogram revealed normal Hb levels 10g/dl. Treatment was carried out with IV antibiotics for 1 week. Further referred to dental hospital, on intra-oral examination revealed involvement of permanent left maxillary first molar which was associated with a periapical abscess with poor oral hygiene index of score 3 with Halitosis and calculus score of 2 with chronic generalized gingivitis. The patient had no other buccal mucosa abnormalities or oropharyngeal lesions or erythema. On palpation, to 3cm x 3.5cm nontender, sub-mandibular lymph nodes were palpable on the left side. Other systemic findings were normal and non-contributory. OPG revealed carious permanent left upper first molar with no significant bony changes and diffuse radiolucency seen in the periapical region i. r. t 26 with involving enamel, dentin and pulp. A diagnosis of palatal abscess secondary to odontogenic infection was arrived by considering the clinical appearance and radiological investigations. After obtaining consent form from parents, the treatment was carried out. Access opening was done in relation to upper right first permanent molar and stab incision was given to establish drainage and fluid was purulent in nature. A treatment plan was formulated which included extraction of 65, 74, 75, 84 and restorative treatment for the mandibular right first molar and RCT in relation to left mandibular first molar followed by oral prophylaxis. Antibiotic coverage for aerobic and anaerobic organisms was given.



**Figure 1:** (a) pre - operative maxillary view, palatal swelling of 3cm x 3.5cm visible, along the distal left of maxillary permanent molars. (b) OPG

### Treatment

Incision and drainage of abscess, root canal treatment followed by stainless - steel crown i. r. t 26. The patient was followed up regularly with eventful healing and recovery.



**Figure 2:** Healing follow up and RCT of maxillary left permanent first molar was done.

### 3. Discussion

Odontogenic infections are the most prevalent infections in the head and neck region.<sup>3</sup> These dental infections often spread beyond the tooth socket, following paths of least resistance into anatomical spaces distant from the initial site of infection. The progression of these conditions depends on several factors: the number and virulence of the organisms involved, the host's resistance, and the anatomy of the affected area.<sup>4, 5</sup>

Dentoalveolar abscess involve a complex flora of obligate and facultative anaerobes, with obligate anaerobes outnumbering facultative ones. Commonly isolated organisms include streptococci, fusobacterium species, and black - pigmented anaerobes such as Prevotella and Porphyromonas species. Facultative anaerobes from the viridans group streptococci and the anginosus group streptococci are also frequently implicated. The viridans group streptococci comprises the mitis group, oralis group, salivarius group, sanguinis group, and the mutans group.

A palatal abscess, as seen in the present case, manifests as a diffuse, erythematous swelling with a sudden onset. It is typically observed lateral to the midline in the premolar - molar region, presenting as a compressible mass or swelling, which aids in diagnosis.<sup>6</sup> Common etiological factors include

periodontal abscesses from palatal pockets, palatal roots of posterior teeth, and occasionally the lateral incisor. However, a palatal abscess may infrequently localize in the midline, posing a challenging diagnostic dilemma. In such instances, a provisional diagnosis can be made by systematically eliminating other possibilities based on factors such as growth, surface texture, base, and consistency.

Knowledge of slow - growing lesions may include benign and malignant salivary gland tumors, pyogenic granuloma, torus palatinus, and fibromas. Lesions with a smooth surface might be reactive hyperplastic, salivary gland, or mesenchymal lesions, while those with a rough surface could indicate squamous papilloma or verruca vulgaris are also necessary to arrive at the correct differential diagnosis.<sup>7</sup>

Definitive treatment for odontogenic abscesses involves draining the abscess, administering antibiotics, managing pain, and removing the offending tooth or performing a endodontic treatment. Oral antibiotics are generally sufficient, but hospital admission is necessary for cases with symptoms such as fever, dyspnea, or airway compromise due to swelling.<sup>8</sup> While penicillins and cephalosporins are commonly used, increasing antimicrobial resistance due to B - lactamase production necessitates the use of extended-spectrum antibiotics or combinations with other antimicrobials like metronidazole.<sup>9</sup> Clindamycin is a suitable alternative for patients allergic to penicillins and cephalosporins, effective against gram - positive aerobic bacteria and both gram - positive and gram - negative anaerobic bacteria. However, clindamycin may lead to serious adverse reactions such as clostridioides difficile infection.<sup>10</sup> Anti - pseudomonal antibiotics, such as fourth - generation or higher cephalosporins, may be considered for patients with severe infection or immunocompromised state.<sup>8</sup> In present case we used IV antibiotics of amoxicillin, metronidazole, and syrup. ibugesic plus.

### 4. Conclusion

It is well understood that hard palatal swellings are uncommon in children, yet they present a challenging differential diagnosis in acute, sub - acute, and chronic cases. Clinically, a palatal swelling may resemble a cyst, abscess, or various benign or malignant conditions, making it difficult to distinguish between them. Therefore, early clinical and histological diagnosis, along with appropriate treatment, is crucial in determining the course of the disease and improving the prognosis.

**References**

- [1] Odell EW. Clinical Problem solving in dentistry. 2nd ed. Elsevier Science; 2004. pp.223–226.
- [2] Hargreaves KM, Goodis HE. Seltzer and Bender's dental pulp. 3rd. Quintessence Publishing; 1984.
- [3] Topazian RG, Goldberg MH, Hupp JR (2002) Oral and Maxillofacial Infections. Philadelphia: W. B. Saunders.
- [4] Mitchell CS, Nelson MD Jr (1993) Orofacial Abscess of Odontogenic Origin in the Pediatric Patient: Report of Two Cases. *Pediatr Radiol* 23: 432 - 434.
- [5] Jimenez Y, Bagan JV, Murillo J, Poveda R (2004) Odontogenic Infections. Complications. Systemic Manifestations. *Med Oral Patol Oral Cr Bucal* 9: 139 - 147.
- [6] Houston GD, Brown FH (1993) Differential Diagnosis of the Palatal Mass. *Compendium* 14: 1222 - 1224.
- [7] Mortazavi H, Safi Y, Baharvand M, Rahmani S, Jafari S (2017) Peripheral Exophytic Oral Lesions: A Clinical Decision Tree. *Int J Dent* 2017: 9193831.
- [8] Sanders JL, Houck RC (2021) Dental Abscess. StatPearls Publishing.
- [9] Stephens MB, Wiedemer JP, Kushner GM (2018) Dental Problems in Primary Care. *Am Fam Physician* 98: 654 - 660.
- [10] American Academy of Pediatric Dentistry (2021). Useful Medications for Oral Conditions. The Reference Manual of Pediatric Dentistry. American Academy of Pediatric Dentistry Chicago Ill.