

An Unusual Case of Palatal Abscess in A Pediatric Patient: A Case Report

Namita Kalra¹, Rishi Tyagi², Amit Khatri³, Tavisha Goyal^{4*} and Khadeeja Kulood M⁴

¹Professor and Head, Department of Pedodontics and Preventive Dentistry, University College of Medical Sciences, Guru Teg Bahadur Hospital (University of Delhi), Delhi-110095

²Professor, Department of Pedodontics and Preventive Dentistry, University College of Medical Sciences, Guru Teg Bahadur Hospital (University of Delhi), Delhi-110095

³Professor, MDS, Department of Pedodontics and Preventive Dentistry, University College of Medical Sciences, Guru Teg Bahadur Hospital (University of Delhi), Delhi-110095

⁴Post graduate student, MDS student, Department of Pedodontics and Preventive Dentistry, University College of Medical Sciences, Guru Teg Bahadur Hospital (University of Delhi), Delhi-110095

Abstract

Diagnoses of a palatal swelling can often present a challenge to the clinician. Swellings may arise from manifold reasons including neoplasms, periapical lesions and periodontal abscesses. Diagnoses can be aided with examination of clinical presentation such as growth pattern, surface texture, base and consistency of lesion. Appropriate radiological and laboratory testing also provide support to a definitive diagnosis. In pediatric patients, dental abscesses are common, however, palatal presentations are rare. Most frequently, the etiology involves the palatal roots of the posterior teeth or occasionally the lateral incisor. Thorough knowledge of differential diagnoses and presentation of such lesions along with physiologic and anatomic factors that influence the spread and localization of dental infections is important to facilitate timely intervention for improved prognosis. The current report highlights an unusual case of a 5 year old boy presenting with a palatal abscess crossing the midline.

Keywords: Oral Pathology, Pediatric dentistry, Abscess

Introduction

Palatal swellings often pose a diagnostic challenge to the clinician and can be congenital or acquired in origin. Swellings may arise due to a variety of reasons including periapical lesions, periodontal abscesses or neoplastic processes whereas congenital origins include unerupted teeth and torus palatinus [1]. For masses on the hard palate, the differential diagnosis is relatively limited and can be concised by assessing the growth pattern of the mass [2]. Diagnoses for acutely presenting masses on the hard palate frequently includes reactive lesions, commonly mucocoeles and abscesses [2]. In the paediatric patient, dental abscesses are common, however, palatal presentations are rare [3]. 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 [4]. Early intervention can prevent serious complications such as septicemia, cavernous sinus thrombosis, brain abscess, shock, and occasionally death [5]. This report presents an unusual case of a pediatric patient with a palatal abscess crossing the midline.

Case Report

A 5 year old boy reported to the Department of Pedodontics and Preventive Dentistry with a chief complaint of a painless mass on the palatal region since the last 3 days. The patient had a history of pain on chewing in the upper left and right back tooth region for which he had visited a local dentist. He had decreased oral intake due to the mass and was also more fussy than usual with decreased activity. A detailed case history of the patient was obtained which provided no relevant medical history. Intraoral examination revealed a soft, erythematous, non-ulcerated, fluctuant swelling measuring 4cm x 2 cm present on the left half of the palate which crossed the midline. Further examination revealed proximal restorations on the upper left and right second primary molar which was associated with a periapical abscess. Proximal caries was also observed on the upper right primary first molar. The maxillary primary central incisors had exfoliated (Figure 1a). The patient had no other bucco-mucosal abnormalities or oropharyngeal lesions or erythema. On palpation,

1 to 2 cm nontender sub-mandibular lymph nodes were palpable on the left side. No other neck masses were palpable. No trismus was present. Other systemic findings were normal and non-contributory. Occlusal and periapical radiographs presented carious right and left upper first molars and showed no significant bony changes (Figure 1b). A probable diagnosis of palatal abscess secondary to odontogenic infection was arrived at considering the clinical appearance and radiological investigations. Access openings were initiated in the upper right and left first primary molars to establish drainage. Aspiration of fluid from the lesion was serosanguineous in nature and was sent for

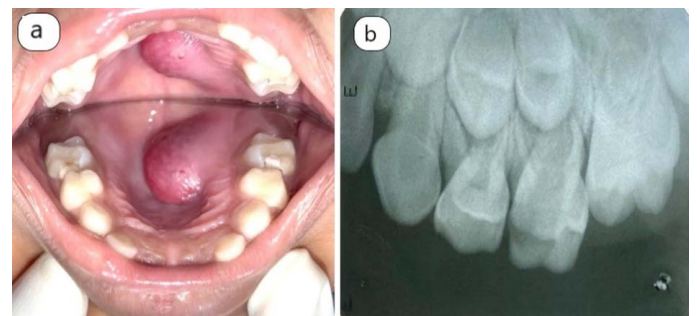


Figure 1: (a) Pre-operative maxillary view, palatal swelling of 4cm* 2 cm visible, along with proximal restorations on maxillary left and right second primary molars. (b) Intra-oral periapical radiograph of the maxillary left second primary molar.

***Corresponding author:** Tavisha Goyal, Post graduate student, MDS student, Department of Pedodontics and Preventive Dentistry, University College of Medical Sciences, Guru Teg Bahadur Hospital (University of Delhi), Delhi-110095, Tel: 9650403405; E-mail: tavishagoyal@gmail.com

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cytology, culture and sensitivity testing. Cellular smears under Giemsa staining showed predominant neutrophils in a degenerate background, features consistent with an abscess/ acute suppurative lesion (Figure 2a). Aerobic culture inoculated on blood agar plates revealed small, round convex alpha haemolytic colonies which were identified as *Streptococcus mutans* by VITEK[®] 2 system (Biomérieux, USA) (Figure 2b). A treatment plan was formulated which included extraction of the maxillary left primary second molar, pulpectomy of the maxillary right primary second molar and restorative treatment for the maxillary right primary first molar. Laboratory hemogram revealed normal hemoglobin levels and no raise in white cell counts. After obtaining consent from the parents, the treatment was carried out. Antibiotics coverage for aerobic and anaerobic organisms given was Amoxicillin clavulanate potassium in the dose of 25-45 mg/kg/day in doses divided every 12 hours and metronidazole in the dose of 15-50 mg/kg/day in divided doses 3 times daily for five days. The patient was followed up regularly for 14 days with uneventful healing and recovery (Figure 3).

Discussion

Odontogenic infections are the most common of all the infections of head and neck [6]. Dental infections spread beyond the tooth socket along the path of the least resistance into anatomic spaces removed from the site of initial infection. Advancement relies upon number, virulence of organism along with host resistance and anatomy of concerned area [7, 8]. The pathogenesis of dentoalveolar abscesses implicates a complex flora of obligate anaerobes and facultative anaerobes. Obligate outnumber facultative anaerobes with *Streptococci*, *Fusobacterium* species and the black-pigmented anaerobes such as

Prevotella and *Porphyromonas* species being isolated most commonly [5]. Facultative anaerobes belonging to the viridans group *streptococci* and the anginosus group *streptococci* are commonly implicated in dental abscess. The viridans group *Streptococci* includes mitis group, oralis group, salivarius group, sanguinis group, and the mutans group [9]. A palatal abscess, as was observed in this case, is characterized by a diffuse, erythematous swelling with sudden onset. The palatal abscess is commonly observed lateral to the midline in the premolar-molar region and presents as a compressible mass or swelling which eases the diagnoses [10]. Etiology often includes periodontal abscesses from palatal pockets, palatal roots of posterior teeth and occasionally the lateral incisor as a source of infection [1]. However, infrequently, the palatal abscess can be localized in the midline and can pose a difficult diagnostic dilemma [10]. In such cases, a provisional diagnosis may also be arrived at by systematically eliminating scenarios on the basis of presentation such as growth, surface texture, base and consistency. Slow growing lesions include benign and malignant salivary gland tumors, pyogenic granuloma, torus palatinus and fibromas among others [2]. Lesions with smooth surface may be reactive hyperplastic in nature, salivary gland or mesenchymal lesions whereas presentation with rough surface may be indicative of squamous papilloma or verruca vulgaris [11]. Definitive treatment for odontogenic abscesses involves draining the abscess, providing antibiotic support, pain control and removal or pulpectomy of the offending tooth. Oral antibiotics are usually sufficient and hospital admission is required in cases with features such as fever, dyspnea or airway compromise secondary to swelling [12]. Penicillins and cephalosporins are often used in odontogenic infections, but increasing antimicrobial resistance due to B-lactamase production makes the use of extended spectrum antibiotics or combinations with other antimicrobials such as metronidazole more suitable [13]. Clindamycin can be employed as an option for patients allergic to penicillin and/or cephalosporin antibiotics. This antibiotic is effective for infections (e.g., abscesses) with gram-positive aerobic bacteria and gram-positive or gram-negative anaerobic bacteria. However, Clindamycin may lead to serious adverse reaction such as *Clostridioides difficile* [14]. Anti-pseudomonal antibiotics like fourth-generation or higher cephalosporins may be considered for patients with severe infection or immunocompromised state [12].

Conclusion

Acutely arising masses of the hard palate are uncommon in children, however, the clinician requires a thorough knowledge of the differentials in acute, subacute and chronic presentations. A palatal swelling may resemble a cyst, abscess or any benign or malignant tumor which may lead to delayed diagnoses and treatment. Early clinical and histopathological diagnosis along with appropriate treatment shortens the course of disease and improves the prognosis.

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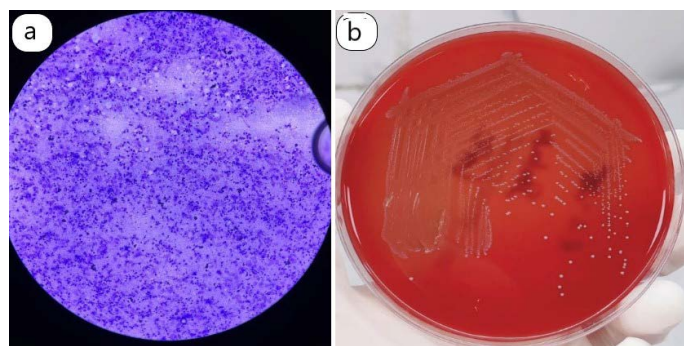


Figure 2: (a) Cellular smears under Giemsa staining showed predominant neutrophils in a degenerate background. (b) Microbiological culture on blood agar plates indicative of growth of *Streptococcus mutans*.



Figure 3: Post – operative view after 7 days showing resolution of swelling after extraction of maxillary left second primary molar.

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