

Case report

A Supernumerary Tooth: A Case Report of Mesiodens

Ruwaida Mira^{1*} , Amnah Mohamed¹ , Marwa Abukra² , Jamila Omar² , Fatma Twair¹ , Subhia Shaglabow² , Namat Soliman² , Mohamed Alhingar¹ , Abdulmunem Abounqab¹ 

¹Department of Oral Medicine and Oral Pathology, Faculty of Dentistry, University of Zawia, Libya

²Department of General and Basic Sciences, Faculty of Dentistry, University of Zawia, Libya

Corresponding email. r.mira@zu.edu.ly

Abstract

Mesiodens is a supernumerary tooth located in the maxillary central incisor region, representing the most commonly affected site with a reported prevalence of 0.15–1.9% in the general population. Although frequently impacted, some cases may fully erupt into the oral cavity and still cause significant complications. This report presents a case of a fully erupted Mesiodens in a 9-year-old girl who experienced functional and psychosocial discomfort due to the anomalous appearance of her anterior teeth. Clinical and radiographic examinations confirmed the presence of a fully erupted supernumerary tooth positioned between the maxillary central incisors. Extraction under local anesthesia was performed as the definitive treatment. Early diagnosis and timely surgical intervention are critical in preventing orthodontic complications and minimizing the psychosocial impact on pediatric patients. Comprehensive post-extraction monitoring and management of associated dental caries are essential components of long-term care.

Keywords. Dental Anomalies, Hyperdontia, Mesiodens, Pediatric Dentistry, Supernumerary Teeth

Received: 12/06/26

Accepted: 09/08/26

Published: 20/08/26

Copyright © Khalij-Libya Journal (KJDMR) 2026.

Open Access. Some rights reserved. This work is available under the CC BY-NC-SA 3.0 IGO license.

Introduction

Mesiodens is defined as a supernumerary tooth located in the premaxillary region between the maxillary central incisors [1]. It represents the most frequently reported type of supernumerary tooth, with a prevalence ranging from 0.15% to 1.9% in the general population [2,3,4]. Although the majority of Mesiodens cases are impacted, a subset may fully erupt into the oral cavity, as reported by Fardi et al. [5]. Recent epidemiological evidence confirms that supernumerary teeth in pediatric populations remain a clinically significant anomaly warranting systematic surveillance [14]. Mesiodens may present unilaterally or bilaterally, as a single tooth or in multiples [6]. The precise etiology remains a subject of debate; however, several hypotheses have been proposed, including hyperactivity of the dental lamina, genetic predisposition, environmental influences, and aberrant proliferation of the cell rests of Serres or cell rests of Malassez [7].

Contemporary classification frameworks further distinguish between non-syndromic and syndromic presentations, which carry distinct prognostic and management implications [15]. When left untreated, Mesiodens can precipitate a spectrum of clinical complications, including incisor crowding, rotational displacement, median diastema, delayed or ectopic eruption, root resorption of adjacent teeth, and dentigerous cyst formation [8]. In less frequent cases, involvement of the permanent incisors may result in root dilacerations or loss of pulp vitality [9].

Regardless of eruption status, extraction is universally recognized as the preferred treatment modality [10,11]. Therefore, early and accurate diagnosis of Mesiodens, aided by clinical and radiographic evaluation, is paramount to determining the correct position of the supernumerary tooth and planning surgical removal at the most appropriate time — whether immediate or deferred — to minimize subsequent complications.

Case Report

A 9-year-old female patient was referred to the dental clinic presenting with aesthetic and functional concerns relating to the appearance of her maxillary anterior dentition. The patient reported significant embarrassment when smiling or laughing, attributing her discomfort to the abnormal morphology of her front teeth. She attended the clinic accompanied by her mother. Clinical examination revealed multiple carious lesions involving the posterior teeth, with otherwise healthy and unremarkable soft tissues. A single composite restoration was noted on the maxillary right first permanent molar. Several permanent teeth remained unerupted. Notably, a supernumerary tooth (Mesiodens) was identified in a fully erupted position between the maxillary central incisors (Figure 1). Periapical radiographic imaging subsequently confirmed the presence of the fully erupted Mesiodens occupying the midline interincisal space (Figure 2).



Figure 1. Clinical photograph demonstrating a fully erupted supernumerary tooth (Mesiodens) positioned between the maxillary central incisors

Following a thorough discussion of the available treatment options with the patient's mother, a definitive treatment plan was formulated. The plan entailed surgical extraction of the erupted mesiodens under local anesthesia to prevent progressive incisor crowding and further displacement of the permanent central incisors. The extraction was carried out without complication (Figure 3). Post-operatively, regular clinical follow-up was recommended to monitor the alignment of the permanent incisors throughout their continued eruption. Additionally, the existing carious lesions were identified as requiring prompt restorative intervention to halt further enamel demineralization and preserve overall oral health.



Figure 2. Periapical radiograph confirming the presence of the fully erupted Mesiodens in the midline interincisal region

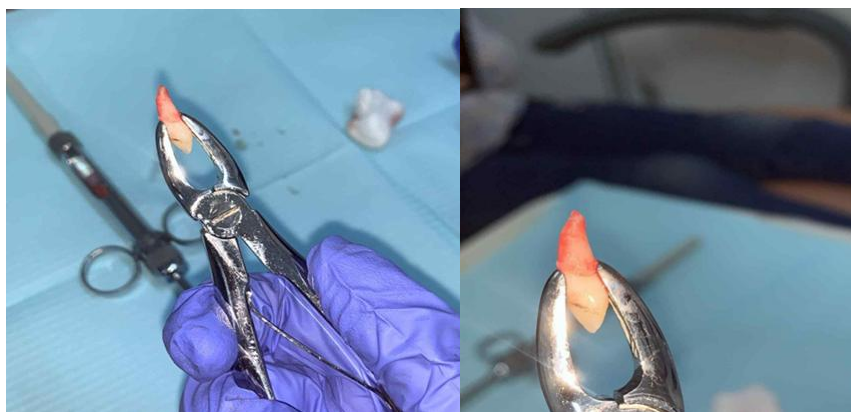


Figure 3. Post-extraction clinical photograph of the extracted Mesiodens

Discussion

The present case illustrates a fully erupted Mesiodens in a 9-year-old female patient, resulting in appreciable incisor displacement and notable psychosocial distress. Despite its erupted status, the supernumerary tooth produced a clinically

significant malocclusion consistent with findings reported in the literature. Garvey et al. noted that erupted Mesiodens cases are not exempt from causing orthodontic complications, as their abnormal positioning continues to exert disruptive forces on adjacent developing dentition [10]. A recent updated scoping review by Vargas et al. corroborates this, confirming that supernumerary teeth in pediatric patients most commonly affect the maxillary anterior region and are strongly associated with incisor displacement and space discrepancies [14]. The etiology of Mesiodens is multifactorial. Genetic influences appear to contribute substantially; however, environmental and local factors, including hyperactivity of the dental lamina and the persistence of epithelial cell rests, have also been implicated [7]. In the present case, no familial history was elicited, suggesting a sporadic developmental origin. Zhang et al. recently proposed a refined differential diagnostic framework that distinguishes non-syndromic from syndromic supernumerary teeth based on genetic, phenotypic, and radiographic criteria [15]. The current case, presenting as an isolated finding without systemic or syndromic associations, aligns with the non-syndromic category, which carries a more favorable prognosis following surgical management.

Clinically, Mesiodens may manifest in diverse forms and orientations, ranging from conical to tuberculate or supplemental morphologies, and may be oriented vertically, horizontally, or in an inverted position [10]. Davidson et al. recently proposed a revised pictorial classification of supernumerary teeth that systematizes morphological variants and provides clearer diagnostic criteria, facilitating more consistent clinical documentation and treatment planning [12]. The Mesiodens in this case exhibited a conical crown form in a vertical orientation, which facilitated its full eruption between the central incisors, a presentation reported by Shah et al. to account for a subset of Mesiodens occurrences [8]. The psychosocial dimension of this case merits particular attention. The patient's reluctance to smile and feelings of social embarrassment represent a significant aspect of her overall quality of life that standard clinical metrics may not fully capture. Literature increasingly supports the recognition of dental aesthetics as a determinant of self-esteem and social confidence in children, particularly during formative developmental stages [6]. Sembiring et al. further emphasize that pediatric patients presenting with supernumerary teeth frequently demonstrate a measurable reduction in oral health-related quality of life, reinforcing the argument that timely management carries both functional and psychological benefits [11].

With respect to treatment planning, Sembiring et al. advocate a staged approach in pediatric cases, in which the timing of extraction is calibrated to the developmental stage of the adjacent permanent dentition, the degree of crowding, and the child's cooperation level [11]. In the present case, the fully erupted nature of the Mesiodens, combined with the patient's age and documented psychosocial impact, supported the decision for immediate extraction under local anesthesia rather than a deferred or staged approach. Early extraction was undertaken as the treatment of choice, consistent with established management guidelines [10]. Timely removal is advocated to minimize the duration of orthodontic disruption and to enhance the potential for spontaneous correction of incisor alignment following decompression. Post-extraction monitoring remains essential, as the residual space created by the supernumerary tooth and the presence of unerupted permanent teeth necessitate ongoing clinical surveillance. Furthermore, the associated carious lesions must be addressed promptly to prevent progression and to preserve the structural integrity of the dentition during this critical developmental period.

Conclusion

This case underscores the importance of early diagnosis and timely management of fully erupted Mesiodens in pediatric dental patients. Clinical and radiographic examinations are indispensable diagnostic tools for accurately localizing the supernumerary tooth and determining the optimal timing and approach for surgical intervention. In the present case, prompt extraction successfully eliminated the primary source of incisor displacement and alleviated the patient's considerable psychosocial burden. Comprehensive post-extraction care encompassing regular monitoring of incisor alignment and management of concurrent carious lesions remains integral to achieving optimal long-term outcomes. This report highlights that even a fully erupted Mesiodens warrants active and definitive management to prevent cumulative orthodontic sequelae and to safeguard the patient's dental and psychological well-being. Future prospective studies incorporating standardized classification criteria and quality-of-life measures are warranted to further elucidate the long-term impact of early intervention in pediatric supernumerary tooth cases.

Conflict of interest. Nil

References

1. Liu DG, Zhang WL, Zhang ZY, Wu YT, Ma XC. Three-dimensional evaluations of supernumerary teeth using cone-beam computed tomography for 487 cases. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2007;103(3):403–411.
2. Russell KA, Folwarczna MA. Mesiodens — diagnosis and management of a common supernumerary tooth. *J Can Dent Assoc* 2003;69(6):362–366.
3. Zhu JF, Marcushamer M, King DL, Henry RJ. Supernumerary and congenitally absent teeth: a literature review. *J Clin Pediatr Dent* 1996;20(2):87–95.

4. Alaçam A, Bani M. Mesiodens as a risk factor in treatment of trauma cases. *Dent Traumatol* 2009;25(2):e25–e31.
5. Fardi A, Kondylidou-Sidira A, Bachour Z, Parisi N, Tsirlis A. Incidence of impacted and supernumerary teeth — a radiographic study in a North Greek population. *Med Oral Patol Oral Cir Bucal* 2011;16(1):e56–e61.
6. Mannan H, Ahmed A, Nuruzzaman K. Mesiodens: a common dental problem in pediatric patients. A case report. *UpDCJ* 2020;10(2):26–28.
7. Akhil JEJ, Prashant B, Shashibushan K. Mesiodens: a case report and literature review. *Inter Ped Dent Open Acc J* 2018;1(3).
8. Shah A, Gill DS, Tredwin C, Naini FB. Diagnosis and management of supernumerary teeth. *Dent Update* 2008;35(8):510–512, 514–516, 519–520.
9. Choi HM, Han JW, Park IW, Baik JS, Seo HW, Lee JH, et al. Quantitative localization of impacted mesiodens using panoramic and periapical radiographs. *Imaging Sci Dent* 2011;41(2):63–69.
10. Garvey MT, Barry HJ, Blake M. Supernumerary teeth — an overview of classification, diagnosis and management. *J Can Dent Assoc* 1999;65(11):612–616.
11. Sembiring L, Dian D, Dara E. Management of supernumerary teeth in children. *SONDE (Sound of Dentistry)* 2025;9(1). doi:10.28932/sod.v9i1.11509
12. Davidson C, Smit C, Nel S. Supernumerary teeth: a pictorial review and revised classification. *J Oral Biol Craniofac Res* 2025;15:454–462.
13. Krasuska-Slawinska E, Turska-Szybka A, Pham A, Sierdziński J, Olczak-Kowalczyk D. Natal and neonatal teeth in newborns and infants: a case-control study. *Sci Rep* 2025;15. doi:10.1038/s41598-025-20907-9
14. Vargas AMM, Villanueva ALG, Paez LDG, Del Carmen Roa Gonzalez S, Gonzalez YM, Ancona MSB, et al. Supernumerary teeth in pediatric patients: an updated scoping review. *Int J Appl Dent Sci* 2024;10(2). doi:10.22271/oral.2024.v10.i2f.1966
15. Zhang C, Xue N, Xie Y, Zhang X, Zeng X, Liu T. Proposed differential diagnosis and classification of non-syndromic and syndromic supernumerary teeth. *BMC Oral Health* 2026;26. doi:10.1186/s12903-026-08050-x