



Surgical Management of Impacted Inverted Mesiodens With cyst Excision

Gaurav Gupta^{1*}, DK Gupta², Priyanka Gupta³, Parth Shah⁴ and Neelja Gupta⁵

¹MDS, Associate Professor, Department of Paediatric and Preventive Dentistry, Jaipur Dental College Senior Consultant, Wisdom Dental Clinics, India

²MDS in Oral and Maxillofacial Surgery, Senior consultant at Wisdom Dental Clinic, India

³MDS in Paediatric and Preventive Dentistry, Senior Demonstrator, Department of Paediatric and Preventive Dentistry, RUHS College of Dental Science, India

⁴MDS, Department of Paediatric and Preventive Dentistry, Senior consultant at Saanchi Pediatric Hospital, Surat, India

⁵BDS, Department of Cosmetic Dentistry, Senior consultant at Wisdom Dental Clinic, India

*Corresponding author: Gaurav Gupta, MDS, Associate Professor, Department of Paediatric and Preventive Dentistry, Jaipur Dental College Senior Consultant, Wisdom Dental Clinics, India

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Abstract

Impacted tooth is most frequently diagnosed during the routine dental check-up, commonly associated teeth are third molars, but impacted inverted mesiodens are considered to be one of the infrequent findings in dentistry. Here with, a rare case is reported which is suspected of inverted mesiodens describing its surgical intervention along with cyst removal which was detected in radiographic examination and also showing importance of radiograph in diagnosis of infrequent cases in dentistry.

Keywords: Inverted mesiodens; palatal impaction; supernumerary

Introduction

Supernumerary teeth are also known as hypodontia which is defined as an extra number of teeth as compared to normal dentition formula of oral cavity [1]. The prevalence percentage of supernumerary teeth ranges from 0.10% to 3.6% in permanent dentition while 0.02% to 1.9% in case of primary dentition [2]. The supernumerary tooth cited in premaxillary region is termed as mesiodens. Usually, it has conical crown with single root which may be single or multiple. It might be one of the cause for creating eruption disturbances of incisors. Largely, (55.2%) of mesiodens found are in vertical position, whereas (37.6%) are inverted and remaining 7% are horizontally positioned [3]. The cause might be due to complex interaction of genetic as well as environmental factors [1]. Inverted mesiodens etiology still remains unknown. Various complications are found associated with inverted mesiodens such as adjacent teeth eruption disturbance, rotation and displacement of central incisors, diastema evolution and cyst formation. Therefore, initial stage detection and timely surgical management of inverted mesiodens is important to prevent such consequences. In existing literatures, there is no such specified time for its removal [4]. In pediatric dentistry, numerous anomalies

in tooth size, shape, number and eruption of teeth are encountered. Some of the anomalies are detected during the routine dental check-up associated with erupted teeth while others may go unnoticed and remain impacted as they are sometimes asymptomatic. Here is such a case which is suspected for inverted mesiodens and was found palatally impacted, upon radiographic examination and also describing about its surgical management.

Case Report

A 9-year-old male patient reported to the clinic with chief complain of pain in upper front tooth region. There was no significant medical history, patient presented with good general health. On clinical examination palatal swelling was found (Figure 1). Radiographic examination through CBCT was done to evaluate any underlying infection or hard tissue defect which surprisingly disclosed the presence of impacted mesiodens, with radiolucent area surrounding the crown of the tooth. Based upon the clinical and radiological findings supernumerary tooth was provisionally diagnosed to be like inverted mesiodens followed with pathology (Figure 2). Due to pressure created by impacted

tooth the roots of the permanent maxillary central incisors were tilted, thereby necessitating the removal of impacted mesiodens. Routine pre-operative procedure was carried out with informed consent to patient's family regarding the surgical procedure. Local anaesthesia was administered, an incision was made at the alveolar crest towards midline. The flap was then raised with minimal bone removal to visualize the impacted tooth, it was luxated with care so not to hamper permanent teeth and impacted tooth was carefully extracted (Figure 3). Conservative surgical enucleation of associated lesion was done with suture placement after the

gentle curettage and saline irrigation (Figure 4). The patient was prescribed with antibiotic and anti-inflammatory coverage along with homecare instructions including oral hygiene measures. The excised soft tissue specimen was sent for histopathological examination to know any linked malignancy which gave final impression of benign cyst with no evidence of malignancy (Figure 5). The healing was uneventful, patient was recalled for follow-up phase and post-operative results were as expected. Clinical and radiological controls were timely scheduled.



Figure 1: Intraoral image showing palatal swelling.

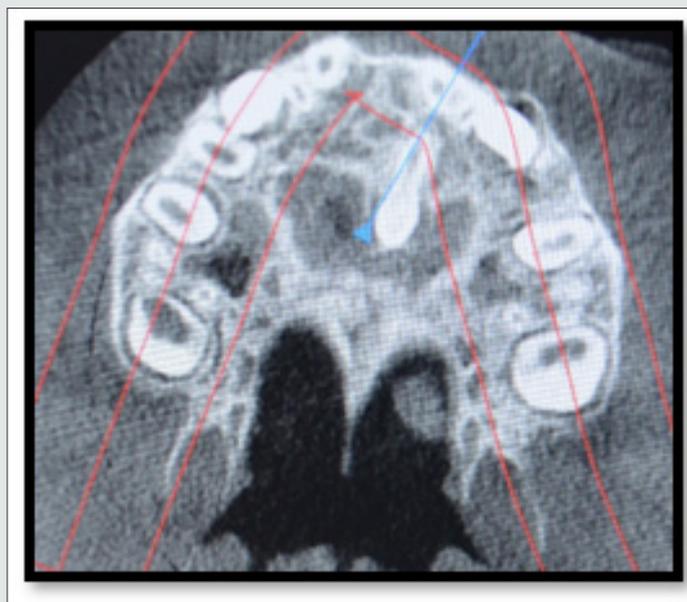


Figure 2: CBCT depicting inverted mesiodens with radiolucency around crown.



Figure 3: Surgical evacuation of mesiodens.

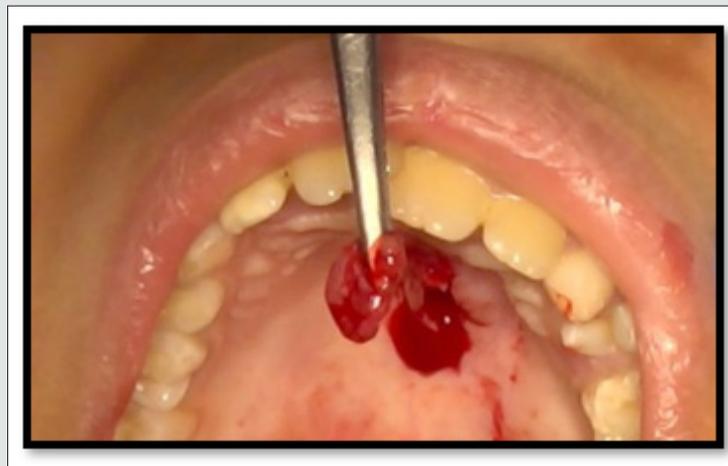


Figure 4: Removal of associated cyst.

HISTOPATHOLOGY REPORT	
SLIDE NO	A-93093
SPECIMEN:	BIOPSY-MESIODENS CYST
DETAILS:	Inverted ? mesiodens impacted in palate with cyst formation radiolucent lesion surrounded crown of inverted ? mesiodens.
GROSS:	The specimen comprises of single grey brown soft tissue piece measuring 0.8x0.8 cm. Entire taken for embedding.
MICROSCOPIC:	Biopsy comprises of a cyst lined by low cuboidal epithelium. The underlying fibrocollagenous wall shows mild infiltration by inflammatory cells.
IMPRESSION:	Overall histomorphology is consistent with benign cyst. No evidence of granuloma or malignancy.

Figure 5: Final impression of benign cyst.

Discussion

Morphologically, the mesiodens appear to be as a rudimentary tooth with smaller size and conical crown as compared to normal teeth. Sometimes, it may mimic as natural tooth. Root is usually globular in shape and fully developed. Mesiodens are frequently found between maxillary central incisors, particularly on palatine side, along with sagittal mid-plane, which gives it this name [5]. According to the literature they shown case reported the presence of impacted tooth among the adjacent maxillary central incisors and found to be in inverted position, adding up with the statistics that 80% to 90% of all supernumerary teeth are found in maxilla [6]. Various authors have stated, the inverted mesiodens might disrupt the erupting permanent incisor thereby creating malocclusion. Few authors recommend for the early removal of supernumerary teeth, particularly those which are inverted as they are unlikely to erupt [1,7]. In present case it seems impacted mesiodens caused the roots of neighboring permanent incisors to tilt thus forming malocclusion. The supernumerary teeth erupting in palate causes early loss, ectopic eruption, diastema, crowding, root resorption of adjacent teeth and also leads to development of cyst which might be dentigerous/primordial or seen incursion into nasal cavity [8,9]. As a result of histopathology the associated lesion with impacted inverted mesiodens was benign cyst. It gave the possibility of development of dentigerous cyst, moreover because cyst was surrounding the crown of impacted tooth. Furthermore, the inverted position of the mentioned tooth leaves no doubt for the surgical intervention since there was no such possibility of its eruption other than causing complications. The diagnosis of mesiodens is done by radiographs, Cone Beam Computed Tomography (CBCT) has proved to be advanced technique to detect exact location as well as any hard or soft tissue pathology associated with tooth, thus avoiding surgical complications, and decreasing iatrogenic damages to permanent tooth [10]. In this case report too CBCT played major role in locating the exact position and linked pathology with impacted mesiodens. Some clinicians recommend for postponement of surgical management till the root formation of associated adjacent permanent incisors [11]. The case presented with early diagnosis and surgical management for more favorable prognosis with minimal complications.

Conclusion

This case presents with highlights about the major role of radiography in diagnosing rare cases of inverted mesiodens and successful surgical removal of cyst along with impacted supernumerary teeth, thus minimizing its complications and enabling better prognosis. Thereby creating a need for clinicians to make timely diagnosis and treatment plan for such rare developmental anomalies.

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