



Co-existence of mandibular dens retromolar and canine transmigration in a single non-syndromic patient - A rare case report

*Dr. Nagaveni NB ^{1,2}

¹Professor, Consultant Pediatric Dentist “Garika Dental Care” Davangere, Karnataka, India.

²Consultant Pediatric Dentist, Dental wing, Karnataka ENT Hospital and Research Centre, Chitradurga, Karnataka, India.

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*Corresponding author: **Dr. Nagaveni NB**

Professor, Consultant Pediatric Dentist “Garika Dental Care” Davangere, Karnataka, India.

Abstract

The present article illustrates co-existence of two different anomalies pertaining to two different dental phenomena in a single non-syndromic Indian male patient. Supernumerary molar also called as “distomolar” representing a tooth anomaly relating to tooth number and “tooth transmigration” relating to a tooth eruption disturbance were diagnosed in a patient following radiographic examination. Supernumerary molar occurred in the mandibular left region distal to the third molar and tooth transmigration involved the mandibular left permanent canine (Type II). Based on the extensive review of current available dental anomalies literature, this combination of two dental anomalies is not reported till date. Other dental variation like severe root dilaceration was noticed in the maxillary right central incisor.

Keywords: Distomolar, Mandibular canine, Canine transmigration, Supernumerary molar, Tooth anomalies.

INTRODUCTION

During routine dental practice, clinician can come across various dental variations, anomalies or abnormalities in a common man. Dental anomalies constitute wide range of anomalies pertaining to shape, size, structure, composition, number or tooth eruption [1-9]. Supernumerary teeth are extra set of teeth apart from normal number of primary and permanent teeth and belongs to all type of teeth. Fourth molar also termed as ‘distomolar’ or ‘distodens’ or ‘retromolar’ are a kind of supernumerary molar existing in both maxillary or mandibular arch [10,11]. There is no exact prevalence about supernumerary molars studied in different population group across the world. Regarding tooth eruption phenomenon, ‘tooth transmigration’ is another dental anomaly characterised by introsseous crossing of an impacted tooth through dental midline and found in the contralateral side of the dental arch [12-15]. Extensive dental literature explored isolated cases of transmigration and fourth molars [10,11, 12-20]. The purpose of this article is to showcase co-existence of two different tooth anomalies like mandibular fourth molar and permanent canine transmigration occurring in Indian male patient. Fourth molar represents anomaly belonging to tooth number and tooth transmigration represents anomaly belonging to tooth eruption phenomenon.

Case report

A 55-year-old male patient reported to a private dental clinic complaining of pain in the left lower back tooth region since a week. Physical examination revealed patient with normal built, gait and moderately nourished. There was no history of any systemic, metabolic or syndromic disorders. Intraoral examination was performed which showed patient with complete permanent dentition with all teeth erupted except for the mandibular left permanent canine and maxillary right third molar. There was no history of previous removal of any tooth in the maxillary right arch. Remaining third molars were erupted completely in the oral cavity. The mandibular left first molar was found with a custom-made stainless-steel crown. A deep dental caries involving pulp was observed in the mandibular left second molar. The tooth was found tender to percussion test. To study the status of deep dental caries and to rule out the presence of impacted permanent canine, a panoramic radiograph was taken which showed an impacted left canine in the mandibular arch (Figure 1). The impacted left canine was placed horizontally within the alveolus at the lower border of the mandible and

found below the root apexes of mandibular both right and left central and lateral incisors. The one third portion of its crown had crossed the dental midline and placed in the opposite side of the arch and found till the right lateral incisor root. The root of the impacted canine was completely developed with no associated pathology. Further examination of the radiograph showed presence of a supernumerary molar (fourth molar) in the same mandibular left quadrant located distal to the mandibular third molar and not associated with any periapical pathology (Figure 1). Patient did not have any signs and symptoms associated with the impacted and transmigrated canine. Other dental variation like severe root dilaceration (approximately 60-degree bend) involving the maxillary right central incisor was also observed (Figure 1). The primary mandibular left canine was still present with complete root and not showing any evidence of root resorption. The first molar had been root canal treated showing the evidence of root canal obturation. Considering radiographic features, the case was diagnosed as idiopathic, non-syndromic concomitant occurrence of a supernumerary molar (retromolar) and canine transmigration (Type II). Patient was informed about the presence of hidden dental pathology and their consequences. Unfortunately, patient did not agree for extraction of a fourth molar or a transmigrated canine as both of them did not have any signs or symptoms (Table 1). Therefore, patient was scheduled for the treatment of a second molar associated with deep dental caries.

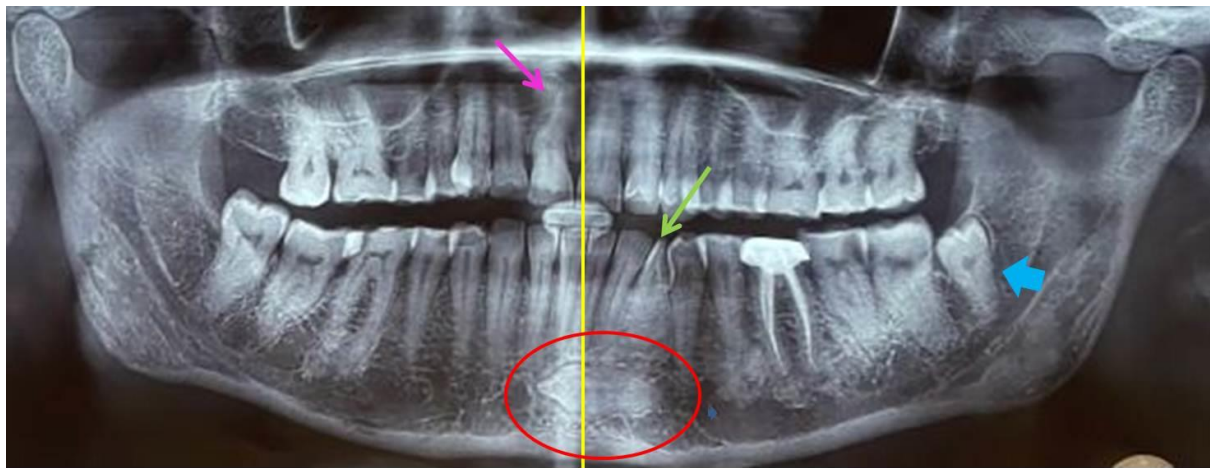


Figure 1: Panoramic radiograph depicting transmigrated mandibular left canine (red circle), mandibular left fourth molar/retromolar (blue arrow). Severe root dilaceration (60-degree-bend) in the maxillary right central incisor (pink arrow) and retained primary left mandibular canine were also evident.

Table 1: Patient details associated with two different tooth anomalies

Age Gender Ethnicity	Chief Complaint	Clinical Features	Radiographic Features	Associated Anomalies /Findings	Treatment Advised/ Provided
55 years Male Indian	Pain in the lower left back tooth region since a week	Deep dental caries involving pulp in the mandibular left second molar Over-retained primary mandibular left canine	Presence of an impacted eumorphic supernumerary molar (retromolar) in the left mandibular arch located distal to the third molar + Transmigration of left mandibular permanent canine (Type II)	Congenital agenesis of maxillary third molar in the right quadrant. Over-retained primary mandibular left canine	Surgical removal of the fourth molar Wait and watch for the transmigrated canine

DISCUSSION

Publications showing occurrence of two different tooth anomalies in a single non-syndromic patient are extremely scarce. Series of Indian publications showcased occurrence of various dental anomalies/abnormalities/tooth phenomenon in patients belonging to Indian ethnicity [1-20]. In this paper author has recorded occurrence of two different dental anomalies belonging to different dental variations like a retromolar (supernumerary molar) and a transmigration of the permanent canine (disturbance in tooth eruption phenomenon) in the same side of the mandibular arch which is not reported till date according best of author’s knowledge. Retromolar is a supernumerary molar commonly seen distal to the third molars either following the line of dental arch or slightly buccal or lingual to the third molars [10,11]. This

condition is referred by different synonyms like distodens, retromolar, dens distomolar or fourth molar. It is more frequently observed in the maxillary arch compared to mandibular arch. These molars can be found completely erupted or impacted in the ratio of 1:5 based on the available literature. Unerupted asymptomatic distomolars are accidentally diagnosed following a radiographic examination. Therefore, radiographic examination is the key factor in diagnosing distomolars [10,11]. The most commonly used radiographic methods include occlusal, periapical and panoramic, with panoramic being the most appropriate diagnostic method most frequently used. Recently a new imaging technique like cone beam computed tomography (CBCT) has revolutionized the field of dentistry as it provides more specific diagnosis and has considered more beneficial in detecting the accurate location of these anomalies along with their relation to the surrounding vital anatomic structures. Sometimes impacted retromolars found associated with cystic lesions, periodontal problems, neuralgic pain like trigeminal neuralgia, root resorption, pulpal necrosis of the adjacent tooth and odontogenic inflammation. Fourth molars which found erupted may lead to delayed or ectopic eruption of the adjacent teeth, periodontal problems, traumatic cheek bite, dental caries and malocclusion.

The prevalence of occurrence of supernumerary molars in the general population has been estimated from 0.3% to 2.1% and showed higher prevalence in males than females [10,11]. This may be related to its association with the autosomal recessive gene, which has a greater penetration in males. In the case described here too, supernumerary molar was diagnosed in male patient. The fourth molar appeared comparatively smaller to the third molar and its anatomy was similar to the third molars and had a small single root. Therefore, it was classified as eumorphic type of supernumerary molar. Due to lack space the retromolar was found in the ramus of the mandible. The surrounding anatomy of bone architecture related to the fourth molar was found normal with no associated pathology. Therefore, no treatment was carried out and patient was kept under regular follow-up till the occurrence of any changes related to this tooth.

“Tooth transmigration” most frequently encountered in the mandibular arch involving permanent canines and are diagnosed on radiographic examination. Prevalence of tooth transmigration in the general population varies from 0.1% to 0.41% with females being affected more commonly than males [13-20]. To classify their pattern of transmigration, Mupparapu [21] examined 127 cases of transmigrated canines and formulated a classification system for transmigrated canines consisting of five different patterns of transmigration (Table 2). Among these five types, type I is the most commonly observed type and type V is the least reported type according to the data obtained from the previous published cases. Based on Mupparapu’s classification [21], the transmigrated mandibular canine in the present case was categorized as Type II, as the canine was located in a horizontal position, near the inferior border of the mandible and below the apexes of mandibular incisors.

Table 2: Mupparapu’s classification on Mandibular canine transmigration [21]

Type	Description of transmigration pattern
Type I	Canine placed in mesio-angular position with the crown crossing the mandibular midline, seen either labial or lingual to incisors.
Type II	A horizontally impacted canine, seen near inferior margin, below the apexes of mandibular incisors.
Type III	An erupting canine seen mesial or distal to the opposite canine.
Type IV	Horizontal impaction of canine seen near the mandibular inferior margin, placed below the apexes of the opposite premolars or molars.
Type V	Vertically placed canine in the midline but with its long axis crossing the midline.

Literature showed occurrence of canine transmigration in association with other dental malformations or anomalies or conditions. An Indian case report showed occurrence of multiple anomalies such as a supernumerary tooth, teeth agenesis and pyramidal shaped roots in molars [18]. Another Indian article showed presence of congenital agenesis of bilateral permanent mandibular central incisors associated with type I mandibular canine transmigration [19]. Another 2024 article [13] reported occurrence of maxillary canine transmigration along with central incisor and impacted mesiodens. All these three teeth were oriented in horizontal pattern high in the alveolus close to the nasal septum. In the present case, distomolar was found along with other anomalies like severe root dilaceration (60-degree-bend) in the maxillary right central incisor and congenital agenesis of maxillary right third molar. Another Indian article showed occurrence of mandibular fourth molar in association with congenital agenesis of all permanent second premolars [10]. Nagaveni NB in 2024 reported occurrence of maxillary distomolar along with short root anomaly (rhizomicroly) and pyramidal molars [11].

Transmigrated canines are always detected following a radiographic examination taken for some other purpose [14-20]. The most valuable radiographs used for their identification are panoramic radiographs. However, advanced imaging techniques like CBCT scan will provide the three-dimensional picture of the impacted canine and its relation with the surrounding anatomic structures. This is highly essential during surgical removal of these teeth. There is no definite established treatment protocol in the management of transmigrated canines. Before planning treatment modalities for impacted and transmigrated canines, the problems or consequences arising from surgical removal should be considered

as these transmigrated canines found close to the mental foramen or inferior alveolar nerve [13-20]. Therefore, there are more chances of damaging these anatomical structures. Another treatment option like orthodontic pulling of transmigrated canines has been advised in the dental literature. However, this treatment modality is associated with its own drawbacks. In the present case, the wait and watch method was advised as the impacted canine was found at the inferior border of the mandible and below the root apexes of mandibular central and lateral incisors. Therefore, either surgical removal or orthodontic treatment was not advised as the tooth was not associated with any pathology.

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