CASE REPORT

Kissing mandibular canines: An unusual case of bilaterally transmigrated impacted mandibular canines – A case report

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Abstract

Kissing teeth are extremely rare incidental radiological findings. Bilaterally, impacted mandibular canines can be presented as kissing canines in panoramic radiograph. Kissing mandibular canine, “the migration of the bilateral canines parallelly at the same rate to the opposite side,” is a rare phenomenon. This developmental anomaly is usually diagnosed on radiographic examination. When clinically patient present with missing permanent canines or an over-retained deciduous canines, panoramic radiograph should always be advised to supplement the intraoral radiograph findings. So far, only few cases of bilateral transmigration of impacted canines exhibiting kissing phenomenon have been reported. Here, we report and discuss a case of bilateral transmigrated mandibular kissing canines and their management by surgical extraction of both the canines followed by orthodontic interventions.

Keywords: Bilateral, impaction, kissing canines, surgical extraction, transmigration

Introduction

The migration of teeth is a very common ectopia. Transmigration is an uncommon developmental anomaly that presents as the migration of an unerupted or an impacted tooth from its normal position to the contralateral side, usually crossing the midline.1 The most commonly impacted teeth in the dental arch are canine, with more prevalence of occurrence in the maxilla when compared to their occurrence in the mandible and the rate of incidence ranging from 0.8% to 2.8%, but transmigration of canine is more frequently reported in the mandible.2,3 From the review on literature of transmigration, only very few cases of bilateral mandibular canine impaction with transmigration have been reported so far.1,4 Classification of transmigrating mandibular canines both unilateral and bilateral has been proposed by Mupparapu, which involves five types:

- Type 1: Canine impacted mesioangularly across the midline, labial, or lingual to the anterior teeth with the crown portion of tooth crossing the midline.
- Type 2: Canine horizontally impacted near the inferior border of the mandible below the apices of the incisors.
- Type 3: Canine erupted either mesial or distal to the opposite canine.
- Type 4: Canine horizontally impacted near the inferior border of the mandible below the apices of the premolar or molar on the opposite side.
- Type 5: Canine is positioned vertically in the middle with the long axis of the tooth crossing the midline.2,5

Tooth exhibiting kissing phenomenon is a very rare incidental finding seen radiographically and in the literature, a very few cases have been documented so far. Kissing teeth can be divided into two types based on the tooth involved:

Kissing molars

When the occlusal surfaces of the bilaterally impacted permanent molars contact each other within a single follicular space and their roots pointing in opposite directions.6

Kissing canines

When the bilateral impacted mandibular canines transmigrate, it is presented as a kissing phenomenon in the panoramic radiograph. Mupparapu classification was modified by Qaradaghi by including a 6th variant that involves “the parallel migration of both canines at the same rate to the contralateral site” which is otherwise termed as kissing canines or alternative as “mirror image canines.”6,7
Here, we report such a rare case of bilateral transmigration of impacted mandibular canine exhibiting kissing phenomenon which was surgically extracted.

**Case Report**

An 18-year-old male with no relevant medical history reported to the dental clinic with a complaint of a missing lower tooth, with no history of extraction or tooth loss. The patient was asymptomatic with no other relevant clinical findings. And hence the patient was later referred for orthodontic examination. On intraoral examination, missing right and left mandibular canines and retained deciduous canine on the right side were revealed. Panoramic radiographic examination was advised and it revealed bilaterally impacted permanent mandibular canines transmigrating in a kissing position [Figure 1]. Radiographically, the mandibular left canine was seen inferiorly positioned when compared to the mandibular right canine position in the symphyseal region. No, any pathologic findings were associated with the transmigrated impacted canines [Figure 2].

Based on the clinical and radiographic findings, the treatment plan was stipulated and the surgical removal of the kissing impacted canines followed by fixed orthodontic treatment was advised. The patient did not reveal any medical condition and, hence, considered medically fit to undergo surgery. The surgical extraction was performed by giving local infiltration and inferior alveolar nerve block. The kissing canines were buccally approached with the help of a crevicular incision extending from 34 to 44 [Figure 3]. After the crevicular incision, two releasing incisions on either side and the full-thickness mucoperiosteal flap were reflected. Then, osteotomy was performed to create a window inferior to the incisors and the impacted kissing canines were exposed. The mandibular right canine was exposed and sectioning of the tooth with surgical burs at the cervical level separating the crown from the roots, to minimize the amount of bone removal and facilitate the extraction. The right canine was removed by sectioning followed by removal of the left canine which was placed inferior to it by the same method. The surgical site was rinsed with a saline solution, to remove the residual tissues and debris [Figures 4 and 5]. The flap was repositioned and sutured back using 3/0 silk suture [Figures 5 and 6]. To control

**Figure 1:** Preoperative Orthopantomograph showing transmigrated mandibular canines 33 and 43 in kissing position

**Figure 2:** Clinical image showing missing 33 and 43, retained right deciduous canine

**Figure 3:** Incision and exposing the impacted canine

**Figure 4:** Surgically extracted impacted canines
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Discussion

Transmigration is a rare dental developmental anomaly, where the unerupted teeth migrate intraosseously across the midline. Ando et al., in 1964, coined the term “transmigration.” Later in 1985, Javid gave an expansion to the definition of transmigration to include, any impacted tooth that may pass more than halfway through the midline. Joshi stated that migration of a tooth across the jaw midline which is not associated with any pathological entity is called transmigration.

The occurrence of the phenomenon of transmigration is usually associated with impacted teeth. The most commonly impacted tooth is permanent mandibular and maxillary third molars followed by maxillary canines, maxillary and mandibular premolars, mandibular canines, and maxillary central incisors. Among the canine impaction, the incidence of impaction of maxillary canine is more commonly reported than the mandibular canine impaction with the rate of incidence ranging from 0.8% to 2.8%. The incidence of mandibular canine impaction is reported to be 20 times lower than that for maxillary canine impactions. However, the occurrence of impacted mandibular canine transmigration is more commonly reported with the rate of incidence ranging from 0.8–3.6% to 0.1%. On the prevalence of transmigration of various mandibular teeth, it was reported that the incidence of transmigration of mandibular canine was 0.079%, transmigrant lateral teeth 0.0017%, and 0.0026% transmigrant premolars.

Various theories have been put forward to explain the higher incidence of transmigrant mandibular canine. It has been stated that cross-sectional area of the anterior mandible is larger as when compared with that of the anterior maxilla and attributed this to the increases incidence of occurrence of mandibular canine transmigration. The larger distance between the lower border of the mandible and the root apices of the mandibular canine can also be considered as one of the reasons for the higher incidence of mandibular canine transmigration. Usually, the mandibular migratory canine is lodged in the symphyseal area, and the tendency of the symphyseal region to expand and grow larger to accommodate the migrating canine could also be attributed to the increased occurrence of transmigration in the mandible. From the review of literature on transmigration, the occurrence of transmigration bilaterally crossing the midline is very rare and, only scanty cases of bilateral transmigration have been reported so far.

The exact etiology of the transmigration of impacted teeth is not yet clear, and hence, multiple etiologies have been proposed. Heredity has been suggested as an etiological cause. The most commonly accepted explanation for the causative factor for the transmigration is the displacement of the tooth bud into the abnormal sites or due to its deviation during tooth development. The movement takes place along the path of least resistance, and hence, the crown deviates to a more horizontal position and an abnormally strong eruptive force directs it through the dense mandibular symphysis. According to Pippi and Kaitas when the strong eruptive force and enlarged follicular space during root formation occurs simultaneously, it produces an osteolytic area, thereby offering less resistance in the path of tooth movement which may result in the transmigration of the tooth. Some authors emphasized that other etiological factors that could contribute to the transmigration as over-retained or premature loss of deciduous teeth, spacing, crowding, arch length discrepancies, and agenesis of permanent lateral incisors and presence of any small obstacles, like a small root fragment or an odontoma, that may alter the path of tooth eruption. The transmigrated canine should be followed up by periodic radiographic observation to observe the movement of the tooth and to plan the treatment accordingly.

Clinically, transmigration more often remains asymptomatic. On clinical examination, if there is an over-retained or premature loss of deciduous canines, absence, or delayed eruption of the permanent mandibular canines in the arch which could be suggestive of impacted or transmigrated canines should be confirmed by intraoral and panoramic radiographs.

Al-Waheidi reported that usually, the transmigrated canines are associated with a cystic lesion. He suggested that when a cyst is present at the crown of the canine that it may facilitate the process of migration. Since cyst is an expansive lesion and as it enlarges that it tends to displace the tooth in any direction in the path of the least resistance. On the
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few cases, a cyst or odontoma can be seen associated with such
any pathological entity and is usually asymptomatic, but in a
midline of the mandible is an uncommon phenomenon.
Transmigration of impacted mandibular canine across the
area of the opposite side or in the case where the apex of the
canine has migrated past the apex of the adjacent lateral incisor,
it is not possible to get back the tooth back into place through
surgical exposure. In such cases, surgical removal of the tooth
is considered as the treatment choice as done in our present
reported case.

Conclusion
Transmigration of impacted mandibular canine across the
midline of the mandible is an uncommon phenomenon.
Bilaterally transmigrated mandibular canine can exhibit a kissing
phenomenon and it can be diagnosed by panoramic radiograph.
Mandibular canine transmigration is usually not associated with
any pathological entity and is usually asymptomatic, but in a
few cases, a cyst or odontoma can be seen associated with such
tooth. Surgical extraction of the transmigrated kissing canines
is the choice of treatment in most cases followed by orthodontic
correction.

Declaration of Patient Consent
The authors, hereby, declare that they have obtained all required
patient consent forms. In the form, the patient has given his
consent for his images and other clinical information to be
reported in the journal. The patient understand that his name
and initial will not be published and due efforts will be made to
conceal his identity, but anonymity cannot be guaranteed.

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