

Transmigration of Mandibular Canine: A Case Report

Abstract:

Phenomenon of movement of impacted tooth that crosses the midline is termed as “Transmigration”. In this condition, the tooth fails to emerge in its usual position and even crosses the mandibular midline, making orthodontic correction extremely difficult or unfeasible. We present a similar case managed surgically in a 13-year-old female adolescent.

Key-words: transmigration, dentigerous cyst, impacted canine, cbct

Introduction:

Phenomenon of movement of impacted tooth that crosses the midline is termed as “Transmigration” first introduced by Ando et al.[1], a rare identity. Mandibular canine is most frequently affected tooth followed by maxillary canine and it can be bilateral too. [2]. It is proclaimed more in females than males with ratio of 1.6:1.[3] Frequently, not observed in routine cases as they are asymptomatic, but sometimes shows resorption or displacement of adjacent tooth/teeth. Thus, orthodontic treatment is almost unachievable and if left untreated can leads to formation of dentigerous cyst. Therefore surgical extraction can be the treatment choice for such cases.

Case Report:

A thirteen year old female patient came with the complain of pain in lower front region of mouth since 1 month along with OPG [Fig 1] advised at their local clinic.

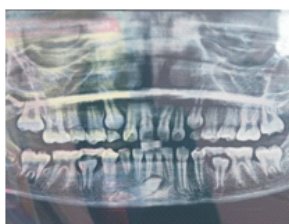


FIGURE 1: OPG revealing transmigrated 43

On clinical examination, no sign of caries, trauma or sinus was appreciated in that region reflecting some other cause to it. OPG revealed impacted canine, its crown lying at apex of 31. Pt. was advised CBCT for better diagnosis [Fig 2].

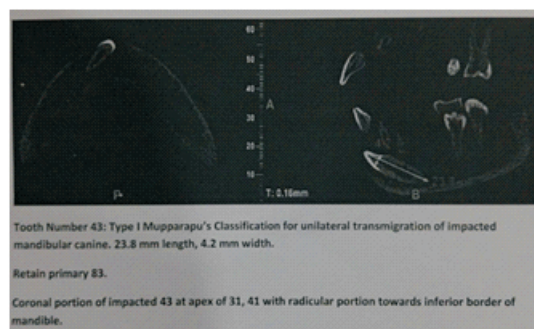


FIGURE 2: CBCT report

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CBCT revealed impacted 43 crown at apex of 31,41 crossing the midline with radicular portion towards inferior border of mandible, showing transmigration of 43 along with retained 83. Final diagnosis of transmigration of impacted mandibular canine was made. Trans alveolar extraction under local anesthesia was planned. Pt's parents were counselled about the condition and treatment.

The routine biochemical investigations were found to be within normal limits. All aseptic measures were properly carried out, and preoperative antibiotic was subsequently given. Full thickness flap was raised and on exposure, we found a bony bulge over the symphysis region [Fig 3].



FIGURE 3: Full thickness mucoperiosteal flap reflected revealing bony bulge

The overlying bone was removed, and the crown was exposed. The tooth was found to be closely placed with the apex of 31 [Fig 4].



FIGURE 4: Buccal cortical plate guttered revealing the crown of transmigrated 4

Thus, the tooth was surgically extracted with some difficulty, without hampering the roots of 31,41 [Fig 5] along with copious irrigation.

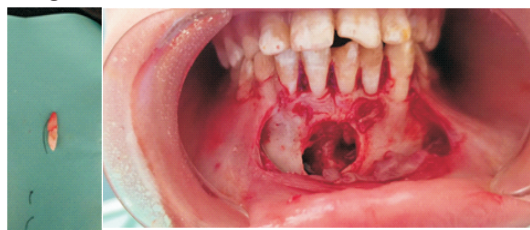


FIGURE 5: Transmigrated 43 extracted and figure showing empty socket



FIGURE 6: Flap repositioned and sutured with 3-0

Soft tissue closure was subsequently achieved with 3-0 vicryl suture [Fig 6].

The patient is under a regular follow-up experiencing no pain since surgery.

Discussion:

An unerupted canine's migration over the mandibular midline, as defined by Tarsitano et al., is known as transmigration. [4]. According to Joshi [5] when tooth migrates across the jaw midline without the influence of any pathological entity is called as transmigration and it is also denoted as developmental anomaly.

As per literature etiologies of transmigration is premature loss or retention of the deciduous canine, long path of eruption, trauma, no anatomical restriction in mandible midline, and genetic predisposition.[4,5]. Stafne and Gibilisco states that the rich blood circulation and active alveolar bone production during the tooth apex growth stage allow unerupted teeth to migrate.[6] Because the maxillary incisor roots are closer to the nasal fossa floor and the roots of neighboring teeth, the maxillary sinus, and the mid-palatal suture, which likely serve as a barrier, limit the path of tooth movement, transmigration of maxillary canines is rare. Thus, mandibular canine is more affected.[7]

In 2002, Mupparapu [8] classified mandibular canine transmigration depending on its path of deviation into five types. Type 1: canine positioned mesio-angularly across the midline within the jaw bone, labial or lingual to anterior teeth, and the crown portion of the tooth crossing the midline (45.6%). Type 2: canine horizontally impacted near the inferior border of the mandible below the apices of the incisors (20%). Type 3: canine erupting either mesial or distal to the opposite canine (14%). Type 4: canine horizontally impacted below the apices of the opposing premolars or molars, close to the inferior boundary of the jaw. (17%). Type

5: canine positioned vertically in the midline (the long axis of the tooth crossing the midline) irrespective of eruption status (1.5%).

Clinically, a retained deciduous canine or delay in the eruption of permanent canine may lead to suspicion of an impacted canine. Other clinical symptoms are swelling or unusual feeling in labial vestibule region, sometimes leading to pain. Pain may be either due to secondary infection in the associated pathology or of neuralgic origin. Nevertheless, the probability of diagnosing this disorder is now greater due to more common CBCT and panoramic radiograph examinations. Correct diagnostics have crucial role for adequate treatment planning. Pre-eruptive tooth migration is a natural mechanism which is necessary for acquiring a proper position in the dental arch.[9]

If left untreated, an impacted canine may result in internal resorption, dentigerous cyst formation, further migration of the neighbouring teeth, loss of arch length and infection as well as external root resorption of not only the impacted tooth but also of neighbouring teeth (Anila Charles, 2012). In cases of impacted canines, surgical extraction is recommended for patients with poor dental health when radiographic and soft tissue factors influence the orthodontic alignment prognosis. (Anila Charles, 2012). [10]

Conclusion:

Transmigration of an impacted mandibular canine is a rare clinical phenomenon usually diagnosed accidentally in a routine radiographic study. Various treatment modalities are available but in cases where it is associated with a pathologic or cystic degeneration, surgical extraction of the impacted tooth is the definite management.

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