CASE REPORT

A rare case of transmigration of mandibular canine associated with an odontoma

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SUMMARY

Transmigration or intraosseous migration of mandibular canine is a very rare phenomenon. Specific aetiology and mechanism of transmigration is still unclear. Majority of these transmigrated canines are impacted, asymptomatic and involve the left mandible. This article describes a rare case of transmigrated mandibular right permanent canine associated with a retained deciduous right canine and an odontoma in a 25-year-old man with a follow-up of 3 years. The present case report also highlights the importance of early diagnosis and periodic monitoring of impacted teeth with panoramic radiography to avoid the occurrence of any associated pathologies and further allow interceptive treatment for possible better results.

appearance was consistent with Mupparapu type I transmigration of mandibular canine.

OUTCOME AND FOLLOW-UP

The patient was not willing to undergo a treatment as it was asymptomatic and was kept under periodic observation. A CT scan revealed an odontoma located lingual to the lower right deciduous canine, and further showed that the transmigrated right permanent canine was positioned labial to and below the mandibular incisors (figures 3 and 4). The panoramic radiograph taken after 3 years revealed no further changes than noted at his initial visit (figure 5).

BACKGROUND

Abnormal movement of unerupted canine to the contra lateral side of the arch has been termed as transmigration.¹ Transmigration of mandibular canines is a very rare phenomenon with a reported incidence ranging from 0.17% to 0.46% in the literature.^{2–5} Transmigrated canines are usually asymptomatic and are often located either buccally or lingually beneath the apices of lower teeth,⁶ and may cause root resorption and altered axial inclination of the adjacent teeth.^{2–7} This article describes a rare case of transmigrated mandibular canine associated with a retained deciduous canine and an odontoma in a 25-year-old male patient, with a follow-up of 3 years.

CASE PRESENTATION

A 25-year-old Indian man presented to a dental setting for a routine dental visit. His medical history was unremarkable. Clinical examination revealed the presence of a retained mandibular right deciduous canine with grade I mobility, while lower right permanent canine was clinically missing (figure 1). No other significant abnormalities were noted.

A panoramic radiograph revealed the presence of a radiopaque mass below the root apex of 83 (FDI notation), which was suggestive of an odontoma. Further, a mesioangularly impacted lower right permanent canine was seen across the midline apical to the incisors and left canine, with its crown oriented towards the apex of left permanent mandibular canine above the inferior dental canal (figure 2). History revealed that the impacted canine was asymptomatic and there was no evidence of pathological changes. Mandibular lower incisors were vital, and right deciduous canine showed evidence of mild apical root resorption. The radiographic

DISCUSSION

Migration of the canine across the midline, regardless of the distance has been referred to as transmigration. Anterior mandibular region with a large cross-sectional area, predisposes to higher frequency of mandibular canine transmigration.⁸ The specific aetiology and mechanism of this phenomenon is not clear. Possible aetiology suggested in the literature included retained deciduous canine, supernumerary teeth, inadequate space, odontomas, tumours and cysts, hereditary and traumatic factors.¹ Aberrant eruption of teeth may also result from abnormal eruption pathway because of defective osteoclastic function caused by localised disturbance in the dental follicle.⁹

Taguchi *et al*¹⁰ had attributed displacement of canine or aberrant eruption of canine to the presence of an odontoma. Similarly, in our patient, transmigration of right permanent canine may be attributed to the presence of its over retained predecessor and an odontoma located apical to its root apex, which would have caused a deflection in the path of eruption of the permanent canine resulting

Figure 1 Intraoral picture showing retained right deciduous canine.

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Figure 2 Panoramic radiograph taken during initial visit showing an odontoma and transmigrated lower right permanent canine.

in transmigration. The patient was unaware of the condition as the whole episode was asymptomatic.

Mupparapu had classified transmigration into five types based on pattern of migration and position of canines in the jaw.¹¹ The case reported here corresponds to the type I variant of transmigration, that is, canine impacted mesioangularly below incisors, labial or lingual, across the midline. Studies reported left canine to be more frequently affected by transmigration,^{1 12} while our case presented with a transmigrated right permanent canine.

Treatment modalities suggested in the literature include surgical extraction, transplantation, orthodontic alignment after crown exposure and observation.^{3–6} Most authors preferred surgical extraction as their choice of treatment,^{1 13 14} which however, depends on the developmental stage and the distance of migrated canine.

Removal of the odontoma resulting in the improvement of canine position has been suggested in the literature.¹⁰ In the present case, early diagnosis of the phenomenon would have facilitated extraction of retained deciduous canine and odontoma thereby, enhancing the normal eruption of mandibular right permanent canine into its proper position. Indeed, as the patient was asymptomatic and was not aware of the condition, early diagnosis was not possible. Periodic observation including a series of following radiographs was chosen owing to the impacted and symptomless nature of the migrated canine in the present case, which corroborates with the recommendation of other authors.^{3–5 15}

Although they are asymptomatic, complications like root resorption of adjacent teeth, cyst formation, infection and pain due to pressure on the inferior alveolar nerve may warrant long-term monitoring of the phenomenon at regular intervals.

Figure 3 Axial CT showing evidence of an odontoma located lingual to the retained lower right deciduous canine.

Figure 4 Position of migrated canine as seen in axial CT.

Figure 5 Panoramic digital radiograph taken at the age of 28 years.

Regular radiographic evaluation with panoramic radiography helps in detecting such anomalies at an early stage. Further, one should suspect the presence of such aberrations whenever retained deciduous canines are present in either of the arches, and a panoramic radiograph should be advised to avoid misdiagnosis.

Learning points

- ▶ Transmigration refers to the abnormal movement of an unerupted canine to the contra lateral side of the arch.
- ▶ Mandibular anterior region with a large cross-sectional area predisposes to higher frequency of canine transmigration.
- ▶ Usually asymptomatic, but early diagnosis may aid in the proper eruption of the transmigrated canine.

Competing interests None.

Patient consent Obtained.

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