

CASE REPORT

Dentigerous Cyst associated with a Transmigrated Canine

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ABSTRACT

Impacted canines are not uncommon, but movement of impacted canine crossing the midline (transmigration) is a rare phenomenon. The study discusses the case report of a transmigrated mandibular canine associated with a dentigerous cyst in a 17-year-old female patient. Mandibular canines are cornerstones of dental arch and their importance is manifested by stability of dental arch, maintenance of normal facial expression, and masticatory efficiency. Early detection of this condition by the use of radiographs, especially panoramic radiographs, and preserving the canine by orthodontic intervention or surgical transplantation are needed.

Keywords: Canines, Mandible, Transmigration.

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INTRODUCTION

Failure of eruption of the mandibular canine is an unusual event.¹

Unerupted tooth usually migrates to a location some distance away from the site of its origin, but is usually confined to the same quadrant. An even less common finding is the migration of a mandibular canine from its normal position to the contralateral arch crossing the midline. This phenomenon known as transmigration occurs exclusively in mandibular canines.²

The term transmigration was first used by Ando et al.³

Transmigration is defined as the phenomenon of an unerupted mandibular canine crossing the midline.³ The definition was later expanded to include cases where more than half of the tooth crossed the midline.⁴

Transmigrated canines usually remain impacted and asymptomatic, or they erupt ectopically at the midline or contralateral arch.

Transmigrating tooth can occasionally give rise to resorption of roots or tilting of adjacent tooth with neuroalgalic symptoms.

Cases where the tooth had migrated to adjacent structures like coronoid process causing pain and discomfort have also been reported.⁵

This study discusses the case report of a transmigrated mandibular canine, which was also associated with a dentigerous cyst.

CASE REPORT

A 17-year-old female patient reported to the ESIC Super Speciality Hospital, Asramam, Kollam, Kerala, India, with a swelling over the mandibular symphysis area with occasional pain (Fig. 1). Palpation showed a firm consistency over the symphysis lower border of mandible area. Dental examination of the patient showed retained 83 and absence of 43.

Panoramic radiograph was requested, which showed a transmigrated 43 in a horizontal position, with the crown below the contralateral 33 and the root below the mandibular incisors (Fig. 2). The tooth was lying close to the lower border of mandible.

A radiolucency was seen surrounding the crown of the teeth attached to the neck of the tooth mimicking a dentigerous cyst (Fig. 3).

Various treatment options were considered, and it was finally decided to extract the tooth extraorally considering its proximity to the lower border of the mandible.

The extracted tooth with the cystic capsule was sent for histopathological examination. It showed thin

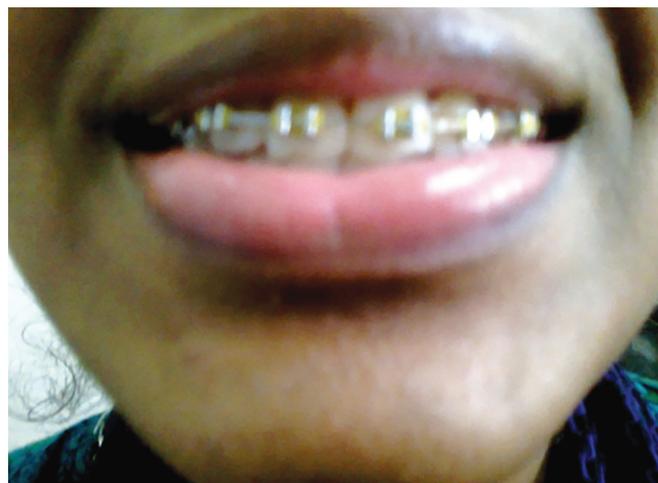


Fig. 1: Preoperative view

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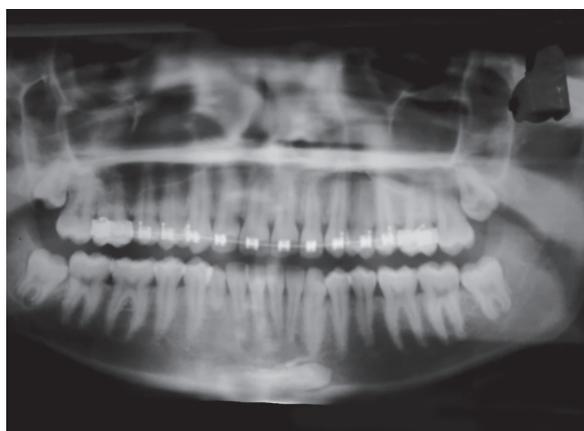


Fig. 2: Panoramic radiograph showing horizontally impacted left mandibular canine located at symphysis of mandible crossing the midline

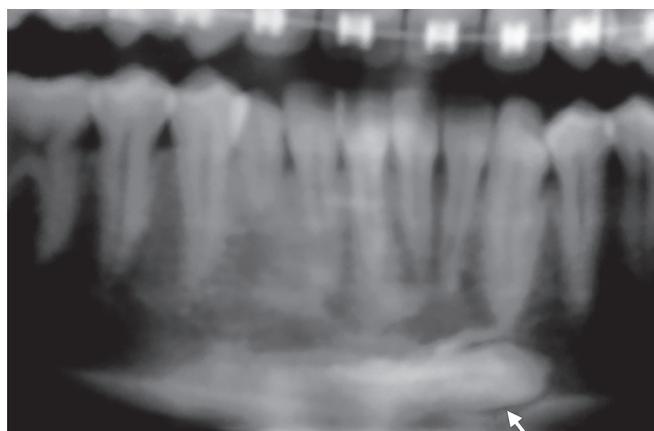


Fig. 3: Cystic space surrounding the impacted canine

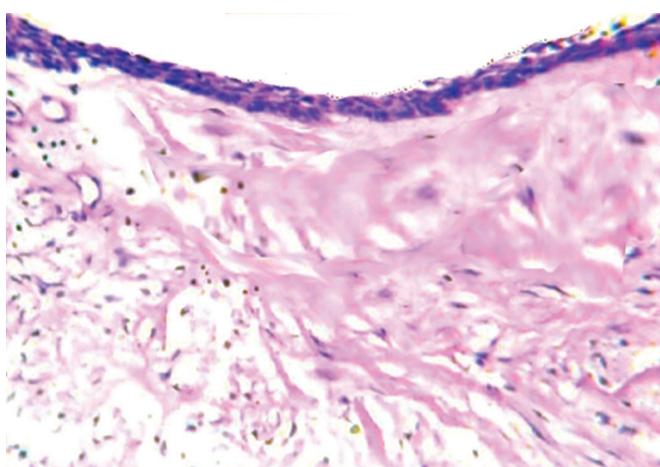


Fig. 4: Histopathology showing features of Dentigerous cyst

connective tissue wall with a thin layer of stratified squamous epithelium. Rete peg formation was absent and the connective tissue wall showed varying islands of odontogenic epithelium (Fig. 4). These features confirmed the features of dentigerous cyst.

DISCUSSION

Canine impaction is more prevalent in maxilla⁶ than in mandible, but canine transmigration is frequent in the mandible.⁷ Mandibular canine is the only tooth where migration and crossing midline has been documented.²

Transmigration of canine is a rare phenomenon with about 0.31% incidence.⁸ Transmigration is more frequent in females than males.⁹

Mupparapu¹⁰ used the below criteria to classify transmigrated canines:

- *Type I:* The canine is impacted mesioangularly across midline, lateral, or lingual to the anterior tooth with crown portion of tooth crossing the midline.

- *Type II:* The canine is horizontally impacted near the inferior border of the mandible below the apices of incisors.
- *Type III:* The canine has erupted mesial or distal to the opposite side.
- *Type IV:* The canine is horizontally impacted near the inferior border of mandible below the apices of either premolars or molars on the opposite side.
- *Type V:* The canine is positioned vertically in the midline with long axis of the tooth crossing the midline.

The present case is a classical example of type II transmigration with mandibular canine at lower border of mandible and horizontally impacted below apices of incisors.

Javid⁵ proposed that transmigration should be considered when half the length of the crown crosses the midline. Joshi¹¹ suggested that it is not the distance of migration after crossing the midline, i.e., important but the tendency to cross the midline.

Tumors, cysts, odontomas may cause malposition of teeth if they lie in the path of eruption.³ Other suggested factors include premature loss of deciduous teeth, retention of deciduous canine, crowding, spacing, supernumerary teeth, and excessive length of crown of mandibular incisors.¹²

In the present case, it can be safely assumed that transmigration occurred due to presence of dentigerous cyst. Dentigerous cyst may severely displace the associated tooth. The tooth can transmigrate due to cystic pressure.¹³

Several treatment options are proposed for transmigrated canines, including surgical removal,¹⁴ transplantation,¹⁵ exposure and orthodontic treatment,¹⁶ and in some cases plain observation.¹⁷

In this case, extraction was the ideal option for the following reasons:

- Location of canine at lower border of mandible with no chance of bringing it back to the original location.

- Presence of a cystic capsule around the tooth attached to neck of tooth and the histopathological confirmation of a dentigerous cyst.
- Presence of a bulge in the lower border symphysis region with occasional painful symptoms.

Thoma¹⁸ suggested that transmigrated canines usually have to be removed. Fiedler and Alling¹⁴ recommend extraction of a transmigrated canine

CONCLUSION

Transmigration of canine is a rare event caused by multiple etiologies. The presence of over-retained mandibular deciduous canine or missing permanent canine should be clinically and radiographically investigated. Further documentation of this anomaly can lead to improvement of the classification system and better understanding of this condition.

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