

Abberantly placed impacted mandibular canine

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Abstract

Pre-eruptive migration of a tooth across the midline is termed as transmigration. It is believed that transmigration is rare and unique to the mandibular permanent canines, and even more rarely reported for others. Transmigration is a phenomenon of yet unknown etiology. It follows the direction of its long axis, with the crown leading the migration. The tendency of a canine to cross the barrier of mandibular midline suture is a more important consideration than the distance of migration after crossing the midline. Here we present one new case of aberrantly positioned right mandibular canine which has undergone migration and was accidentally found on radiological examination before orthodontic treatment. Once diagnosed an aberrantly positioned impacted canine requires surgical removal.

Keywords: Aberrant, impacted, mandibular canine and migration, transmigration

Introduction

Failure of the tooth to erupt into the dental arch, usually due to either space deficiency or presence of an entity blocking its path of eruption results in impaction. An impacted tooth occasionally migrates to a location some distance away from the site in which it develops but usually remains within the same side of the arch.^[1] When such a tooth crosses the midline, this rare phenomenon is known as dental transmigration.^[2]

The term transmigration was first used by Ando *et al.*^[1] as it appears to be the most appropriate of all terms since canine migrates from one side of the jaw to the other side crossing the midline. According to Javid: An impacted mandibular canine that has crossed the midline more than half of the length should be considered as transmigrated. The first reported case of a canine transmigration was in 1951. It is believed that transmigration is unique to the mandibular permanent canine, and even more rarely reported for others. Transmigration is a phenomenon of yet unknown etiology.^[3] Migration may occur as a result of localized pathological

process, such as cystic lesion or an odontoma.^[4] The path of least resistance probably determines the direction of movement of the migrating tooth. It follows the direction of its long axis, with the crown leading the migration.^[4]

Case Report

We are presenting a case of 22-year-old female patient who reported to the Department of Oral and Maxillofacial Surgery which was referred from the Department of Orthodontia with the impacted right mandibular canine in an aberrant position [Figures 1]. The type of this canine according to the classification is type 2 with the angulation of 90° which was detected accidentally on a panoramic radiograph. The tooth was lying horizontally at the inferior border of the mandible below the apices of the lower incisors. The patient was planned for impaction. Patient's hematological investigations were within normal limits and had no past medical history.

Under strict aseptic conditions patient was painted with povidone iodine and draped. Right inferior alveolar nerve block was administered using 2% lignocaine with adrenaline. Incision was extended from right premolar to left premolar and two releasing incisions were given in the vestibule bilaterally. The mucoperiosteal flap was raised. Mandibular symphysis was exposed till the inferior border of mandible. This was a full bony impaction. Bone cutting was done using a number 8 stainless steel round bur; a window was made which was more widened by cutting the buccal cortical plate. This was followed by tooth sectioning below the cemento-enamel junction. The crown was separated from the root. It was removed with slight luxation [Figures 2]. Thorough irrigation was done with normal saline. The primary closure and hemostasis was achieved [Figure 3].

Discussion

Impacted teeth are very important in oral and maxillofacial surgery and are particularly significant in case of canine

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Figure 1: Orthopantomogram of patient showing transmigrated mandibular canine



Figure 2: Surgical exposure of the transmigrated canine



Figure 3: Extracted canine

as the impaction of mandibular canine is 20 times rarer than that of maxillary canine^[5] and it is even more rare when such an impacted canine migrates to other side of the mandible crossing the midline. Failure of eruption of mandibular canine is an unusual event and is worthy of investigation. In the classic transmigratory pattern, the tooth crosses the midline in either horizontal or vertical axis.^[5]

Mupparapu^[6] proposed classification for transmigrated teeth and he classified these teeth into five types based on their

migratory pattern and their position in jaw. Our case presents type 2 in accordance with this classification.

The aberrantly positioned teeth maintain their nerve supply from the original side.^[7] Mandibular left canine was found to be affected more than the right one^[7] and in our case we have right side canine involvement. Transmigration is seen more in females than in males. The reported ratio is 1.6:1^[7] and in our case we also have a female patient.

Although a number of factors have been suggested with regard to transmigration, the etiology and exact mechanism is still unclear. Nodine^[8] reported that it is not possible to put forward a definite etiological factor responsible for this anomaly. Some other factors are: Retention or premature loss of primary teeth, crowding, spacing, supernumerary teeth and an excessive crown length of mandibular canine. Etiology of our reported case is unknown.

Nodine^[8] reported that impacted and migrated mandibular canines often do not produce any apparent symptoms and Ando *et al.*,^[9] did not observe symptoms such as oppression of the mandibular nerve due to transmigration of canine. In our case we also did not observe any kind of symptoms which could reveal the presence of a migrated canine.

Those impacted canines that were between 30 and 95° are a group that tends to cross the midline.^[5] An overlap appears to exist between 30 and 50°. When this angle exceeds 50°, crossing the midline becomes a rule.^[5] Considering this rule, the migratory canine in the present paper is at 90°.

Shapira and Kuflinec^[7] stated that this abnormality was usually accompanied by a cyst or odontoma. Joshi^[5] stated that it was difficult to differentiate whether these pathological conditions were responsible for transmigratory process or vice-versa, happened. In the case we present, no pathology of any cystic type is reported through the radiograph. This shows that it is not necessary that transmigration is associated with pathology.

Treatment of choice, can be orthodontic repositioning,^[10] surgical extraction^[11] of the aberrantly placed canine, transplantation and surgical exposure with orthodontic alignment.^[7] We chose surgical extraction of the transmigratory canine as the best treatment of choice.

In conclusion, transmigration of mandibular canine is a rare and elusive event in the dental literature. Early radiographic examination of the patient is important for treatment planning. The etiology is obscure and no symptoms are usually seen. The presence of an over retained deciduous canine should always be investigated. Further documentation of this anomaly may lead to its inclusion as one of the developmental anomalies of teeth.

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