

Bilateral Mandibular Canine Impaction: A Rare Case Report

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ABSTRACT

Retention that is a permanent tooth which is unerupted more than a year after the normal age of eruption is a relatively rare event, except in the case of the third molars and the upper canines. We report the case of a 17 year old female presenting with bilateral mandibular canine impaction. This rare condition usually requires extraction of the involved tooth because orthodontic forces are seldom successful at erupting these teeth into their proper location. Henceforth, the canines were extracted.

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Impaction refers to a failure of a tooth to emerge into the dental arch, usually due to either space deficiencies or the presence of an entity blocking its path of eruption. Although heredity has long been described as playing a role, many times the etiology is unknown. Impacted teeth are commonly found in the dental practice and they pose a threat for the maintenance and continuity of dental health. Primarily because of their eruption pattern and sequence, canines are especially prone to impaction and the maxillary canines are affected 20 times more frequently than mandibular canines.(1)

Case Report

The patient was 17 year old when she presented for orthodontic consultation. Review of the medical history revealed no allergic or medical problems. She was in good health and had no contraindications to dental treatment. No

signs or symptoms of temporomandibular dysfunction were noted. There was no history of trauma to the mouth, teeth, lips or jaws. Complete intraoral examination of the patient revealed retained deciduous canines following which a panoramic radiograph was advised to look for the permanent canines (Fig. 1).

The radiograph revealed bilaterally impacted mandibular canines, the right mandibular canine was positioned labial to the right lateral incisor, where as the left mandibular canine was located between the roots of left central incisor and lateral incisor (Fig. 2, 3).

Surgical removal of the impacted canines was planned and the canines were removed. Treatment objectives were explained



Fig. 1: Intraoral view of the patient

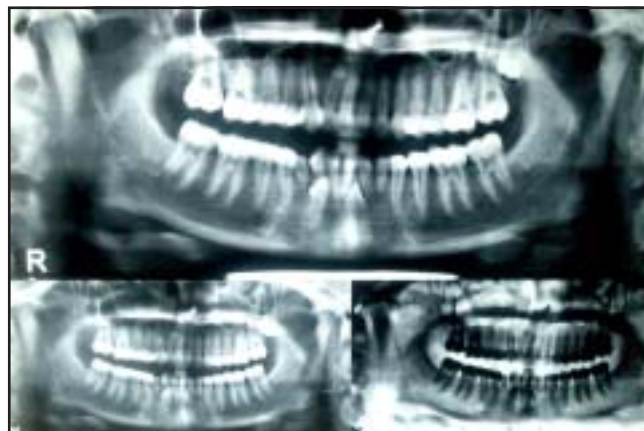


Fig. 2 : OPG revealing bilaterally impacted mandibular canines



Fig. 3 – Close-up view of the orthopantomograph
 1 Left canine
 2 Right mandibular canine



Fig. 4: Flap raised with right canine exposed.

to the patient and her mother and informed consent was obtained. The decision on whether to extract these teeth can be dependent on whether arch perimeter deficiencies exist, which would favor an extraction method of treatment anyway. In this patient upright incisors and minimal crowding supported extraction of no further permanent tooth other than the impacted



Fig. 5: Bone cutting done to expose the left canine



Fig. 6: Both impacted canines after removal.

canines (Fig. 1) Removal of the right mandibular canines was achieved with minimal bone cutting and the tooth was removed as whole

(Fig.4) whereas the removal of left mandibular canine required ostectomy to expose the crown as well as tooth sectioning to achieve its removal.

(Fig.5, 6) The areas were thoroughly irrigated with betadine & saline & the flap was sutured back in place.

(Fig. 7, 8) The patient was recalled after one week to check for healing and the sutures were removed. (Fig. 9)

Discussion

Failure of eruption of the mandibular canine is an unusual event.(2) Mandibular canine impaction is regarded as a much rarer phenomenon and there are limited number of studies revealing its frequency of occurrence. The incidence of maxillary canine impaction is in the range of 0.8 to 2.8% and the prevalence is 0.9 to 2.2%. Grover and Lorton(3) found only 11 impacted canines (0.22%) in the mandible in 5000



Fig. 7: Hollow bone after removal of impacted canines



Fig. 8: Flap sutured back in place.

individuals. Chu *et al*(4) reported five mandibular impacted canine (0.07%) teeth in 7486 patients. A study by Rohrer(5) examining 3,000 patients radiographically found 62 impacted maxillary canines (2.06%) and only three impacted mandibular canines (0.1%), a 20:1 ratio. In another study by Aydin *et al* involving 4500 Turkish patients, the incidence of mandibular canine impaction was 0.44%.

There are many reasons why canines fail to erupt.(6) Most surgeons agree the reasons may include a suspected pathological condition, infection, interference with prosthetic devices, disturbance of the existing dentition, pain, and ectopic eruption. Many authors have also speculated about the cause of impacted mandibular canines.(7) These causes include inadequate space, supernumerary teeth, premature loss of the deciduous canine, excessive crown length, hereditary factors, functional disturbances of the endocrine glands, tumors, cysts and trauma.(2, 6-9)

Impacted mandibular canines are also more likely to be located on the labial aspect of the dental arch than are maxillary



Fig. 9: Post operative view of the patient showing complete healing.

canines,(10) and the removal of impacted teeth routinely involves an intraoral surgical approach. But Plumpton(11) suggested that some extractions of the impacted mandibular canine teeth may be done via an extraoral surgical approach.

There are several treatment options proposed for impacted mandibular canines including surgical removal, exposure and orthodontic alignment, transplantation and observation. Some authors believe asymptomatic impacted teeth can be left in place, but in these patients a series of successive radiographs should be taken periodically. Observation of impacted mandibular canines may be indicated in the following circumstances.(12)

- A systemic contraindication to a surgery exists.
- There is a deeply impacted asymptomatic mandibular canine with no associated pathology, particularly in an older patient.
- Whenever the patient has a satisfactory dental appearance and does not want surgical intervention.
- If the deciduous canine has a good root length and it is esthetically acceptable observation of an asymptomatic mandibular canine can be recommended.

Surgical extraction is necessary in the following situations.

- The existence of infection, cyst, or tumor related to the impacted canine.
- The impacted tooth causes the periodontal disturbance of the adjacent teeth.
- The presence of neuralgic symptoms.
- Crowding of the mandibular arch requiring therapeutic extractions to correct crowded incisor teeth.
- The impacted canine is ankylosed and cannot be transplanted.
- There is evidence of root resorption affecting the adjacent teeth.
- The root of impacted canine is severely dilacerated.
- Severe impaction of canine tooth.
- Patient rejection of orthodontic treatment or transplantation.

Conclusion

The presence of over-retained mandibular deciduous canine or missing permanent canine should always be clinically and radiographically investigated. Before extraction, care must be taken to administer proper anaesthesia on the side from which the extraction has to be carried out.

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