

Transmigrated Canines Associated to Odontomas

Caninos Transmigrados Asociados a Odontomas

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SUMMARY: We present the case of a 13-year-old patient with bilateral transmigration of mandibular canine associated with multiple composite odontoma. Impacted canines are very uncommon, with a 0.1 % to 3.6 % prevalence of appearance. The presence in the mandible is less frequent. The odontoma development is often associated with the impacted canines. The etiology is unknown but is associated with traumatic, infectious, hereditary or genetic factors. This pathology is asymptomatic and associated with eruption disorders in temporal and permanent dentition.

KEY WORDS: Transmigrated canines; Odontomas; Panoramic radiography; Cone beam ct.

INTRODUCTION

Impacted canines are considered a rare phenomenon, with a prevalence of 0.1 % to 3.6 % in general population (Aydin *et al.*, 2004), being more frequent in the maxilla than in the mandible, where it only reaches a prevalence between 0.17 % and 0.46 % (Mazinis *et al.*, 2012). It is usually an asymptomatic phenomenon and is located by buccal or lingual of the apexes of the lower incisors. It can cause root resorption and/or inclination of the axial axis of the adjacent teeth (Celikoglu *et al.*, 2010).

The pre-eruptive migration of an impacted or retained canine through the midline is a phenomenon known as transmigration, which occurs more frequently in the mandible than in the maxilla (Aydin & Yilmaz, 2003), with a reported prevalence in the literature ranging from 0.1 % to 0.34 % (Aktan *et al.*, 2010).

Impacted canines are often associated with the development of odontomas (Mehra & Singh, 2007; Flores Ruiz *et al.*, 2013; Madiraju *et al.*, 2013; Erdur *et al.*, 2016). Odontomas are the most common odontogenic tumors of the jaw (Vaid *et al.*, 2012). They are mixed tumors consisting of epithelial and mesenchymal cells, composed of dental tissues such as enamel, dentin, pulp and cement (Tyagi & Singla, 2010).

Odontomas are recognized as developmental disorders and are classified as compounds and complexes (Barnes *et al.*, 2005), the first is twice as common as the second, with a prevalence of 76 % of odontogenic tumors (Buchner *et al.*, 2006). Its etiology is unknown but is associated with traumatic, infectious, hereditary or genetic factors such as hyperactivity of odontoblasts, Gardner's Syndrome or Hermann's Syndrome (Raval *et al.*, 2014).

Clinically they are asymptomatic and associated with eruption disorders in temporal and permanent dentition. Their diagnosis is usually coincidental on routine radiographic examinations or in studies of late dental eruption. Its treatment is surgical for repositioning in the arch the impacted or retained tooth (Erdur *et al.*; Ashkenazi *et al.*, 2007).

The aim of this study is to present a case of bilateral transmigration of mandibular canine associated with multiple composite odontoma in a 13-year-old patient.

CASE REPORT

A 13-year-old female patient attended Clinica Odontologica Docente Asistencial (CODA), Dental School, Universidad de La Frontera, due to the absence of mandibular canines. Extraoral examination showed facial symmetry,

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concave profile, Angle class II without alterations (Fig. 1A). At the intraoral examination, multiple restorations were observed, presence of caries and teeth in the state of root rest (Fig. 1B). During the anamnesis, parents informed that the patient was born prematurely and with skin disorders.

As a complementary exam, a panoramic radiography was requested (Fig. 1C). It was observed presence of intraosseous third molars, superficial and deep dental caries, tooth 3,6 with extensive crown destruction, teeth 3,3 and 4,3 included in horizontal position placed in the apical area between the lower right premolars. A radiopaque image of diffuse borders compatible with osteosclerosis is observed. Permanence of tooth 8,3 where is observed an image compatible with composite odontoma.

Cone Beam CT examination is requested (Fig. 1D). Teeth 3,3 and 4,3 are included in ectopic position and mesioversion, tooth 3,3 close to apex of incisors and tooth 8,3 in persistence.

Composed odontoma close to root apex of teeth 8,3, 4,2 and 4,4 and to upper root of tooth 4,3, with a 12,9 mm x 8,3 mm size in the sagittal plane (Fig. 1E) and 9 mm in the coronal plane (Fig. 1F).

Tooth 4,3 presents its crown under tooth 3,3 crown, bi-radicular and an radiopaque area of rounded form, placed in the middle third of mandibular body, next to foramen mentale compatible with idiopathic osteosclerosis (yellow arrow) (Fig. 1G).

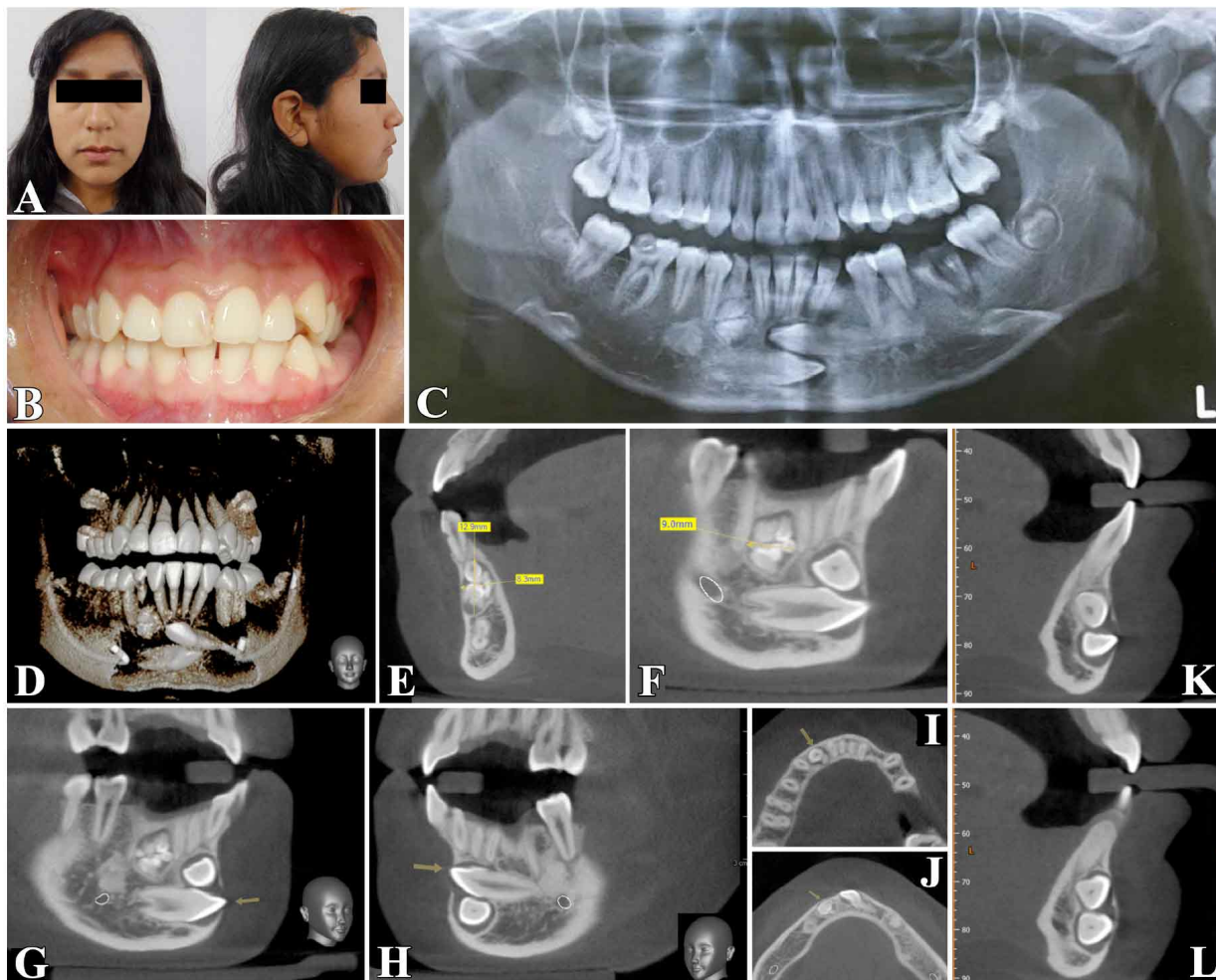


Fig. 1. A. Extraoral examination of the patient. B. Intraoral examination. C. Panoramic radiography, which shows intraosseous third molars, 3,3 and 4,3 teeth placed in horizontal position between the lower right premolars, and permanence of tooth 8,3 compatible with composite odontoma. D. Cone Beam CT examination, with inclusion of teeth 3,3 and 4,3 in ectopic position and mesioversion, persistence of 8,3 tooth. E, F. Composed odontoma close to root apex of teeth 8,3, 4,2 and 4,4 and to upper root of tooth 4,3. G. Tooth 4,3 presents its crown under tooth 3,3 crown, bi-radicular; idiopathic Osteosclerosis next to foramen mentale (yellow arrow). H. Tooth 3,3 presents a pericoronal space of normal thickness, uni-radicular, close to foramen mentale and apex of tooth 4,3, compatible with idiopathic osteosclerosis (yellow arrow). I, J. Axial plane. K, L. Sagittal views at crown levels.

Tooth 3,3 presents a pericoronal space of normal thickness, uni-radicular and an irregularly shaped radiopaque area placed in middle and upper thirds of mandibular body, between roots of 3,4 and 3,5 teeth, close to foramen mentale and apex of tooth 4,3, compatible with idiopathic osteosclerosis (yellow arrow) (Fig. 1H).

DISCUSSION

Migration of canines through the midline is named transmigration. Although the etiology has not been clearly described, one of the factors that may favor transmigration is a large cross-sectional area of the anterior region of the mandible (Aydin *et al.*). Some authors have described as possible etiological factors such as the presence of supernumerary teeth, tumors of odontogenic origin, cysts, hereditary factors and traumas (Joshi, 2001).

Thoma (1952), Shapira *et al.* (1982) and Taguchi *et al.* (2001) attributed canine transmigration to the presence of odontomas, as well as in our case where bilateral mandibular canine transmigration can be attributed to the persistence of temporal canines associated with odontomas located at the apex level. This may have caused deviation in the trajectory of permanent canine eruption and its transmigration. However, it cannot be ensured that the presence of the odontoma is responsible for the transmigration or the pathological condition occurred after the transmigration of canines (Joshi).

Mupparapu (2002) had classified transmigration into five types based on the pattern of migration and the position of the canines in the mandible. The case would present the Type I variant of transmigration, ie, canine retained mesio angularly under the incisors, labial or lingual, across the midline. The studies reported left canine to be more frequently affected by transmigration, while our case presented with a permanent transmigrated right canine.

The treatment modalities suggested in the literature include surgical extraction, transplantation, orthodontic alignment after crown exposure and observation. Most authors prefer surgical extraction as their treatment option, which however, depends on the stage of development and the distance of the migrated canine (Aydin & Yilmaz; Aydin *et al.*; Mehra & Singh; Aktan *et al.*; Celikoglu *et al.*; Mazinis *et al.*; Flores Ruiz *et al.*; Madiraju *et al.*; Erdur *et al.*).

The elimination of odontoma that results in the improvement of the canine position has been suggested in the literature. In the present case, the early diagnosis of the

phenomenon would have facilitated the removal of the retained temporal canine and thus improved the normal eruption of the right mandibular permanent canine in its correct position. In fact, when the patient was asymptomatic and unaware of the condition, early diagnosis was not possible. Periodic observation that includes a series of subsequent radiographs was chosen because of the impacted and asymptomatic nature of the canine migrated in the present case, which corroborates with the recommendation of other authors (Aydin & Yilmaz; Aydin *et al.*; Mehra & Singh; Aktan *et al.*; Celikoglu *et al.*; Erdur *et al.*; Buchner *et al.*; Vaid *et al.*).

Although they are asymptomatic, complications such as root resorption of adjacent teeth, formation of cysts, infections and pain due to pressure on the lower dental nerve can justify the long-term follow-up of the phenomenon at regular intervals.

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RESUMEN: Presentamos el caso de un paciente de 13 años de edad con trans migración bilateral de canino mandibular asociado a múltiples odontomas compuestos. Los caninos impactados son muy poco frecuentes, con una prevalencia de aparición de 0,1 % a 3,6 %. La presencia en la mandíbula es menos frecuente. El desarrollo de odontomas se asocia a menudo con los caninos impactados. La etiología es desconocida pero está asociada con factores traumáticos, infecciosos, hereditarios o genéticos. Esta patología es asintomática y está asociada a trastornos de erupción en dentición temporal y permanente.

PALABRAS CLAVE: Caninos transmigrados; Odontomas; Radiografía panorámica; TC Cone beam.

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