

*Short communication***Congenitally Missing Bilateral Permanent Mandibular Canines**

Kohli A, Gupta K, Singh G, Sharma K

**ABSTRACT:** Congenital absence of tooth (hypodontia) from the dental arch, may occur with any tooth, most commonly being third molars, however, absence of permanent mandibular canine is rare. This condition is even rarer in patients where all other permanent teeth are present except third molars. Here we report one such rare case of congenitally missing mandibular permanent canines bilaterally.

Keywords: Hypodontia; Tooth Agenesis; Oligodontia; Permanent; Mandibular; Canines.

**INTRODUCTION**

Hypodontia is the congenital absence of one or more teeth in the dentition. The overall frequency of patients with congenitally missing teeth (excluding the third molars) has ranged from 1.6-9.6% in various series of studies in different countries.<sup>1</sup> Most commonly missing permanent teeth, excluding the third molars are second premolars (3.4%) and maxillary lateral incisors (2.2%).<sup>2</sup>

The incidence of congenitally missing permanent canine was found to be 0.1% in the maxilla and 0.02% of mandible in a survey of congenitally missing teeth, excluding third molar in 6000 orthodontic patients by Rose.<sup>3</sup>

In this article a rare case of congenitally missing bilateral permanent mandibular canines in an 11 years old girl is described.

**CASE REPORT**

An 11 year old girl reported to the Department of Paedodontics and preventive dentistry, Rama Dental College, Hospital and Research Centre complaining of crowding in upper front teeth region. Her medical history was unremarkable with no family history of congenitally missing teeth or extraction of teeth.

Extraoral examination revealed that the patient had a class 1 skeletal relationship with competent lips. Intraoral examination showed that the patient had an Angle's class I malocclusion with developing crowding and clinically missing 33 and 43. An orthopantomograph was advised. The OPG revealed congenitally missing 33 and 43 (fig 1).



Figure 1: OPG shows congenitally missing permanent mandibular canines.

**DISCUSSION**

Congenital absence of the canines in the permanent dentition is very rare with the incidence reported to be 0.23% by Bergstrom<sup>4</sup>, 0.45% by Davis<sup>5</sup>, 0.18% by Fukuta.<sup>6</sup> Studies have shown that hypodontia affects the maxillary arch more than the mandibular arch. The incidence of congenitally missing permanent canine was found to be 0.1% in the maxilla and 0.02% in mandible<sup>3</sup>, Muller et al reported only three incidences of missing mandibular canines in 14940 North American children, whereas 15 missing maxillary canines were found.<sup>7</sup> Davis<sup>5</sup> found no cases of missing mandibular canine in 1093 students, however five cases of missing maxillary canine were seen.

Fukuta et al<sup>6</sup> in their study showed that male to female ratio affected by congenital absence of permanent canine was 1:2, with left side of maxilla and in the mandible right side being affected more. The same study also showed that there are various complications associated with this condition such as retained deciduous teeth, congenital absence of other teeth, microdontia, malposition of teeth, complete or incomplete impaction of teeth, malocclusion, supernumerary teeth, odontoma and others

excluding third molars. Studies have shown that local, endocrine, genetic and environmental factors are responsible for hypodontia. *Msx1* (*Muscle Segment Box*) is believed to play an important role in tooth development.<sup>8</sup> Familial tooth agenesis is transmitted as an autosomal dominant, recessive or X-linked condition.<sup>9</sup>

List of the genes and molecular pathways involved in tooth agenesis<sup>10</sup>

- Wnt/b-catenin/LEF1
- MSXI
- MSX2
- SHH
- P63
- Pitx2
- Runx2/Cbfa1

Various treatment options for missing mandibular canine include no treatment, closure of spaces orthodontically, restoration with removable or fixed partial dentures and restoration with implant-supported prosthesis. In our case since there was no space present in the mixed dentition stage of the patient, she was kept under observation.

**CONCLUSION:** Understanding of a rare condition like congenitally missing bilateral permanent mandibular canines may be enhanced by reporting of such cases. Early diagnosis and management is desired to improve the oral health of the child.

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