

## CASE REPORT

# Congenitally Missing Permanent Mandibular Central Incisors and Maxillary Second Molars in Conjunction with a Supernumerary Mandibular Central Incisor

<sup>1</sup>Neetu Gupta, <sup>2</sup>Charu Mohar Marya, <sup>3</sup>Abhijeet Kadu, <sup>4</sup>Ruchi Nagpal, <sup>5</sup>Sukhvinder Oberoi, <sup>6</sup>Vandana Dahiya

## ABSTRACT

Congenitally missing teeth are one of the most common dental anomalies which may be termed as dental agenesis. Polygenesis, the formation of one or more supernumerary teeth, occurs much less frequently than agenesis. Hypodontia and hyperdontia are regarded as the opposite dental developmental anomalies. However, their simultaneous presence in the same individual is a rare condition. A case of concomitant hypo-hyperdontia (CHH) is presented here, wherein a 20-year-old female has missing mandibular central incisors, maxillary second molars, and all the third molars. In addition, she has a malformed supernumerary tooth in the mandibular left anterior region. Documentation of such rare case reports is necessary as it helps in minimizing the clinicians' challenge in diagnosing such cases and thus helpful in providing a multidisciplinary approach in treating such patients.

**Keywords:** Hyperdontia, Hypodontia, Polygenesis, Supernumerary tooth.

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## INTRODUCTION

Congenitally missing teeth are one of the most common dental anomalies which may be termed as dental agenesis. The most common congenitally missing teeth are the maxillary lateral incisors followed by maxillary second

premolars and mandibular central incisors. There may be unilateral or bilateral absence of teeth.<sup>1</sup> Congenitally missing primary teeth are rare in occurrence with a prevalence of 0.1 to 0.9% as compared with the permanent dentition with a prevalence rate of 2 to 10%.<sup>2</sup> Congenital absence of mandibular incisors has exhibited racial ethnicity toward Japanese, Chinese, and Korean population. Females have shown higher predilection than males.<sup>3</sup>

Supernumerary teeth or hyperdontia is an excess number of teeth when compared with the normal dentition. It can be classified according to positions in the dental arch (mesiodens, paramolars, postmolars, or impacted).<sup>4</sup> Hypodontia and hyperdontia are regarded as the opposite dental developmental anomalies. However, their simultaneous presence in the same individual is a rare condition. It has been found more often in the permanent dentition than in primary or mixed dentition.<sup>5</sup> To describe the simultaneous presence of hypodontia and supernumerary teeth, the term CHH was introduced by Camilleri.<sup>6</sup>

Documentation of such rare case reports is necessary as it helps in minimizing the clinicians challenge in diagnosing such cases and thus helpful in providing a multidisciplinary approach in treating such patients.

## CASE REPORT

A 20-year-old female reported to the Department of Oral Medicine and Radiology of Sudha Rustagi College of Dental Sciences and Research Centre, Faridabad, Haryana, India, with the chief complaint of spacing in lower anterior teeth and lisping of speech due to spacing. The spacing was there because of the exfoliation of deciduous teeth as no permanent teeth erupted in that place. There was no history suggestive of any dental extraction or traumatic avulsion of teeth. The family history of hereditary tendencies to supernumerary or congenitally missing teeth was negative. A detailed medical history of the patient along with her first blood relations did not reveal any significant findings. She was well built and nourished with mesomorphic form of body.

She had a grossly symmetrical face with mesoprosopic facial pattern and pleasant convex profile. The intraoral examination revealed well-formed arches with 26 teeth, wherein maxillary left deciduous canine was retained and

<sup>1</sup>Senior Lecturer, <sup>2</sup>Professor and Head, <sup>3-4</sup>Reader, <sup>5</sup>Dental Officer

<sup>1,2,4,5</sup>Department of Public Health Dentistry, Sudha Rustagi College of Dental Sciences & Research, Faridabad, Haryana India

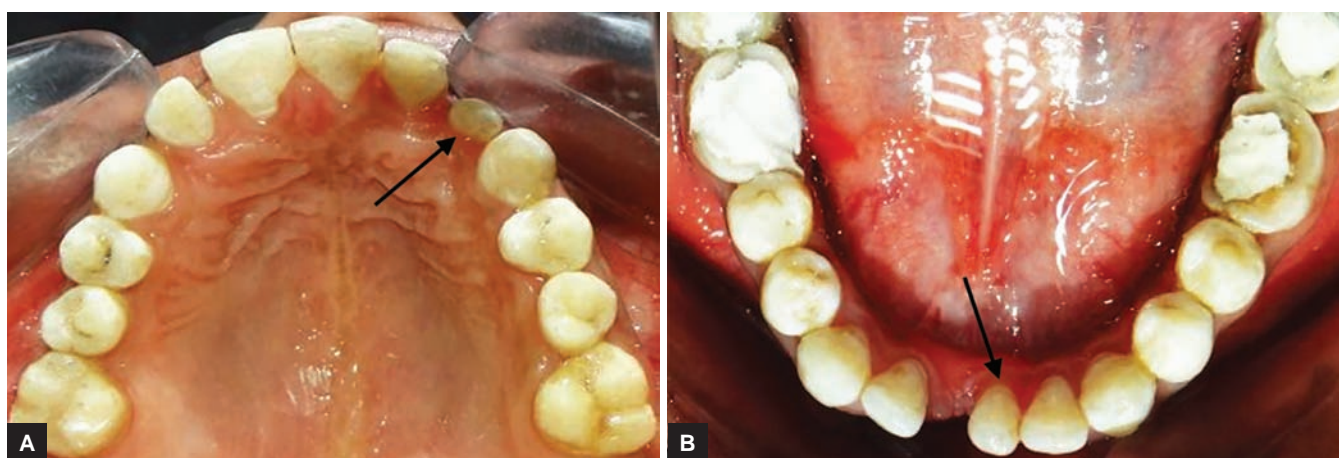
<sup>3</sup>Department of Orthodontics, Army Dental Centre Research and Referral, New Delhi, India

<sup>6</sup>Department of Endodontics, Civil Hospital, Faridabad, Haryana India

**Corresponding Author:** Neetu Gupta, Senior Lecturer Department of Public Health Dentistry, Sudha Rustagi College of Dental Sciences & Research, Faridabad, Haryana, India, Phone: +919971530710, e-mail: drneetukadu@gmail.com



**Figs 1A and B:** Clinical photographs showing presence of retained deciduous left maxillary canine (A) and supernumerary tooth present in lower anterior region and missing bilateral mandibular central incisors (B)



**Figs 2A and B:** Intraoral photographs (mirror view) showing maxillary arch with missing bilateral maxillary second molars (A) and mandibular arch with supernumerary tooth (B)

there was a malformed supernumerary tooth present in lower anterior region in place of left mandibular central incisor (Fig. 1). Mandibular central incisors, bilateral maxillary second molars, and all third molars were clinically absent. She had a total of 24 erupted permanent teeth. There were restorations in mandibular molars bilaterally with spacing in upper and lower anterior teeth (Fig. 2). Orthopantomogram and intraoral periapical view of mandibular anterior region was advised for comprehensive radiological assessment of dentition which revealed missing mandibular central incisors, bilateral maxillary second molars, and all third molars. There was a retained maxillary deciduous left canine mesial to maxillary permanent left canine and a supernumerary tooth in the mandibular left anterior region in place of mandibular left central incisor (Fig. 3).

Considering the chief complaint of the patient and the clinical and radiological examination, a diagnosis of CHH was derived.<sup>6</sup>

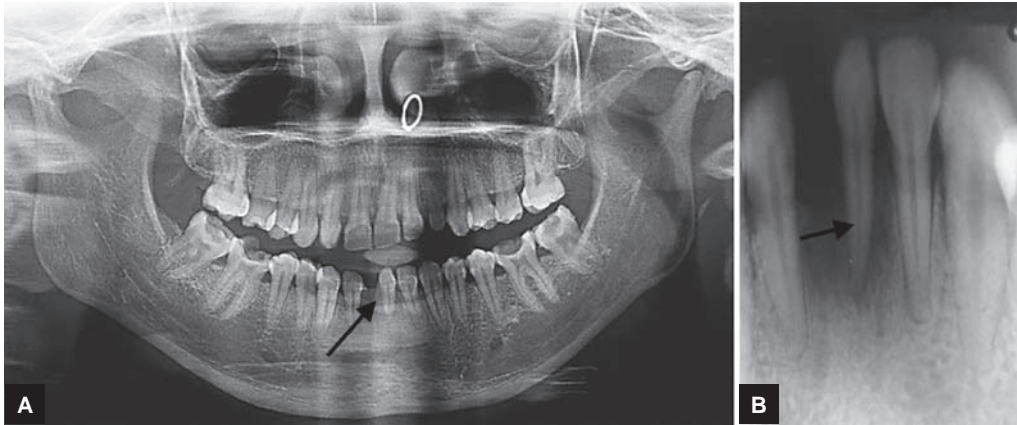
The condition was explained to the patient and was presented with the option to extract the mandibular supernumerary tooth and retained left maxillary deciduous canine, followed by orthodontic treatment to close the

space as much permitted orthodontically, in the anterior maxillary region. This was supposed to be followed by placement of dental implants in the mandibular anterior and maxillary posterior region to replace the missing teeth. However, the patient refused treatment because of financial and time constraints and was ultimately lost to follow-up.

## DISCUSSION

A case of CHH is presented here, wherein a 20-year-old female has missing mandibular central incisors, maxillary second molars, and all the third molars. In addition, she had a malformed supernumerary tooth in the mandibular left anterior region. After a thorough literature search, the rarity of such an occurrence prompted the authors to present this case.

When the tooth or teeth are clinically and radiographically absent and there is no history of extraction or traumatic avulsion of teeth, it is termed as agenesis or hypodontia. Literature search reveals that 15% of missing teeth are lower second premolars, 19% upper second premolars, 29% upper lateral incisors, 11% lower first premolars, 3% lower central incisor, and 1% are



**Figs 3A and B:** Panoramic radiograph revealing the absence of mandibular central incisors and maxillary second and third molars with the presence of a conical supernumerary tooth and overretained maxillary left deciduous canine (A) and intraoral periapical view showing absence of mandibular central incisors with the presence of a supernumerary tooth (B)

lower lateral incisor. Hypodontia of second molars and canine is rare (0.7% of missing teeth). Furthermore, 71% of individuals with hypodontia of some other teeth also lacked third molars.<sup>7</sup> In the case presented here, bilateral maxillary second molar agenesis is present, which is one of the rarest reported findings.

Polygenesis, the formation of one or more supernumerary teeth, occurs much less frequently than agenesis. The most frequent site for occurrence are the maxillary central and lateral incisor regions.<sup>1</sup> The etiology of supernumerary teeth is not known and completely understood. Local, independent, conditioned hyperactivity of the dental lamina can be considered as hypothesized etiology for polygenesis of teeth.<sup>8</sup> Depending on the morphological features, the supernumerary teeth can be described as conical or tuberculate pattern, with conical form being most common. The supernumerary teeth which resemble the normal series and generally smaller are called as supplemental supernumerary teeth. Depending on their location, the supernumerary teeth that occur between or just posterior to the central incisors are referred to as mesiodens; those in molar area are called paramolar teeth; and more specifically, those that erupt distally to the third molar are distomolar teeth.<sup>9</sup> The occurrence of supernumerary teeth is more common in permanent teeth than primary teeth varying from 0.5 to 3.8% in permanent dentition to 0.3 to 0.6% in primary dentition. Mesiodens are the supernumerary teeth that occur most frequently with the prevalence of 0.15 to 1.9%, followed by paramolars (0.08–0.15%) and distomolars (0.13–0.6%).<sup>10</sup>

The CHH is rarely reported in the literature,<sup>11–15</sup> but the presence of supernumerary with the absence of maxillary second molars reported here is extremely rare finding. Surveys done by Mercer<sup>16</sup> estimated the probability of the combined defect of hypo-hyperdontia between 0.08 and 0.15%, whereas Rose<sup>17</sup> and Brook<sup>18</sup> reported a prevalence of 0.13 and 0.09% respectively. Its prevalence

has been reported to be 0.3% in patients with cleft lip and palate, 0.4% among Chinese schoolchildren, and 0.45% among the Irish population.<sup>5,19,20</sup>

A thorough clinical and radiographic examination is essential for early diagnosis of the coexisting hypo-hyperdontia. During the mixed dentition years, treatment planning should be based on the dental age rather than the chronological age of the patient.

The presented case is peculiar as it has bilaterally missing maxillary second molars and mandibular central incisors with malformed supernumerary tooth mesial to mandibular left lateral incisor. The general examination and medical and family history is not suggestive of any syndrome or any medical condition. This was a unique case of hypo-hyperdontia with bilaterally missing maxillary second molars and mandibular central incisors with supernumerary tooth, which is rarely reported in the literature.

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