

# HYPODONTIA AND SUPERNUMERARY TOOTH IN THE MANDIBULAR ARCH: AN UNUSUAL CASE REPORT

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## ABSTRACT

Concomitant hypodontia and hyperdontia is a rare mixed numeric dental anomalous condition. Only few case reports of such unusual condition exist in the literature. The presence of these conditions in the same area of dental arch and specifically in the mandibular anterior region is infrequently reported. This report presents a case of 20-year-old male with congenitally missing permanent mandibular central incisors in conjunction with a supernumerary tooth in the same arch. The clinical and radiographic appearance, etiology and prevalence of this rare condition are discussed.

**Key Words:** Hypodontia, Hyperdontia, Supernumerary teeth, Mandibular arch

## INTRODUCTION

Supernumerary teeth or hyperdontia is defined as an excess number of teeth when compared to the normal dental formula.<sup>1</sup> Congenital absence of teeth is the most common developmental anomaly in humans.<sup>2</sup> Like supernumeraries, congenitally missing teeth are common in permanent dentition and have a high prevalence rate ranging from 3.5 to 8 percent.<sup>3</sup>

The terms 'concomitant hypo-hyperdontia'<sup>4</sup> and 'oligo-pleiodontia'<sup>5</sup> describe the condition where developmental absence of teeth and supernumerary teeth present in a same individual, which is a rare condition. To date only few case reports of such condition exist in the literature, most of which

have been reported in the maxillary arch. Supernumerary tooth developing in the same area of dental arch where the normal series of dentition is absent is an extremely rare condition especially in the mandibular arch. Probability of both anomalies co-existing lies between 0.0008 & 0.0015.<sup>6,7</sup> Gibson gave a prevalence rate of 1 in 230.<sup>4</sup>

## CASE REPORT

A 20-year-old male came to Sudha Rustagi College of Dental Sciences, Faridabad, India for the treatment of abnormal shape of lower front tooth and spacing between them. He was a labor from a different State who was in the city in search of job. Clinical examination revealed that both the

mandibular permanent central incisors were missing and a conical supernumerary tooth was present between permanent right and left lateral incisors (Fig.1). The supernumerary tooth was centrally located, causing a spacing of 3 millimeter each with right and left mandibular lateral incisors. The supernumerary however, was not causing any problem in the occlusion. Patient's medical history was unremarkable. A family history of hereditary tendencies to supernumerary or congenitally missing teeth was negative.

Panoramic and intra oral peri-apical radiographs revealed bilateral absence of permanent mandibular central incisors and presence of a conical supernumerary tooth between mandibular lateral incisors (Fig 2 & 3).

The supernumerary tooth was firm and hence its extraction was not suggested. Closure of space with a fixed prosthesis for aesthetic purpose was advised to the patient.



Figure 1: Clinical photograph showing a conical supernumerary tooth and missing bilateral mandibular central incisors

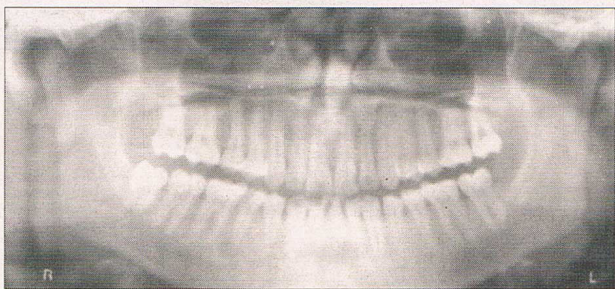


Figure 2: Panoramic radiograph revealing the absence of mandibular right and left central incisors and presence of a conical supernumerary tooth



Figure 3: Intraoral peri-apical radiograph showing the presence of a conical supernumerary tooth positioned between mandibular right and left lateral incisors

## DISCUSSION

Concomitant hypodontia and hyperdontia have been found more often in the permanent dentition than in the primary dentition.<sup>8</sup> Although mandibular incisors<sup>9</sup> are the most commonly missing teeth among Asians, concomitant occurrence of hypodontia and supernumerary tooth in the same arch especially in the mandible is an uncommon dental anomaly. Low and Gibson has reported a case where mandibular central incisors were absent and a midline supernumerary tooth was present.<sup>4,10</sup> The possibility of the conical tooth being microdont mandibular central incisor and its association with hypodontia was also considered. Distinct conical shape with no resemblance to a normal incisor tooth suggests that the tooth is not a normal central incisor tooth or microdontia.

Supernumerary tooth presenting singly can be classified into four types: conical, tuberculate, supplemental and the controversial odontome type. The conical types are located near the midline, often erupt in the childhood and have root formation chronologically matched with the teeth in the region.<sup>11-13</sup> Causes of supernumerary teeth

include phlogenetic reversion to extinct primates, split in the tooth bud (dichotomy theory), locally conditioned hyperactivity of the dental lamina and a combination of genetic and environmental factors.<sup>14-17</sup> The etiology of congenital absence of teeth includes physical obstruction or disruption of the dental lamina, space limitation, functional abnormalities of the dental epithelium or failure of initiation of the underlying mechenchyme.<sup>18</sup> It is well known that congenital absence of teeth may result from genetic factors although the modes of inheritance remain unclear.<sup>17</sup> To date congenitally missing teeth have been described as one of the features in more than 120 syndromes<sup>19</sup> and more than 50 syndromes of head and neck specifically.<sup>8</sup>

The etiology of these anomalies co-existing is unknown. Disturbances in migration, proliferation and differentiation of the neural crest cells and interactions between the epithelial and mesenchymal cells during the initiation of odontogenesis have been suggested.<sup>8,20</sup> These anomalies coexisting are rarely reported.<sup>21</sup>

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