

# Molariform mesiodents in a non-syndromic patient: a case report

## Abstract

Mesiodens is the most common type of supernumerary teeth, which is located between the central incisors, at the midline of the maxilla. Regarding the size, number, path of eruption, and morphology a wide variety of supernumerary teeth have been reported. This case presents a non-syndromic 10-year-old girl with two molariform mesiodents.

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## Introduction

Supernumerary teeth can be defined as presence of any teeth or tooth in excess of normal number of primary or permanent dentition due to some sort of anomaly.<sup>1</sup> The prevalence of this relatively common phenomenon is 0.5-5.3% in primary and 0.2-0.8% in permanent dentition.<sup>2</sup> The most common type of supernumerary teeth is Mesiodens (located at the midline of maxilla) and occurs in between 0.09% and 2.05% of cases.<sup>3</sup> The premaxillary region has the highest rate for occurrence of supernumerary teeth, which is between 65 to 90%.<sup>4</sup> Depending on their shape, size, number, unilateral or bilateral presence and their eruption or impaction, a wide variety exists.<sup>5</sup> Mesiodens presents with different morphologies such a cone-shape (most common), tuberculate and molariform (rarest form).<sup>6</sup> The most common type of mesiodens are reported in literature are those with conical crown while tuberculate or molariform types are the rarest form. This article reports the presence of two rare molariform mesiodents in a 10-year-old female patient without any dentofacial syndromes or familial history.

## Case report

A 10 year old female patient was referred to the pediatric dentistry department of Shahid Beheshti University of medical sciences with the chief complaint of protrusion of upper incisors and unaesthetic appearance of teeth. Careful medical and familial history was obtained. The results indicated the lack of any syndromes or medical conditions, and there was no familial occurrence of any type of supernumerary teeth or problems related to the number of teeth. The findings of the extra-oral examinations were normal, and the patient had a normal facial appearance. Intra-oral examination revealed the occlusal surfaces of two molariform incisors in the anterior region of maxilla between the left central and right lateral incisors (Figures 1 & 2). Each supernumerary tooth had four cusps. All of the permanent teeth except the second and third molars, maxillary right central incisor and left canine were present in the oral cavity. The anterior teeth of both arches were crowded (Figure 3). Maxillary left central incisor was displaced labially; while, both lateral incisors had

lingual positions. The presence of the rest of the permanent teeth was investigated by radiographic examinations that revealed no congenital missings. The location of right central incisor was buccal and lateral to the supernumerary tooth. Examination of the interarch relationships revealed poor occlusal interdigitations, class II canine and molar relationships on the right side, and class I molar relationship on the left (Figures 4 & 5). Both of the supernumerary teeth had radicular cysts and the decision was made to perform an excisional biopsy. The gross description of the specimen consisted of two teeth with sheet like creamy-brown elastic tissue attached to the apex; and the microscopic description of the sections showed a cyst lesion lined by varying thickness of stratified squamous epithelium with anastomosing rete ridges, arch shaped appearance and exocytosis. Severe mixed inflammatory cells infiltration, hemorrhage and Russell bodies were found in the fibrovascular cyst wall, but there was no evidence of malignancy. And, the findings were suggestive of an inflamed odontogenic cyst. Afterwards the case was referred for orthodontic management.



**Figure 1** Occlusal view of the mesiodents, palatally displaced right lateral incisor and labially displaced left central incisors.



**Figure 2** frontal views of mesiodents.



**Figure 3** Occlusal view of mandibular arch with anterior crowding and rotated premolars.



**Figure 4** Occlusal relationship: right side.



**Figure 5** Occlusal relationship: left side.

## Discussion

While the supernumerary teeth and the presence of a mesiodens are well documented findings, a molariformmesiodens is relatively rare. Although the exact etiology is still unknown; however, many theories have been suggested to explain how this abnormality will happen. Four hypothetical theories that are most accepted are: 1- Atavistic theory: phylogenetic remnant of ancestors with three incisors, 2- dichotomy of tooth bud, 3- local independent hyperactivity of lamina dura, and 4- the genetic theory which consists of autosomal dominant inheritance with incomplete penetration.<sup>7-12</sup> A sex linked pattern has also been proposed that can explain the higher rate of affected males compared to females.<sup>8,9</sup> It seems that the most accepted theory is hyperactivity of lamina with multifactorial inheritance.<sup>10</sup> Heredity is also believed to have a crucial role in developmental supernumerary teeth, regardless of their association with syndromes.<sup>11</sup> Supernumerary teeth are frequently associated with several syndromes and medical conditions such as cleft lip and palate, cleidocranialdysostosis, and Gardner's syndrome. Fewer associations have been documented with Hallermann-Streiff syndrome, oro-facial-digital syndrome; Ellis-van Creveld syndrome, median cleft facial syndrome, Fabry-Anderson syndrome, tricho-rhino-phalangeal syndrome, and Ehlers-Danlos syndrome.<sup>12</sup> Aside from the syndromic cases, diagnosis of these teeth in twins, siblings and sequential generation of a single family proposes a genetic influence.<sup>13</sup> Although there was no familial history of mesiodens or any other type of supernumerary teeth in our case, the familial occurrence of mesiodens is well documented.<sup>14-16</sup> Therefore, a careful and exact familial history must be collected. Regardless of their origin, their presence can cause a number of problems for their adjacent teeth such as crowding, delayed eruption of impaction, rotation, displacement of the teeth, resorption and development of a midline diastema,<sup>17,18</sup> therefore their treatment usually consists of extraction.<sup>19</sup> Nevertheless, a variety of treatment choices are available, and the treatment is based on a combination of factors such as the position and clinical manifestation of the supernumerary teeth and the rest of the dentition. Our patient underwent the surgical extraction of the supernumerary teeth followed by orthodontic treatment to correct the malocclusion. The more complex cases require a well defined multidisciplinary approach with close co-operation of different specialties.<sup>19</sup>

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## Conflict of interest

The author declares that there is no conflict of interest.

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