

Eight supernumerary teeth in a non-syndromic patient: A case report

Zahra Saberi¹, Mohamadreza Salehi¹, Mahsa Etemadi², Fatemeh Abbasi^{1*}

1. Assistant Professor, Department of Oral and Maxillofacial Medicine, Dental Research Center, Dental Research Institute, School of Dentistry, Isfahan University of Medical Sciences, Isfahan, Iran.

2. Dental student, School of Dentistry, Isfahan University of Medical Sciences, Isfahan, Iran.

Article Type

ABSTRACT

Case Report

Hyperdontia is the increase in the number of teeth. Hereditary patterns have been suggested and many cases are multifactorial. Syndromes such as Cleidocranial dysplasia and Down syndrome are associated with hyperdontia and non-syndromic cases are very rare. The aim of this study was to report multiple supernumerary teeth in a non-syndromic patient. A 25-year-old female patient without any systemic, metabolic, or mental disorders has been referred to the Department of oral medicine, Isfahan school of dentistry for an oral examination. In the panoramic radiography, 12 impacted teeth were accidentally found. Four of them were impacted third molars and the rest were supernumerary teeth. The presence of supernumerary teeth causes situations such as eruption latency of permanent teeth and root resorption of adjacent teeth. In these cases, a complete clinical and radiographic examination of the patient with a detailed medical and dental history should be performed for the appropriate surgical and orthodontic treatment plan.

Received: 29 Jun 2020

Accepted: 1 Sept 2021

Keywords: Tooth Impacted, Tooth Supernumerary, Syndrome

Cite this article: Saberi Z, Salehi MR, Etemadi M, Abbasi F. Eight supernumerary teeth in a non-syndromic patient: A case report. Caspian J Dent Res 2021; 10: 65-9.



© The Author(s).

Publisher: Babol University of Medical Sciences

* **Corresponding Author:** Fatemeh Abbasi, School of Dentistry, Isfahan University of Medical Sciences, Isfahan, Iran.

Tel: +98313792551

E-mail: f.abac@yahoo.com

Introduction

Hyperdontia is defined as an increase in the number of teeth and the extra teeth are called supernumerary.^[1] Unilateral extra teeth are more common and it occurs 5 times more in permanent dentition.^[2, 3] In 95% of cases the supernumerary teeth occur in the anterior region of the maxilla called Mesiodense.^[4] It can also happen in upper molars called distomolar and lower premolars, canines, and lateral incisors. The supernumerary incisors are rare in the mandible.^[5, 6] It is more common in men with a male/female ratio of 2:1.^[7] Hyperdontia appears as supplemental or rudimentary. Despite Supplemental hyperdontia, rudimentary supernumerary teeth have an abnormal shape and are smaller in size.^[8] Although It is suggested that the evolutionary throwback (atavism) causes hyperdontia, today's accepted theory is the local and independent hyperactivity of dental lamina.^[9]

Hyperdontia is associated with various syndromes such as Crouzon, Ehlers-Danlos, Sturge-weber, Gardner's, and Cleidocranial dysplasia.^[10] Multiple extra teeth in non-syndromic individuals are very rare and need careful checkups for any syndrome symptoms.^[8] The supernumerary teeth can have normal or inverted eruption or become impacted and lead to complications such as tooth movement, crowding, malocclusion, rotation, diastema, cystic formation, resorption of adjacent teeth, and latency in eruption.^[7,11,12]

The aim of this study was to report a case of non-syndromic multiple hyperdontia. This case report describes the clinical and radiographic characteristics and the type of treatment suggested to the patient.

Case Report

The article with the ethical code of IR.MUI.RESEARCH.REC.1399.726 in the Ethics Committee of Isfahan University of Medical Sciences. The case was a 25-year-old woman who has referred to the oral medicine division of Isfahan school of dentistry with a chief complaint of decay evaluation and filling treatment. The clinical evaluation presented 2 semi-erupted extra premolars in the left quarter of the mandible. No asymmetry or swelling was identified. Radiographic evaluations showed 12 impacted teeth including 6 in the lower arch (2 third molars, 4 premolars) and 6 in the upper arch (2 third molars, 2 canines, 2 premolars) (Figure1). No pathologic changes were detected in panoramic radiography around the impacted teeth or other regions of both arches. The patient did not have



Figure1. Panoramic radiography of the patient with 6 impacted teeth in the lower arch (1 third molar and 2 supernumerary premolars in each quadrant) and 6 in the upper arch (1 third molar, 2 supernumerary canines, and 2 premolars in each quadrant)

Any mental or skeletal disability and systemic evaluation were normal except for the fact that she was a hemophilia carrier. The familial history presented no abnormality however one of her two brothers was hemophilic. The radiographic evaluation of her mother and non-hemophilic brother was normal but the hemophilic brother also had one supernumerary impacted molar in the lower arch. (Figure2). In addition both brothers had 2 impacted third molars in each arch.



Figure2. Panoramic radiography of patients' healthy brother without any supernumerary teeth and 2 impacted third molars in each arch

Although the suggested treatment to the patient was the extraction of supernumerary teeth and additional orthodontic therapy, she did not accept the treatment.

Results

Despite various theories, the exact reason for hyperdontia is still unknown. It is assumed that hyperdontia is multifactorial and both genetic and other environmental factors are involved. Supernumerary and impacted teeth are uncommon and usually associated with conditions such as Down syndrome.^[13]

Acikgoz et al. presented non-syndromic supernumerary teeth in 6 out of 9550 patients. all patients were male and 30 of 37 extra teeth were impacted. Similar to our case, the most prevalent supernumerary teeth were lower premolars.^[12] Yague-Garcia et al. studied 16384 patients with supernumerary teeth, 8 were non-syndromic, 6 of whom were male and 2 were female, and despite our case, Alvira-Gonzalez et al. have suggested that supernumerary teeth are more prevalent in men.^[14, 15]

Eshghpour et al. reported a case of a 29-year-old woman with 7 supernumerary teeth in the anterior region of the mandible which was similar to this study regarding the patient's sex.^[16]

Inchingolo et al. described a case of non-syndromic multiple supernumerary teeth which presented with localized pain and slight homolateral submandibular lymphadenopathy and familial history of multiple impacted teeth, however, in the present study there were no pathological signs in panoramic radiography or clinical examination and no familial abnormality was detected related to supernumerary teeth.^[17]

Kumar et al. reported cases of non-syndromic supernumerary teeth with delayed eruption, unesthetic appearance, and displaced teeth chief complaints despite the current study in which the reported case presented with no clinical and radiological pathology. Similar to our study none of the cases in the study of Kumar et al. had a medical and familial history of supernumerary teeth.^[18]

The presence of the pericoronal follicle surrounding the crown of the impacted teeth is usually associated with cyst and tumor formation, such as ameloblastoma, keratocystic odontogenic tumors, and dentigerous cysts which may originate from odontogenic epithelial rests.^[19] In addition, pathological conditions including delayed eruption or displacement of permanent teeth, root resorption of adjacent teeth, diastema, and root malformation of adjacent teeth may occur due to pressure and cystic formations in impacted supernumerary teeth area.^[12] To prevent such complications in patients with supernumerary teeth, early intervention is suggested. Generally, in patients with hyperdontia getting a full medical and dental history alongside considering the patient's developmental process, IQ and supernumerary teeth eruption time are necessary. Any soft or hard tissue anomaly must be registered. Required radiological examinations have to be taken and treatments have to be done according to the clinician's opinion.

Discussion

SBS of C2 cement was higher than that of FC for e-max ceramic cementing. Thus, the use of FC instead of C2 cement is not recommended. In evaluating the clinical success of various adhesives, two factors of bond strength and microleakage are very important, so choosing the right cement can be very helpful. It seems that although the fillers of the flowable composite could be an important factor in increasing the bond strength, in the present study, the cement was better than the flowable composite. Chen et al. evaluated the SBS of zirconia to resin as well as the effects of specimen preparation and loading procedure. They concluded that in this procedure, the load flat width, load applied during cementation and various composite resins affected the SBS results.^[6] Upadhayaya et al. evaluated the SBS of three various resin cements, self- and total-etch as well as self-adhesive resin cements, utilized to bond the lithium disilicate restorations to human dentin. Their results showed that total-etch resin cements were the best luting agents; therefore, they are highly suggested clinically, making a long-lasting bond between lithium disilicate ceramic and dental substrate.^[7] Romanini-Junior et al. Assessed the effects of the adhesive/silane usage on the bond strength durability to a lithium disilicate ceramic. They have concluded that despite the presence of silane in the composition of single bond universal, the use of silane prior to lithium disilicate cementation is highly recommended.^[8] Özdemir et al. evaluated the effects of various surface treatments on bond strength of different resin cements to lithium disilicate glass ceramic in an in vitro study. After the data analysis, they found that self-cure resin cement than dual-cure one had higher bond strength values. Besides, they represented that various surface treatments affected the bonding of different resin cement to IPS e-max Press.^[9] Nokar et al. Compared the microSBS of two resin cements to Crecon and Zirkonzahn ceramics. The results have indicated that the type of resin cement has an important effect on their bond strengths to zirconia ceramics.^[10] There are different oral forces between the restoration and underlying tooth. In general, bond strength is the maximum force that a material can withstand before it fails. The bond strength test is one of the most popular analyses performed in the evaluation of dental materials. The information obtained from the bond strength test largely depends on the actual test conditions (sample geometry, surface size, composite type, and force input and test temperature). Therefore, it is not surprising that the results obtained from different tests of the above studies are different. Although glass ionomer cements have good properties, they have high fragility, low strength, reduced wear resistance of glass ionomer and inability to completely remove microleakage between the edges of the cavity with restoration, as a result, the use of composite resins in the restoration of posterior teeth is more acceptable. One of the limitations of the present study was the use of teeth instead of composite blocks.

Authors' Contribution

Saberi Z and Abbasi F. accomplished collecting data, manuscript preparation and editing as well as performed the study supervision, Etemadi M. accomplished collecting data, manuscript preparation and editing, Salehi MR. discovered the patient and performed the patient examination.

References

1. Díaz A, Orozco J, Fonseca M. Multiple hyperodontia: report of a case with 17 supernumerary teeth with non syndromic association. *Med Oral Patol Oral Cir Bucal* 2009; 14: E229-31.
2. Syriac G, Joseph E, Rupesh S, Philip J, Cherian SA, Mathew J. Prevalence, characteristics, and complications of supernumerary teeth in nonsyndromic pediatric population of south india: A clinical and radiographic study. *J Pharm Bioallied Sci.* 2017; 9(Suppl 1): S231-S6.
3. Khandelwal P, Rai AB, Bulgannawar B, Hajira N, Masih A, Jyani A. Prevalence, characteristics, and morphology of supernumerary teeth among patients visiting a dental institution in rajasthan. *Contemp Clin Dent* 2018; 9: 349-56.
4. Takahashi K, Watanabe S, Ito K, Eda T, Tajima M, Yano T, et al. Two Cases of Supernumerary Teeth in the Posterior Mandible. *Int J Oral Med Sci* 2019; 18: 141-5.
5. Kara Mİ, Aktan AM, Ay S, Bereket C, Şener İ, Bülbül M, et al. Characteristics of 351 supernumerary molar teeth in Turkish population. *Med Oral Patol Oral Cir Bucal* 2012; 17: e395-400.
6. Amini F, Rakhshan V, Jamalzadeh S. Prevalence and Pattern of accessory teeth (Hyperdontia) in permanent dentition of Iranian orthodontic patients. *Iran J Public Health* 2013; 42: 1259-65.
7. Batra P, Duggal R, Parkash H. Non-syndromic multiple supernumerary teeth transmitted as an autosomal dominant trait. *J Oral Pathol Med* 2005; 34: 621-5.
8. Sawai MA, Faisal M, Mansoob S. Multiple supernumerary teeth in a nonsyndromic association: Rare presentation in three siblings. *J Oral Maxillofac Pathol* 2019; 23: 163.
9. Ferrés-Padró E, Prats-Armengol J, Ferrés-Amat E. A descriptive study of 113 unerupted supernumerary teeth in 79 pediatric patients in Barcelona. *Med Oral Patol Oral Cir Bucal* 2009; 14: E146-52.
10. Lubinsky M, Kantaputra PN. Syndromes with supernumerary teeth. *Am J Med Genet A* 2016; 170: 2611-6.
11. Singhal P, Sah VK, Kumar A, Garg A. Unilateral fourth, fifth, sixth, and seventh molar in a nonsyndromic patient: A rare and unusual case report. *J Indian Soc Pedod Prev Dent* 2017; 35: 374-7.
12. Açıkgöz A, Açıkgöz G, Tunga U, Otan F. Characteristics and prevalence of non-syndrome multiple supernumerary teeth: a retrospective study. *Dentomaxillofac Radiol* 2006; 35: 185-90.
13. Bandi S, Nunna M, Palavalli B, Nuvvula S. Favorable Outcome of a Maxillary Supplemental Premolar. *Contemp Clin Dent* 2018;9: 659-62.
14. Yagüe-García J, Berini-Aytés L, Gay-Escoda C. Multiple supernumerary teeth not associated with complex syndromes: a retrospective study. *Med Oral Patol Oral Cir Bucal* 2009; 14: E331-6.
15. Alvira-González J, Gay-Escoda C. Non-syndromic multiple supernumerary teeth: meta-analysis. *J Oral Pathol Med* 2012; 41: 361-6.
16. Eshghpour M, Shahakbari R, Shaban B. Multiple Supernumerary Teeth in a Non-Syndromic Patient: A Case Report. *J Mashhad Dent Sch* 2013; 37: 81-4.
17. Inchingolo F, Tatullo M, Abenavoli FM, Marrelli M, Inchingolo AD, Gentile M, et al. Non-syndromic multiple supernumerary teeth in a family unit with a normal karyotype: case report. *Int J Med Sci* 2010; 7: 378-84.
18. Kumar A, Namdev R, Bakshi L, Dutta S. Supernumerary teeth: Report of four unusual cases. *Contemp Clin Dent* 2012; 3(Suppl1): S71-7.
19. Shoaee S, Khazaei P, Mashhadiabbas F, Varshosaz M, Sharifi F, HesarI H. Association between tooth impaction and odontogenic lesions: A matched case-control study. *Med J Islam Repub Iran* 2018; 32: 57.