MERIT RESEARCH JOURNALS
www.meritresearchjournals.org

Merit Research Journal of Medicine and Medical Sciences (ISSN: 2354-323X) Vol. 10(6) pp. 168-176, June, 2022
Available online http://www.meritresearchjournals.org/mms/index.htm

DOI: 10.5281/zenodo.6712359

Case Report

Combination of bilateral paramolar and distomolar supernumerary teeth in the maxillary arch: A rare case report

Touseef Tahir Khan[1], Mahwish Erkin[2], Sundas Ghaus[3], Mehwish Pasha[4], Saad Shahnawaz[5]

[1]Department of Periodontology Islamabad Dental Hospital, Islamabad Medical and Dental College, Pakistan

[2]Department of Oral Maxillofacial Surgery, Shifa College of Dentistry, Shifa Tameer-e-Millat University, Pakistan

[3]Department of Oral Medicine, Shifa College of Dentistry, Shifa Tameer-e-Millat University, Pakistan

[4]Department of Dental Materials, Shifa College of Dentistry, Shifa Tameer-e-Millat University, Pakistan

[5]Department of Operative Dentistry, Islamic International Dental Hospital, Riphah International University, Pakistan

[*]**Corresponding Author's E-mail: saadahmed552@hotmail.com**

Abstract

Supernumerary molars are relatively rare entities in the oral and maxillofacial region. These are an odontostomatologic anomalies characterized by the existence of an excessive number of teeth in relation to the normal dental formula. Usually, these supernumerary teeth occur singly and unilaterally, but very rarely do they occur bilaterally. Even more unique is the occurrence of both paramolar and distomolar together. Such a condition is commonly seen with several congenital genetic disorders, including cleft lip and palate, Gardner's syndrome, and Cleidocranial Dysostosis. Other uncommon disorders which may lead to such an anomaly include Ehlers-Danlos syndrome, Fabry Anderson's syndrome, and chondroectodermal dysplasia. However, in this case, the patient as well as his twin was asymptomatic and non-syndromic. The presence of hyperdontia causes complications which include dental impaction, delayed eruption, and relapse after orthodontic treatment. This paper reports an unusual occurrence of a combination of paramolar and distomolar in the maxillary arch of a twin male patient, which was an incidental finding.We will also discuss the prevalence and treatment options for paramolars and distomolar as relevant to our case.

Keywords: Dental Anomaly, Distomolar, Hyperdontia, Maxilla, Paramolar, Supernumerary teeth

INTRODUCTION

An anomaly is defined as something that is noticeably different or that which deviates from the normal. Dental anomalies are deviations of dental tissue origin and are therefore derived from the dental tissues such as enamel, dentin, or cementum. These can be extreme variations or just slight deviations from the normal structure. The presence of supernumerary teeth or hyperdontia is a dental anomaly characterized by the presence of extra teeth in addition to the normal series of deciduous or permanent dentition. It is thus characterized as an odontostomatologic anomaly (S.V.S.G N and Tirupathi, 2016).

The etiology of hyperdontia remains unclear although several hypothetical theories were proposed. The evolutionary theory in 1969 included the phylogenetic process to explain supernumeraries, however, this theory of atavism was rejected by Primosch (Primosch, 2017) in 1981, as most published studies supported the idea of Dichotomy (Sykaras, 1975; Primosch, 1981; Liu, 1995; Di Biase, 1969) which explained that the localized hyperactivity of dental lamina causes the splitting of a single tooth bud, thus resulting in the formation of two equal-sized teeth or one normal and one dimorphic tooth. Many researchers, including Sedano and Gorlin (Sedano and Gorlin, 1969), indicated that the hereditary factors played a significant role as reports of recurrences within families were published, pointing out the possibility of the autosomal dominant trait being the leading cause (Sedano and Gorlin, 1969; Marya and Kumar, 1998; Gallas and Garcia, 2000). Sex predilections were mentioned by another author, claiming there is a higher prevalence in males compared to females (Bruning, 1957). Along with the genetic influence, environmental factors were also taken into consideration suggesting that

a combination of both factors could be involved in the occurrence of supernumeraries (Brook, 1984). Considering all theories, researchers concluded that hyperdontia is in fact a disorder involving multiple hereditary influences originating from dichotomy (Hattab et al., 1994).

Supernumerary teeth are classified based on number, position, size, structure, and form (Table 1). Although these can be present in one or both jaws, 80% of all supernumerary teeth are most commonly found in the anterior medial region of the maxillary arch (Nayak et al., 2012). Supernumerary molars, in particular, can be classified into two broad categories, paramolars, and distomolars. Paramolars are defined as supernumerary molars located buccally or palatally to the third molar, whereas, distomolars are defined as supernumerary molars located distal to the third molar in the maxilla or mandible (Parolia et al., 2011).

The presence of multiple supernumerary teeth is rare without an associated cause (Rao and Rao, 2005), and it is most commonly seen with several congenital genetic disorders or in syndromic patients such as Gardner's syndrome, Cleidocranial syndrome, Cleft lip, and Cleft palate (Subasioglu et al., 2015). To the best of our knowledge, the presence of a combination of unilateral paramolar and unilateral distomolar in the maxillary region of a non-syndromic patient is a very rare case. The prevalence, incidence, and treatment options for this combination of supernumerary molars will be discussed in this case report.

CASE REPORT

A 23-year-old male patient visited the dental clinic at Chinar International Hospital, Rawalpindi, Pakistan. He presented with the chief complaint of maligned teeth and also complained of continuous, sharp pain in his lower posterior jaw on both sides.

A detailed history session and thorough clinical examination were performed followed by a radiographic assessment. On extra-oral examination, no abnormality was noted. On intraoral examination it was observed that he had a Class I molar relationship, a deep/traumatic bite, crowded lower incisors, and slightly rotated lower canines. Mild generalized gingivitis and staining were observed, calculus was seen on the lingual aspect of lower incisors and mild inflammation with swelling was observed distal to the second molars. The patient did not opt for regular dental screenings in the past. Family history was not significant and social history was non-contributory.

Since the patient mainly had esthetic concerns, orthodontic treatment was advised by the orthodontist and Orthopantomogram (OPG) radiograph along with a lateral cephalogram was performed to design a proper treatment plan. The OPG revealed the presence of bilateral impacted mandibular third molars, resulting in pericoronitis in the surrounding soft tissue, along with the incidental finding of bilateral impacted supernumerary teeth in the maxilla (figure 1). No malignancies, swelling or any other abnormality was noted in the posterior maxillary region clinically.

A Cone Beam Computerized Topography (CBCT) was taken along with the OPG of the patient to analyze the relationship of supernumerary teeth with the surrounding structures. The left side of the maxillary arch revealed a distomolar in Nolla developmental stage 9, and the right side of the maxillary arch revealed a palatally placed paramolar, close to the maxillary sinus. The final treatment plan involved surgical removal of all four impacted third molars, as well the removal of supernumerary teeth. Since the patient was young, stable, and in excellent health condition it was advised that the procedure should be performed under general anesthesia so that all teeth can be extracted at the same time. The patient was informed about the presence of paramolar and distomolar, the decided treatment plan as well as possible complications and other treatment options.

After patient consent and agreement, surgical prerequisites such as PCR for corona test, complete blood count, Hepatitis B and C test and chest radiograph were performed. Ultimately, under general anesthesia, the left maxillary third molar, left and right mandibular impacted third molars and then the right maxillary third molar along with the distomolar were removed respectively. Patient was treated in aseptic condition under general anesthesia, 15 no. blade was used to give incision and modified triangular flap was raised, third molars were extracted first then distomolar was exposed after bone cutting and delivery was done with the help of artery forcep due to insufficient space. Saline irrigation was done to remove any debris. Flap was relocated and simple interrupted suture was given with 3/0 silk. Pressure pack was placed for haemostasis and avoid hematoma in dead space. During surgery it was discussed and agreed upon that the drawbacks of removing the paramolar outweigh the benefits, thus it was not removed. After recovery, the patient was kept under observation for the next 24 hours, advised appropriate medications, and post operative instructions were given to take a soft diet and use chlorhexidine mouth wash for the next 7 days. He was recalled after a week for follow-up and removal of sutures.

DISCUSSION

Supernumerary teeth or hyperdontia can be defined as an excessive number of teeth to the normal dentition, whether it is deciduous or permanent. The first report of supernumerary teeth appeared between AD 23 and 79 (Qaradaghi, 2009). Congenital developmental disorders

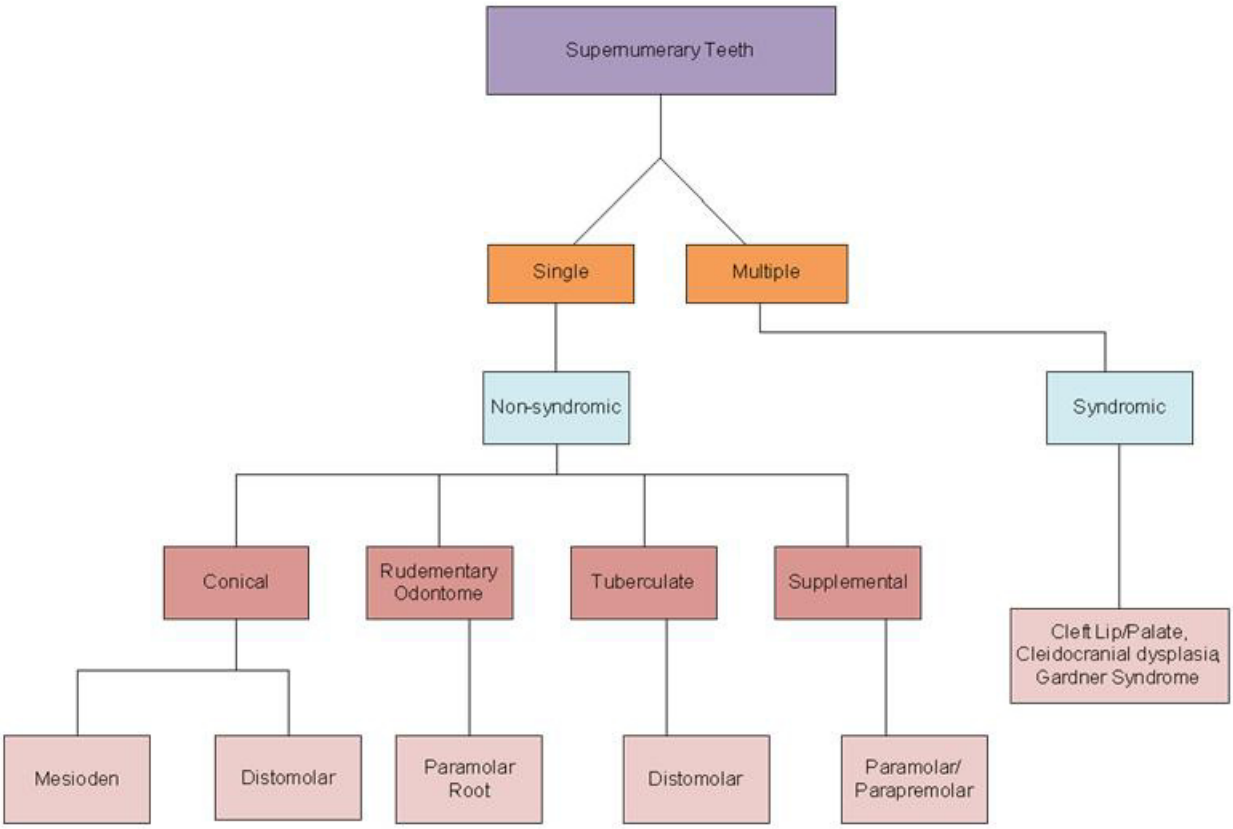

Table 1. Supernumerary teeth Classification

Figure 1. OPG revealed the presence of supernumerary teeth

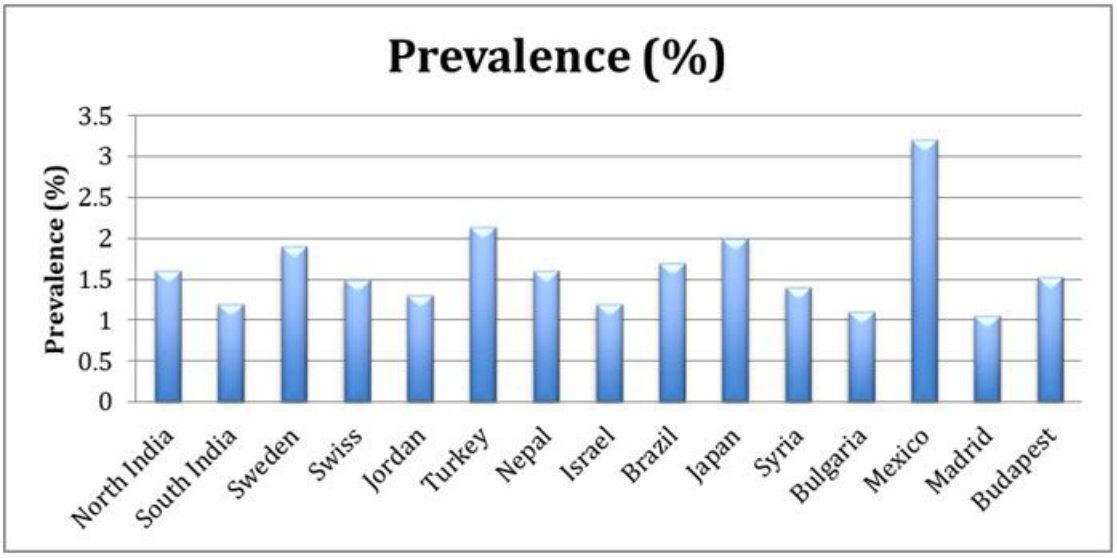

Figure 2. Prevalence of supernumerary teeth in various regions

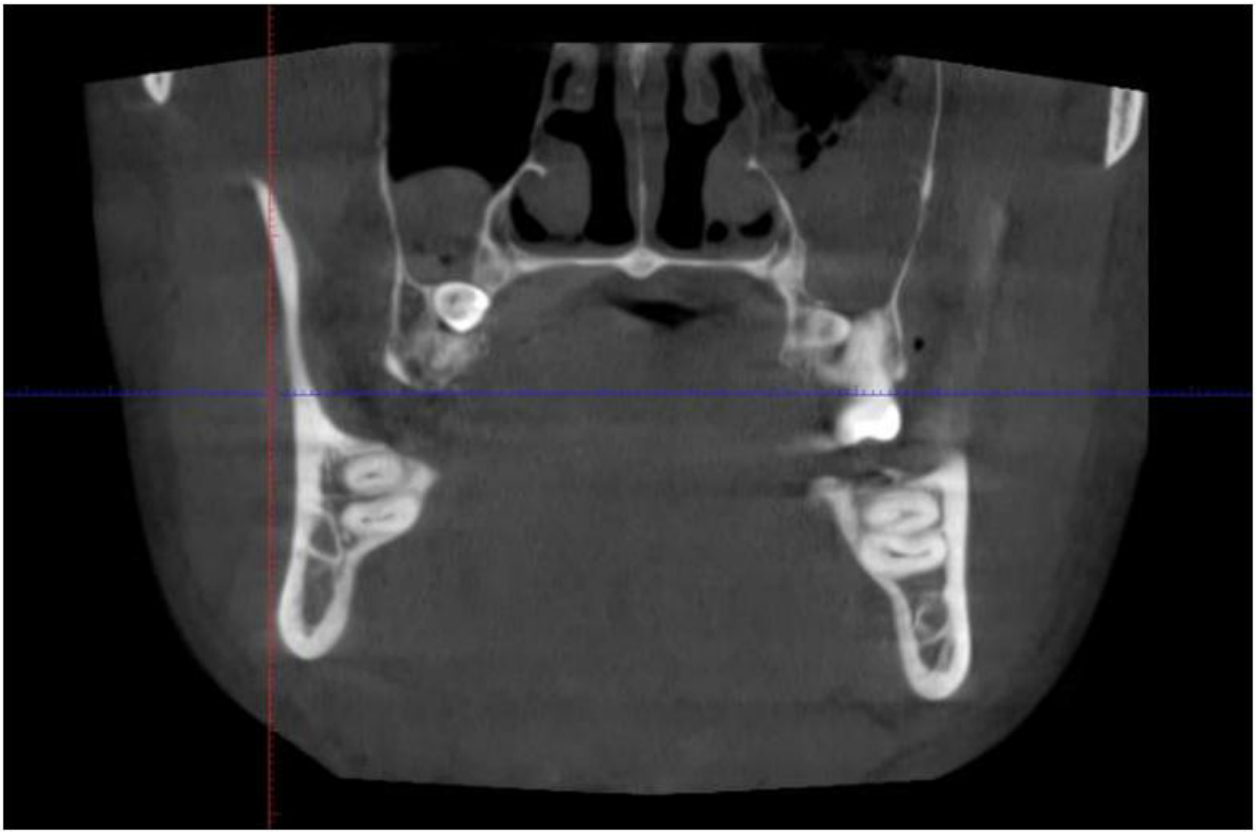

Figure 3. Coronal view of CBCT showing the position of paramolars and distomolar in relation to the surrounding structures

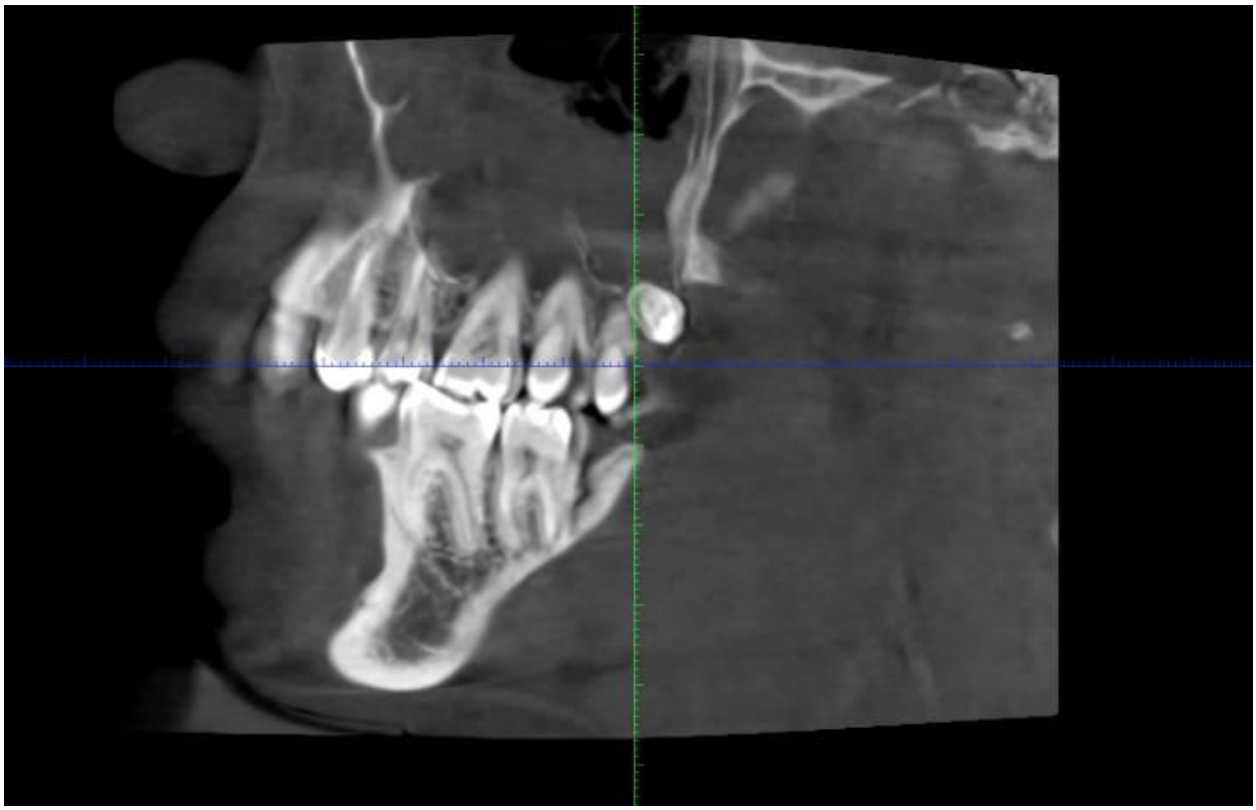

Figure 4. (a) Sagittal view left distomolar

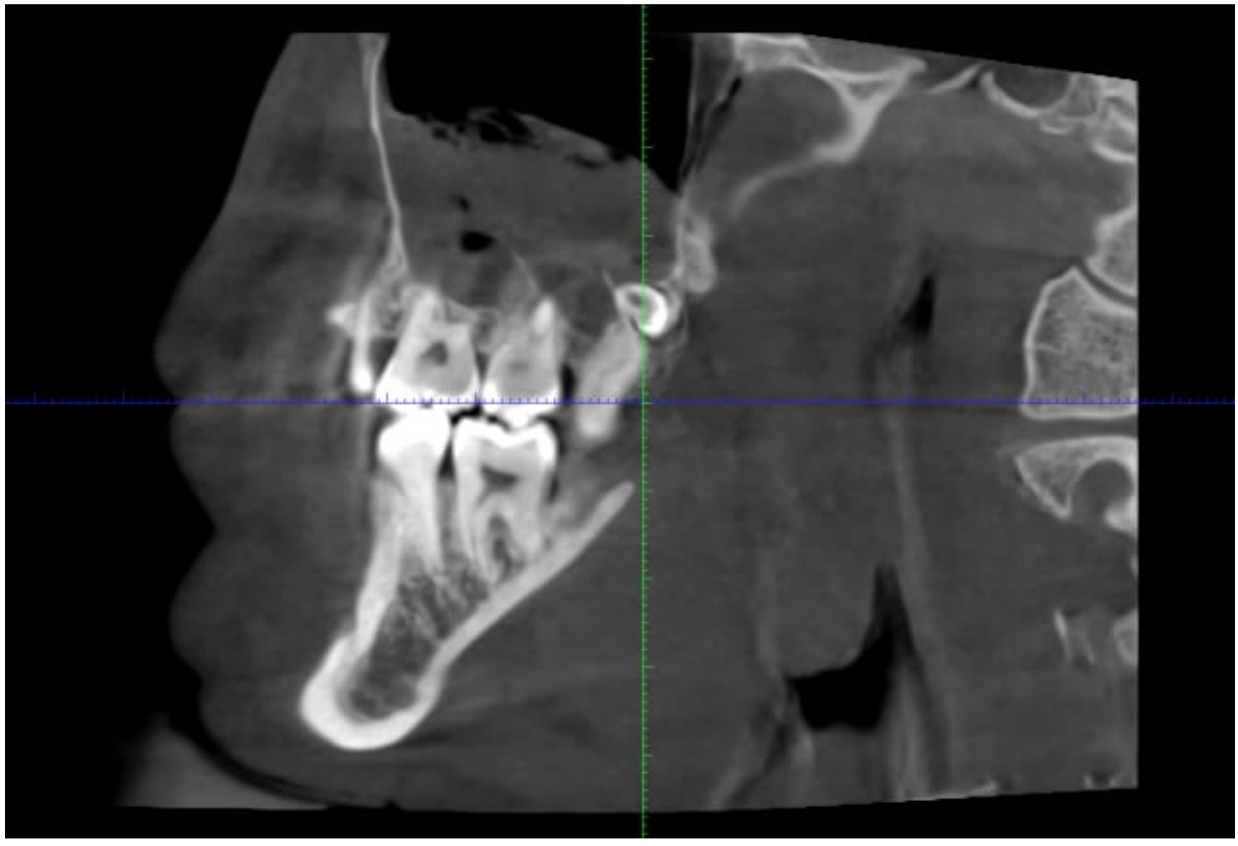

Figure 4: (b) Sagittal view right paramolar

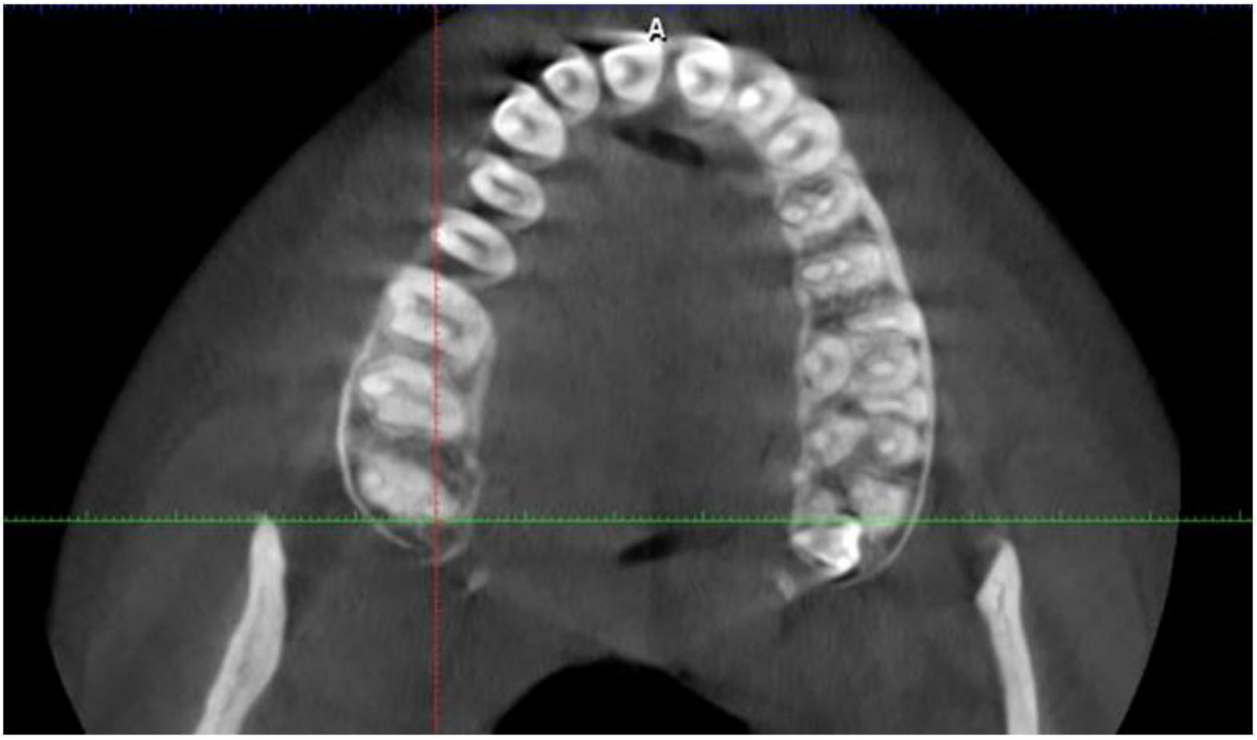

Figure 5. (a) Axial view left distomolar

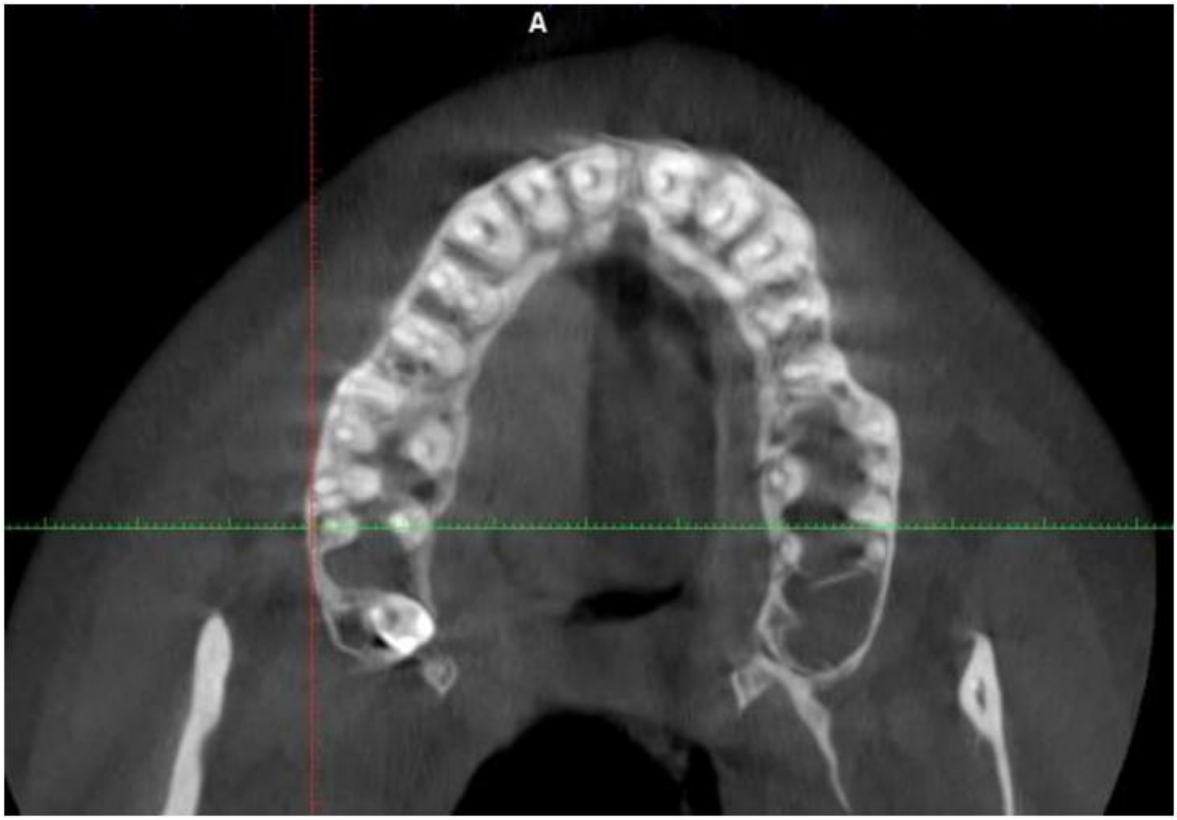

Figure 5. (b) Axial view right paramolar

Figure 6. Extracted maxillary right third molar and paramolar

such as cleft lip and palate, cleidocranial dysostosis, and Gardner's syndrome usually result in the presence of supernumerary teeth (Subasioglu et al., 2015; Rajab LD, Hamdan, 2002). However, after a detailed family history, it was concluded that both the twin siblings showed no correlation to any syndromic manifestations and no hereditary correspondence. In fact, the twin sister presented with only lower horizontally impacted wisdom on both sides similar to her brother's, but with no supernumeraries.

The prevalence of supernumeraries in various regions of the world (figure 2) varies from 0.1% to 3.8% (Primosch, 1981; Nazif et al., 1939). Generally, cases of multiple supernumerary teeth that are reported by patients are quite rare (So, 1990), particularly when not coupled with any syndromes or diseases, as in the case of our patient, these have a prevalence of less than 1% with male predilection (Scheiner and Sampson, 1997). Supernumeraries appear most frequently in the mandibular premolar region (45.29%), followed by the molar region (0.05%) and anterior mandibular region (0.04%) (Qaradaghi, 2009). Paramolars rarely occur in the molar region (0.09-0.29%) while 5 out 1 occurring distomolars are often impacted (Sulabha and Sameer, 2015; Nayak et al., 2012). A study by Yousef et al reviewed cases without associated syndromes and observed that there was a higher prevalence for supernumeraries to occur in the mandible rather than the maxilla, and in the case of both jaws, multiple teeth occurred in the premolar region, followed by molars and then the anterior region (Yusof, 1990).

Radiographs play a vital role in determining the location, type, position, and complex characteristics, along with any associated pathology (Shetty, 2012). However, periapical, occlusal, and panoramic radiographs do not provide detailed information concerning the three-dimensional relationship between supernumerary or impacted teeth and the adjacent structures, therefore, CBCT needed to be taken along with the OPG of the patient before carrying out the surgery. The CBCT revealed that both the crowns of paramolar as well as the distomolar were placed palatally while the roots were tilted distally. The coronal view (figure 3) showed their height in relation to the surrounding structures. The sagittal view (figure 4) depicted their anterior-posterior position which showed that the paramolar was placed apical to the third molar while the distomolar was placed distal to the third molar.

The axial view (figure 5) described their bucco-palatal position, while the crown of the distomolar was positioned palatally and the paramolar had the crown placed buccally and the roots palatally.

The clinical management of patients reporting supernumerary teeth depends upon their effect on surrounding structures, their position, and interference with the treatment plan (Sulabha and Sameer, 2015). In most cases, additional teeth in the jaws may cause multiple clinical instabilities such as, but not limited to, crowding in the dental arches, impaction or delayed eruption of the associated teeth, displacement or rotation of adjacent teeth, possible ectopic eruption of permanent teeth, chances of loss of vitality and root resorption of the adjacent teeth (Sulabha and Sameer, 2015; Syriac et al., 2017). In some cases of unerupted supernumerary teeth, cyst formation may also occur; dentigerous cyst being relatively more prevalent (Syriac et al., 2017; Ata-Ali et al., 2014). Therefore, multiple treatment options exist for supernumerary teeth depending on the case. These include extraction, extraction followed by orthodontic treatment in case of malocclusion, or in some cases the impacted additional teeth may be left untreated and the patient will be called periodically for the purpose of observation, both clinically and radiographically (Parolia and Kundabala, 2010).

It is generally accepted that third molars play a vital role in post orthodontic incisor relapse and their removal is recommended for assuring or preventing long-term irregularity in dental arch (Cheng et al., 2018). Thus, even though the patient had no symptoms or discomfort due to supernumerary molars, the final treatment plan involved surgical removal of all four impacted third molars, as well as the removal of supernumerary teeth as they were likely to interfere with tooth movement during orthodontic treatment (Figure 6).

However, during surgery, it was clinically observed that the distomolar was positioned too deep palatally which would have required excessive grinding of the maxillary tuberosity leading to fracture and perforation of the maxillary sinus, pterygomaxillary space, and/or orbit, while alsodamaging the palatine nerves and blood vessels during manipulation of the tooth. Hence, although initially in the treatment plan, the distomolar was not removed. In the future, both mandibular second molars may require root canal treatment as their distal surfaces were exposed post-extraction which may lead to sensitivity. Thus, the patient was recalled for a follow-up after 3 months. However, no complications such as pain on percussion or sensitivity was observed and required no further treatment.

CONCLUSION

The presence of multiple supernumerary teeth not associated with syndromes and diseases is an uncommon dental finding, specifically in the maxillary region.Impacted supernumerary teeth can lead to complications like dentigerous cyst,root proximity within the maxillary sinus, root resorption of the adjacent tooth, alteration of the functional occlusion and also the difficulty index of surgery increases with age along with delayed healing due to more chances of fracturing of maxillary tuberosity bone during surgery. It is essential for all clinicians to be aware of the prevalence and possible complications of all supernumeraries and the knowledge of the correct radiographs to diagnose the various additional teeth so treatment may be planned accordingly.

Conflict of Interest

The authors reported no conflict of interest.

REFERENCES

Ata-Ali F, Ata-Ali J, Peñarrocha-Oltra D, Peñarrocha-Diago M (2014). Prevalence, etiology, diagnosis, treatment and complications of supernumerary teeth. J. Clin. Experiment. Dentistry.; 6(4):e414-e418. doi:10.4317/jced.51499

Brook AH (1984). A unifying aetiological explanation for anomalies of human tooth number and size. Arch Oral Biol.;29(5):373-8. doi:10.1016/0003-9969(84)90163-8

Bruning LJ (1957). Report of supernumerary teeth in Houston Texas school children. J Dent Child.;24:98-105.

Cheng H-C, Peng B-Y, Hsieh H-Y, Tam KW (2018). Impact of third molars on mandibular relapse in post-orthodontic patients: A meta-analysis. J. Dent. Sci. 2018/03/01/;13(1):1-7. doi:https://doi.org/10.1016/j.jds.2017.10.005

Di Biase D (1969). Midline supernumeraries and eruption of the maxillary central incisor. The Dental practitioner and dental record.;20(1):35.

Gallas MM, Garcia A (2000). Retention of permanent incisors by mesiodens: a family affair. British dental journal.;188(2):63-64.

Hattab FN, Yassin OM, Rawashdeh MA (1994). Supernumerary teeth: report of three cases and review of the literature. ASDC J Dent Child. Sep-Dec;61(5-6):382-93.

Liu J (1995). Characteristics of premaxillary supernumerary teeth: a survey of 112 cases. ASDC J. Dentist. Children.;62(4):262-265.

Marya CM, Kumar B (1998). Familial occurrence of mesiodentes with unusual findings. Quintessence international.;29(1)

Nayak G, Shetty S, Singh I, Pitalia D. Paramolar (2012). A supernumerary molar: A case report and an overview. Dental research journal.;9(6):797-803.

Nazif MM, Ruffalo RC, Zullo T (1939). Impacted supernumerary teeth: a survey of 50 cases. J. Ame. Dental Assoc. Feb 1983;106(2):201-4. doi:10.14219/jada.archive.1983.0390

Parolia A, Kundabala M (2010). Bilateral maxillary paramolars and endodontic therapy: a rare case report. J Dent (Tehran). Spring;7(2):107-111.

Parolia A, Kundabala M, Dahal M, Mohan M, Thomas MS (2011). Management of supernumerary teeth. J. Conservative Dentistry : JCD.;14(3):221-224. doi:10.4103/0972-0707.85791

Primosch RE (1981). Anterior supernumerary teeth--assessment and surgical intervention in children. Pediatr. Dentist. Jun;3(2):204-15.

Primosch RE (1981). Anterior supernumerary teeth-assessment and surgical intervention in children. Pediatric dentistry.;3(2):204-15.

Primosch RE (2017). Anterior supernumerary teeth-assessment and surgical intervention in children. Pediatr Dent. 3(2):204-15.

Qaradaghi IF (2009). Non-syndromic Multiple Supernumerary Teeth: A Case Report and Review of Literature. Chinese Journal of Dental Research.;12(2):139.

Rajab LD, Hamdan MA (2002). Supernumerary teeth: review of the literature and a survey of 152 cases. Int. J. Paediatr. Dentistry.;12(4):244-254. doi:https://doi.org/10.1046/j.1365-263X.2002.00366.x

Rao A, Rao A (2005). Supernumerary teeth: A case report. Journal of the Indian Society of Pedodontics and Preventive Dentistry. 07/01;23:103-5. doi:10.4103/0970-4388.16453

S.V.S.G N, Tirupathi S (2016). Rare Combination of Developing Unerupted Paramolar and Distomolar in Maxilla: A Case Report and Review of Literature. JBR J. Interdiscip. Med. Dental Sci. 01/01;4doi:10.4172/2376-032X.1000201

Scheiner MA, Sampson WJ (1997). Supernumerary teeth: a review of the literature and four case reports. Australian dental journal. Jun;42(3):160-5. doi:10.1111/j.1834-7819.1997.tb00114.x

Sedano HO, Gorlin RJ (1969). Familial occurrence of mesiodens. Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology.;27(3):360-362.

Sedano HO, Gorlin RJ (1969). Familial occurrence of mesiodens. Oral Surg Oral Med Oral Pathol. Mar;27(3):360-1. doi:10.1016/0030-4220(69)90366-1

Shetty YN (2012). A rare case of bilateral maxillary paramolars between 1st and 2nd molars. J. Orofacial Res. 52-55.

So LL (1990). Unusual supernumerary teeth. The Angle orthodontist. Winter;60(4):289-92. doi:10.1043/0003-3219(1990)060<0289:ust>2.0.co;2

Subasioglu A, Savas S, Kucukyilmaz E, Kesim S, Yagci A, Dundar M (2015). Genetic background of supernumerary teeth. Eur. J. Dentist. Jan-Mar;9(1):153-158. doi:10.4103/1305-7456.149670

Subasioglu A, Savas S, Kucukyilmaz E, Kesim S, Yagci A, Dundar M (2015). Genetic background of supernumerary teeth. European journal of dentistry. Jan-Mar;9(1):153-158. doi:10.4103/1305-7456.149670

Sulabha AN, Sameer C (2015). Unusual Bilateral Paramolars Associated with Clinical Complications. Case Reports in Dentistry. /05/21 2015;2015:851765. doi:10.1155/2015/851765

Sykaras SN (1975). Mesiodens in primary and permanent dentitions: report of a case. Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology.;39(6):870-874.

Syriac G, Joseph E, Rupesh S, Philip J, Cherian SA, Mathew J (2017). Prevalence, Characteristics, and Complications of Supernumerary Teeth in Nonsyndromic Pediatric Population of South India: A Clinical and Radiographic Study. J Pharm Bioallied Sci.;9(Suppl 1):S231-S236. doi:10.4103/jpbs.JPBS_154_17

Yusof WZ (1990). Non-syndrome multiple supernumerary teeth: literature review. J. (Canad. Dental Assoc.). Feb;56(2):147-9.