

Double Trouble: Management of Bilateral Mesiodens

Introduction

Supernumerary teeth are an abnormal development of an excess number of teeth. Mesiodens are supernumerary teeth observed in the maxillary anterior midline. Prevalence is 0.15% - 3.9% with an unclear etiology—25% of mesiodens spontaneously erupt. The timing of identification, intervention and the approach has varied throughout the years and has been the topic of many studies. This case discusses the identification, intervention and management of a young male who is in late mixed dentition and was identified to have bilateral mesiodens.

Case Description

Eleven year old male presented to UH pediatric dental clinic with mother for an urgent appointment with a chief complaint of pain on maxillary left side. Patient has a past medical history of asthma that is well controlled. Mother reported that the patient had seen several dentists, and due to insurance issues had not been able to receive treatment for orthodontics and surgery for "extra" teeth.

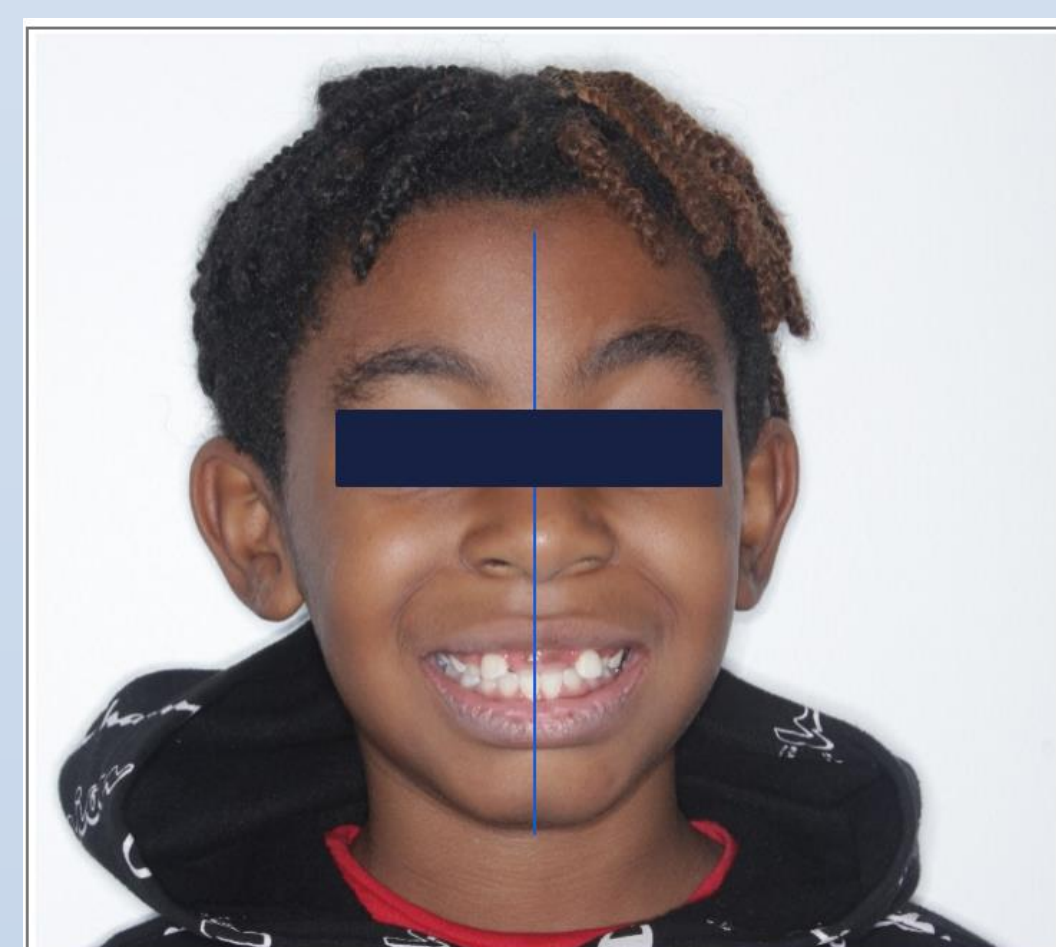


Fig. 1



Fig. 2



Fig. 3



Fig. 4

Findings

- Extraoral Exam: No facial asymmetry, no swelling or lymphadenopathy present, and midlines on center (Fig. 1)
- Intraoral exam: Patient was in late mixed dentition with over retained E,F; #7,10 are facially flared. Multiple caries noted in the 1st permanent molars with large caries noted on #19; A fistula was noted apical to #J with an existing stainless steel crown. Patient reports pain upon palpation near #J (Fig. 2-4—photos were taken after urgent visit and extraction of #J)
- Radiographic exam: A periapical radiolucency was noted around #J, with a large carious lesion noted on #19. Four third-molars were present and Bilateral Mesiodens noted (#58 and #59). #8,9 were impacted and a mesially drifted and impacted #13 was noted. (Fig. 5).



Fig. 5

Discussion

A CBCT was needed to obtain accurate diagnostics of the location, shape and root development of #8, #9. The CBCT revealed #8, #9 had greater than 2/3 root development, which is less than ideal (Fig. 7). Due to late maturation and bilateral mesiodens, spontaneous eruption of #8, #9 is highly unlikely. Many considerations were taken into account with this case:

- Orthodontics: Consider if #8, #9 are able to travel more than 10mm through bone and remain vital with no other complications.
- Oral Surgery: Will there be a possible complication of a sinus-oral communication following movement of #8, #9? Also, how to manage #8, #9 if they are ankylosed?
- Periodontics: Consider how the surrounding alveolus appears following successful movement of #8, #9 into the arch, and how to manage the surrounding tissue.
- Endodontics: If the orthodontic movement of #8, #9 causes necrosis, how will #8, #9 be treated and what would be the success of that intervention?

After all considerations and input, the case was determined to move forward with extraction of primary (E,F) and supernumerary teeth (#58, #59) and bring #8, #9 into arch.

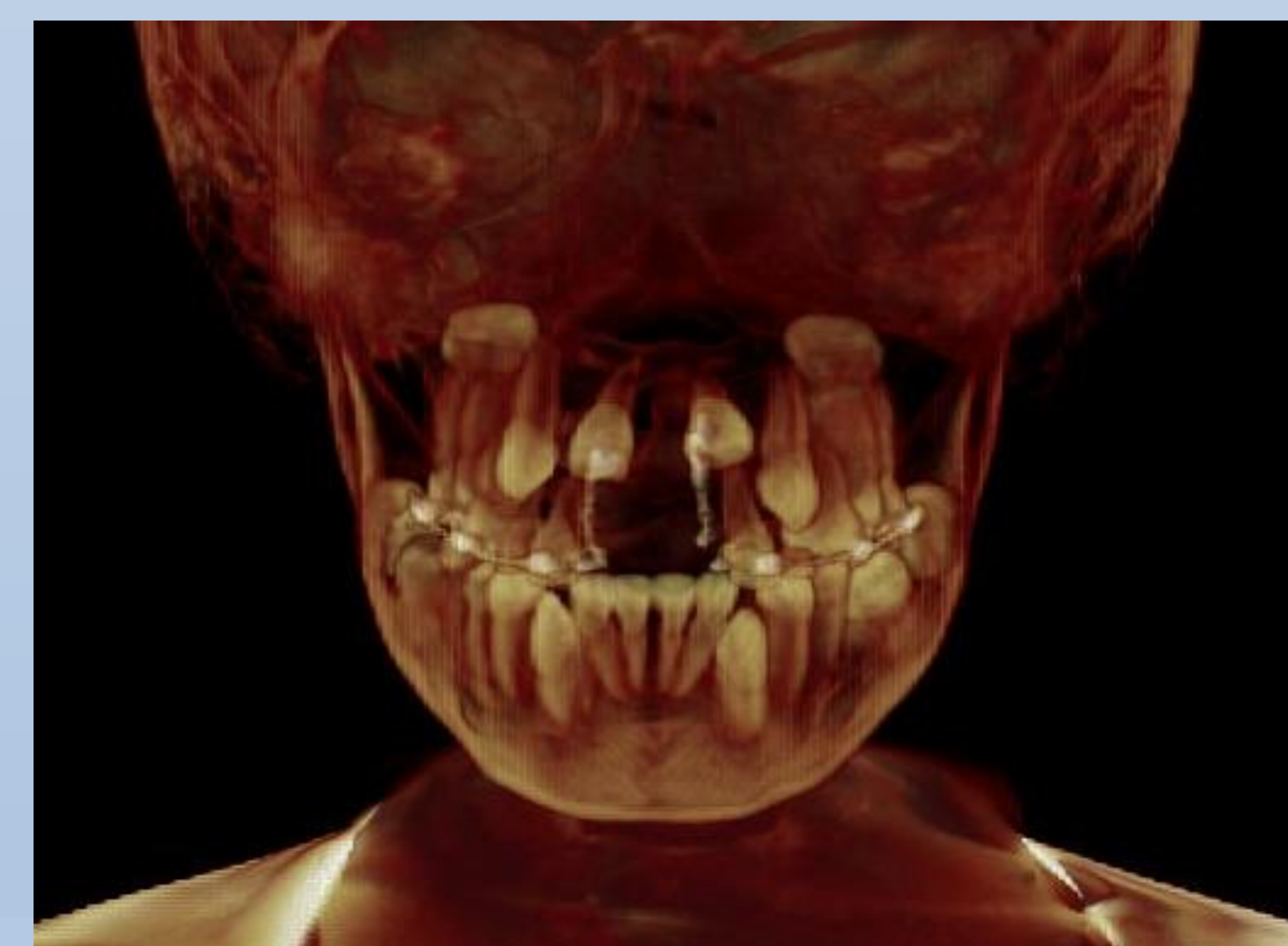


Fig. 6

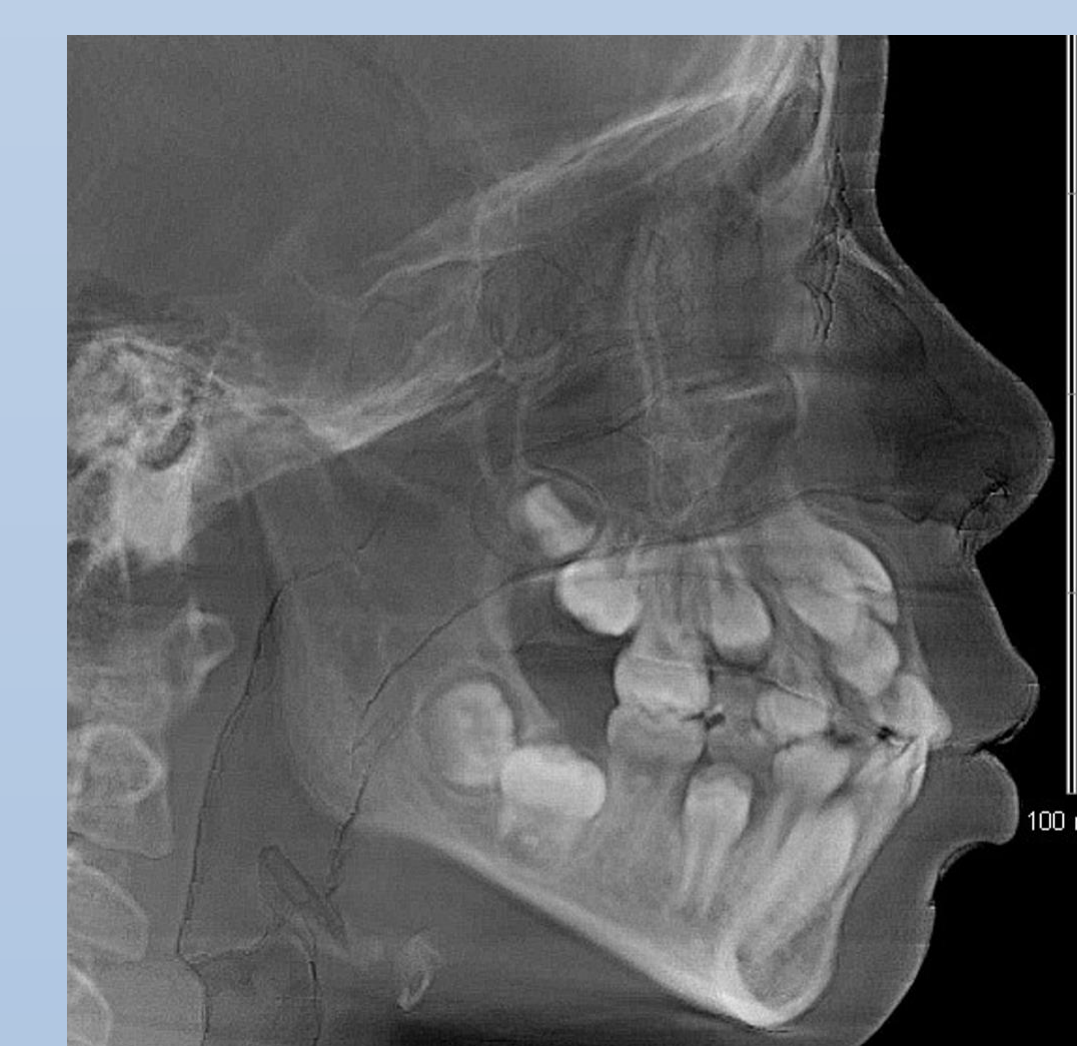


Fig. 7

Treatment

Craniofacial team at Case Western Reserve University implemented a treatment plan including:

- Expand maxilla and have anterior attachments for ligation of gold chains (Fig. 6)
- Refer to OMFS team at CWRU for extraction of #E,F, mesiodens #58,59 and expose and bond #8,9 with gold chain (Fig. 6,8,9)
- After expansion is satisfactory bond maxillary 1st permanent molars and maxillary central incisors to aid in bringing #8,9 into the arch (Fig. 9)
- After #8,9 are into occlusion level with NiTi wire and debond then deliver an interim retainer until patient is ready for phase II orthodontics. Patient is in active treatment with a hopeful outcome.



Fig. 8



Fig. 9

References

- 1) Russell KA, Folwarczna MA. Mesiodens--diagnosis and management of a common supernumerary tooth. J Can Dent Assoc. 2003 Jun;69(6):362-6. PMID: 12787472.
 - 2) Primosch RE. Anterior supernumerary teeth--assessment and surgical intervention in children. Pediatr Dent. 1981 Jun;3(2):204-15. PMID: 6945564.
 - 3) He D, Mei L, Wang Y, Li J, Li H. Association between maxillary anterior supernumerary teeth and impacted incisors in mixed dentition. J Am Dent Assoc. 2017 Aug;148(8):595-603. doi: 10.1016/j.adaj.2017.05.017. PMID: 28754185.
 - 4) Anthonappa RP, King NM, Rabie AB. Prevalence of supernumerary teeth based on panoramic radiographs revisited. Pediatr Dent. 2013 May-Jun;35(3):257-61. PMID: 23756311.
 - 5) Taylor GS. Characteristics of supernumerary teeth in the primary and permanent dentition. Dent Pract Dent Rec. 1972 Jan;22(5):203-8. PMID: 4506832.
 - 6) Garvey MT, Barry HJ, Blake M. Supernumerary teeth--an overview of classification, diagnosis and management. J Can Dent Assoc. 1999 Dec;65(11):612-6. PMID: 10658390.
 - 7) Omer RS, Anthonappa RP, King NM. Determination of the optimum time for surgical removal of unerupted anterior supernumerary teeth. Pediatr Dent. 2010 Jan-Feb;32(1):14-20. PMID: 20298648.
 - 8) Foley J. Surgical removal of supernumerary teeth and the fate of incisor eruption. Eur J Paediatr Dent. 2004 Mar;5(1):35-40. PMID: 15038788.
 - 9) Ayers E, Kennedy D, Wiebe C. Clinical recommendations for management of mesiodens and unerupted permanent maxillary central incisors. Eur Arch Paediatr Dent. 2014 Dec;15(6):421-8. doi: 10.1007/s40368-014-0132-1. Epub 2014 Jul 4. PMID: 24994110.
- AAPD. The Reference Manual of Pediatric Dentistry. 2021; 412-413