

## Abstract

Compound Odontomas (CO) are the most common odontogenic tumor. COs are usually asymptomatic, can lead to delayed eruption or impaction of permanent teeth, and often go undiagnosed until the second decade of life, resulting in compromised oral function and quality of life.

This case report describes an uncommon case of a CO in a 6-year-old child who presented with their parent to IMC Dental Center for a recall exam in January 2022. Prior to this visit, their child had experienced poor oral health and there was poor compliance for oral healthcare appointments. The parent's complaint for the recall exam was "She has some brown teeth." The child presented with visible dental plaque, missing teeth, poor diet, and the CO was discovered in the dental radiographs.

Our approach addresses the parent's lack of health management, the child's poor oral health and the CO by empowering the parent on primary prevention, collaboration with the oral pathologist and oral surgeon to excise the CO and finally providing space management to facilitate eruption of the permanent teeth and providing definitive dental care.

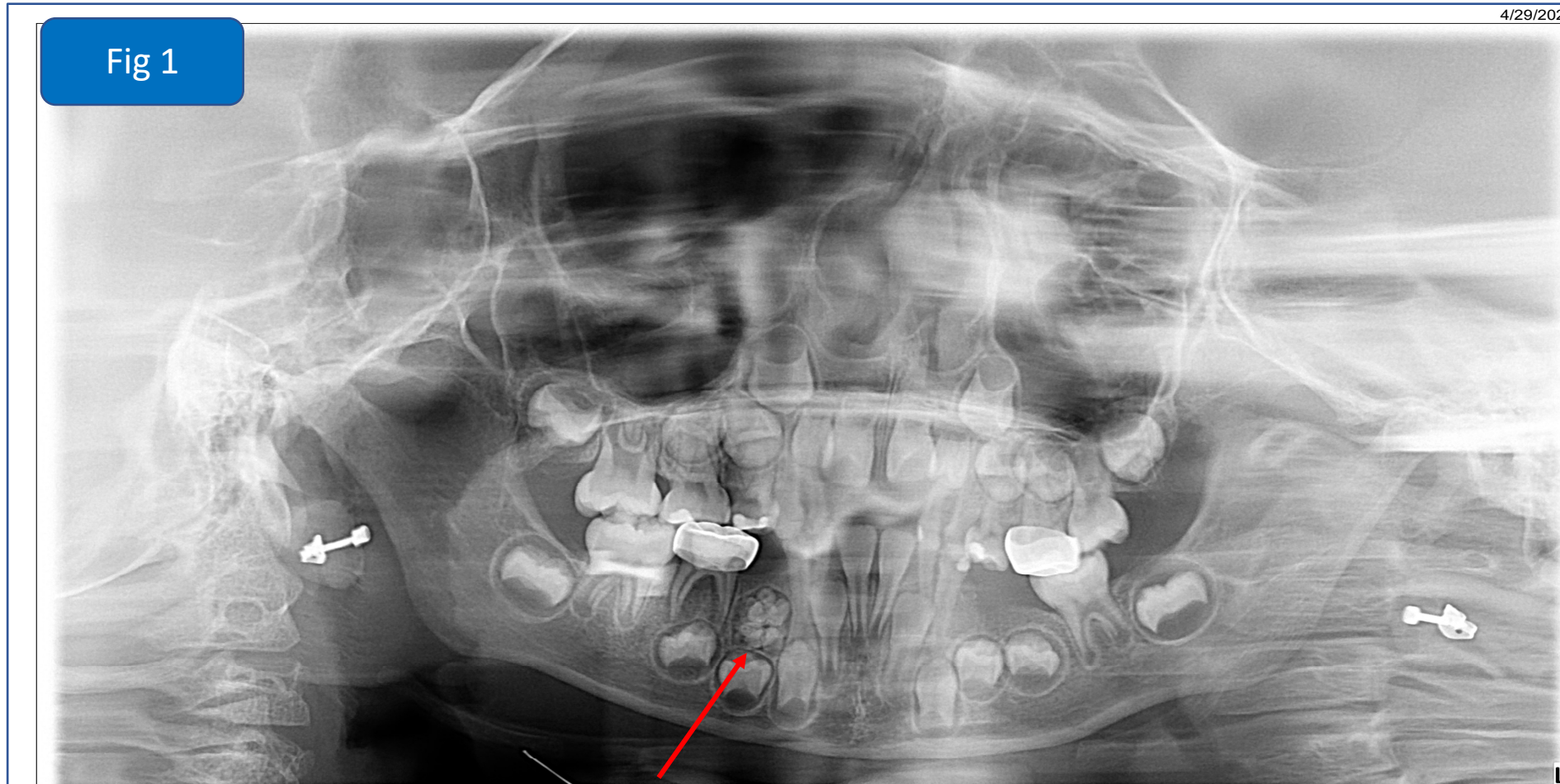
The parent has since become fully engaged in their child's oral health and has not missed any visits. Successful management of this child's oral health was essentially the result of the parent becoming an accountable health manager and presenting timely to dental visits, the two significant and predictable outcomes of Social Determinants of Health.

## Case Report

6-year-old female patient presented to Interfaith Dental Center with her Mother for a New Patient Exam. Mother's Chief Complaint for patient: "She has brown teeth."

- **Medical History:** None reported; **Child Development:** Within normal limits
- **Dental History:** Irregular Dental Visits; Oral Rehabilitation under General Anesthesia in 2020; **Home Oral Health Activity:** Brushes 1x/day. Diet with high frequency of cariogenic foods.
- **Examination:** Generalized plaque and debris; carious lesions noted throughout dentition. Missing #5 (Mother is unsure as to whether tooth never erupted or if tooth was extracted. Slight expansion of the bone noted on the buccal vestibular side of missing #5.

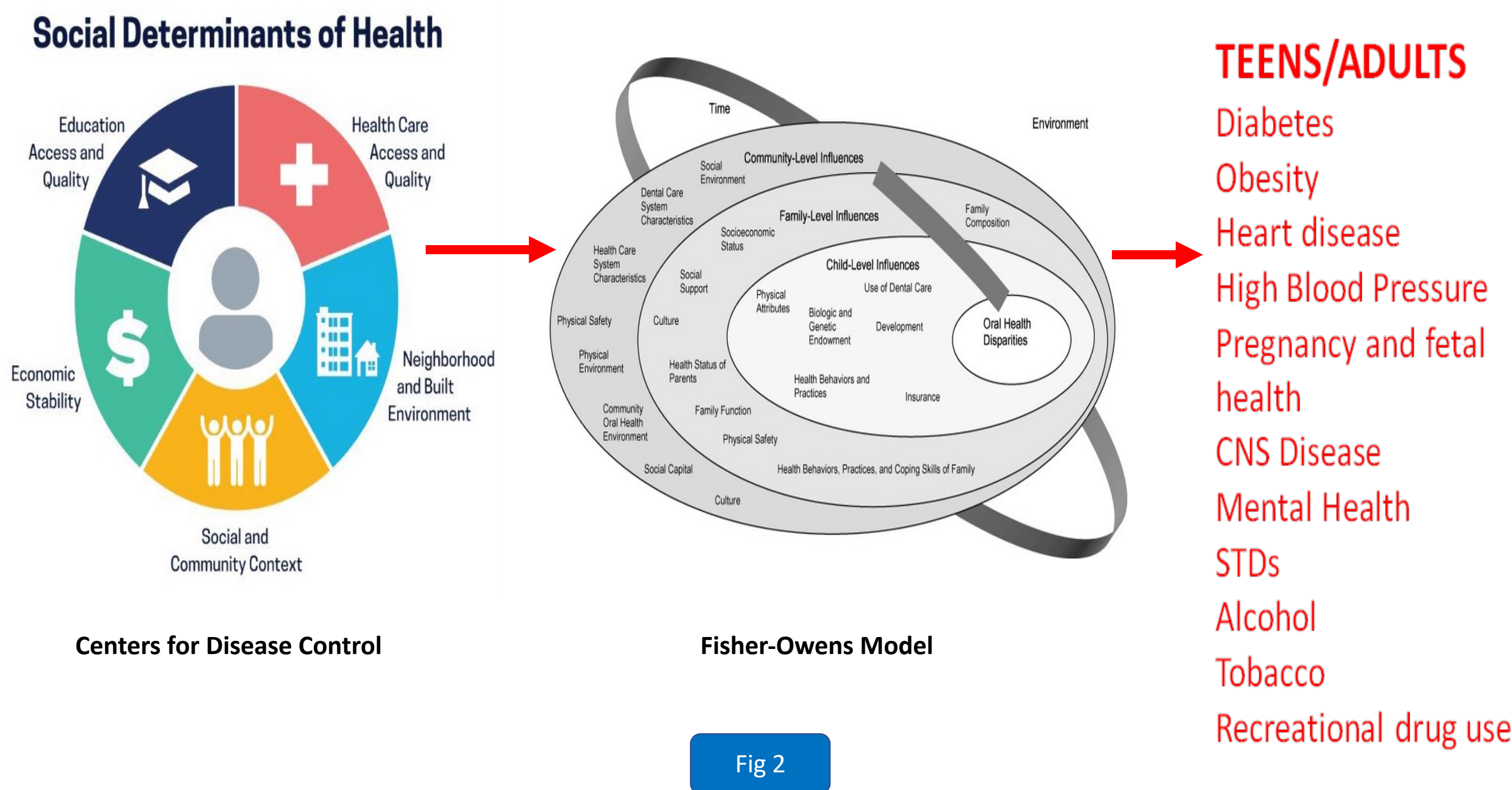
## Imaging



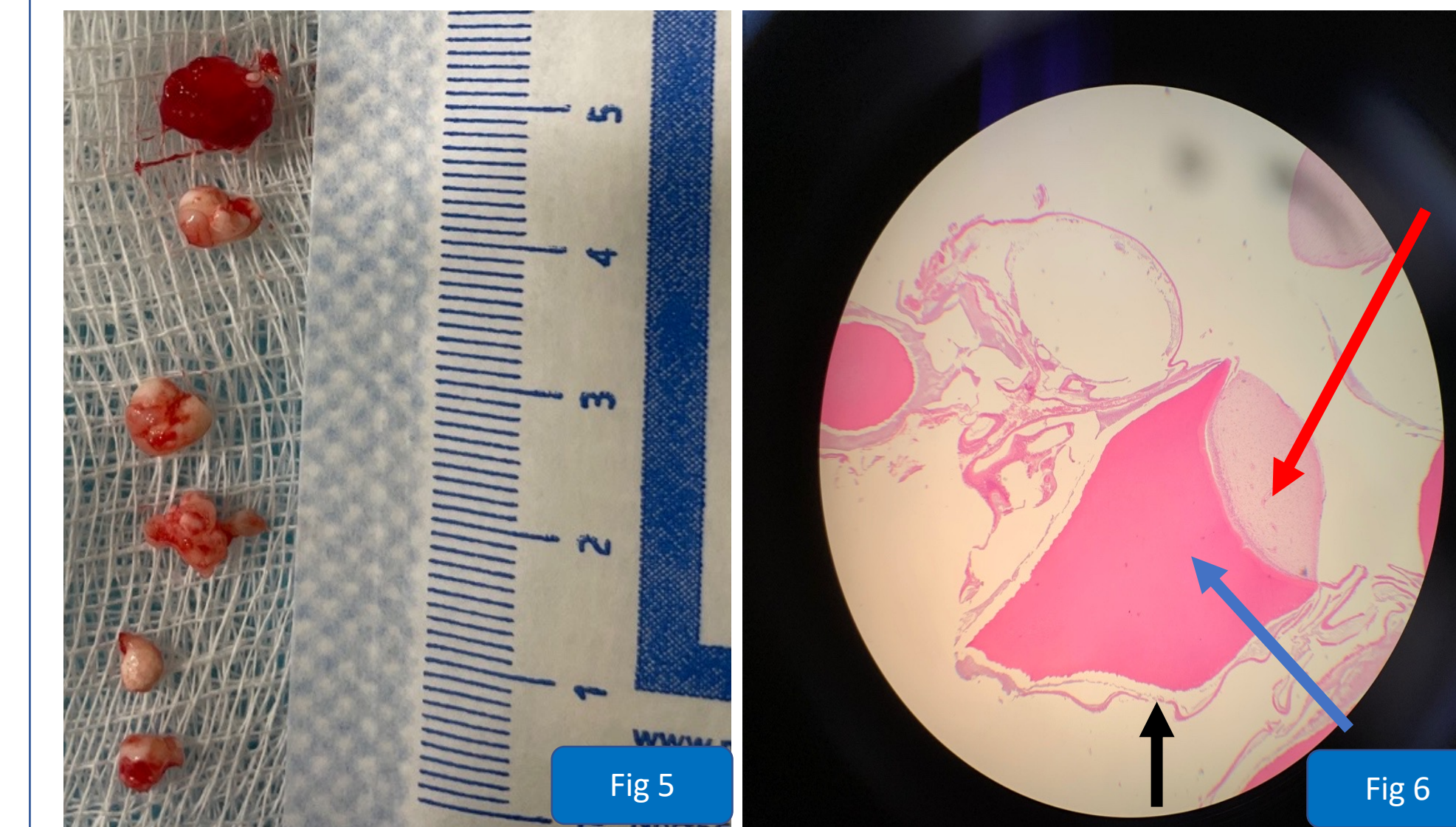
(Fig 1): **Panoramic radiograph:** Collection of multiple tooth-like structures with a well-circumscribed radiolucent rim located mesial to the roots of the right primary mandibular second molar (red arrow). Note: dental care presented on image was provided previously in 2020.

## Social Determinants of Health

When this patient underwent oral rehabilitation under GA at 5 years old, she already was already suffering the two predictable outcomes of Social Determinants of Health (SDoH): (1) Lack of quality health management by her caregivers and (2) Lack of timely dental visits to confirm the quality of health management. Since the oral rehab visit, the patient had not returned for follow-up examinations, and once she did present, had experienced a relapse (new caries). Therefore, our approach was to focus on the impact of this patient's SDoH - confirm the caregiver's engagement in their child's health prior to starting the new treatment. The family presented as scheduled for the next two follow-up visits confirming excellent compliance with oral health management for their child. Her dental care and follow-up visits have been moving forward successfully. Figure 2 illustrates the importance of how oral health is a significant marker in systemic health and quality of life as the threat of SDoH begins in early childhood.



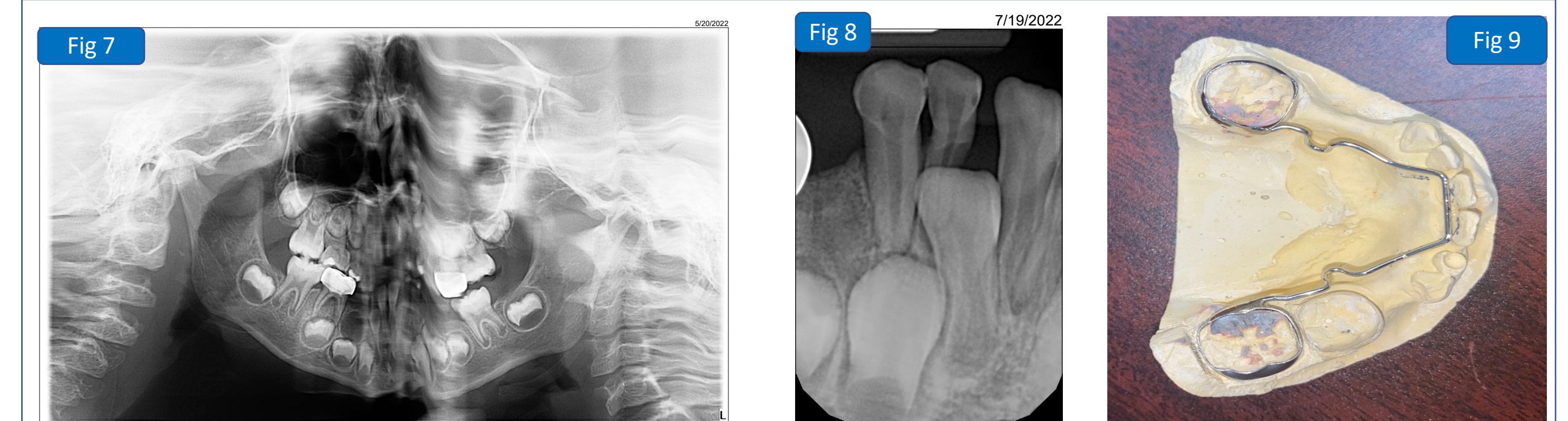
## Biopsy and Histology



(Fig 5): Six mineralized structures were removed from the interior of the lesion and sent for biopsy

(Fig 6): Histology results of lesion showing final diagnosis of compound odontoma. Black Arrow: Reduced Enamel Epithelium; Blue arrow: Mineralized Dentin; Red Arrow: Dental Pulp

## Post-op and Space Management

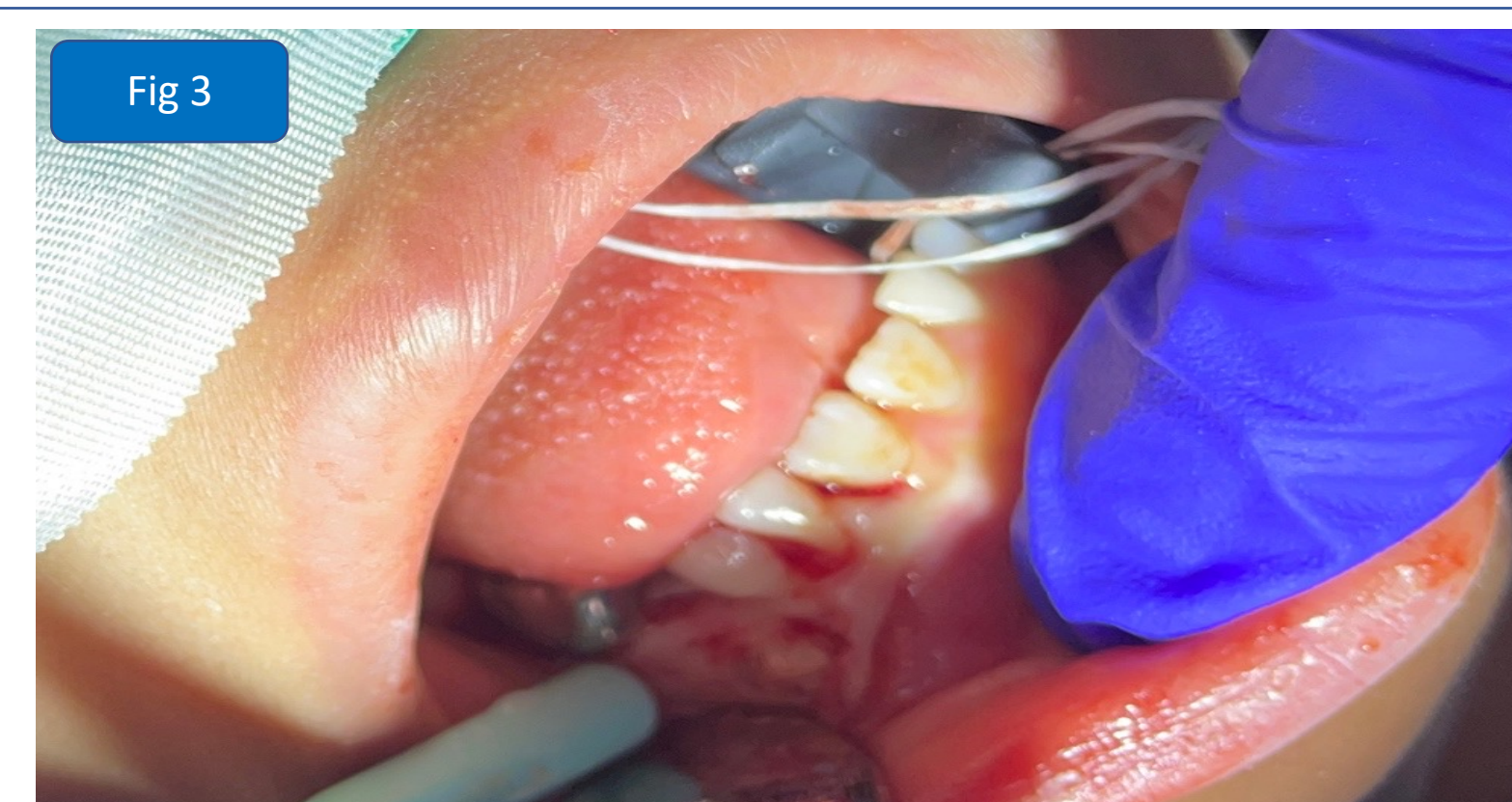


(Fig 7): 3-week post-op panoramic image showing radiolucent area showing excision of entire compound odontoma. Permanent successor shows that roots have just started forming.

(Fig 8): 3-month follow-up periapical radiograph showing bone formation in area of excised compound odontoma.

(Fig 9): Customized lower lingual holding arch for space maintenance with a modified design as to not impede eruption of the permanent lateral incisors

## Treatment



(Fig 3): Sulcular incision with distal vertical release was completed with a 15 surgical blade. Full Thickness mucoperiosteal Flap raised. Bone was removed with high-speed surgical handpiece distal to tooth #R to expose lesion.



(Fig 4): Tooth-like structures and follicular sac were enucleated with elevators without complication. Wound was curetted, socket thoroughly irrigated with saline. The flap was closed with 3-0 chromic gut and hemostasis was achieved.

## Discussion

In this pediatric case, the odontoma was found in the mandibular posterior region which is uncommon. Due to the timely diagnosis and excision of the odontoma while the permanent tooth has not completed root development, it has a greater chance of normal path of eruption. A significant component to the quality of this child's care was the change in the impact of the patient's social determinants of health. This was a result parent's oral health supervision of the child at home and the parent's compliance with dental visits.

## Conclusion

Odontomas are common and timely diagnosis & management of odontomas can prevent impaction/delayed eruption of permanent teeth. Panoramic images for developmental assessment during the mixed dentition are vital to the diagnosis of odontogenic tumors such as CO. Consultation with oral surgery and oral pathology are significant to successful management of CO. The parent's commitment to her role as a partner in her child's health has helped us succeed in managing this patient's oral health

## Contact

Charmi Vakharia, DDS PGY-3  
One Brooklyn Health  
1545 Atlantic Avenue, Brooklyn, NY 11213  
cvakharia@interfaithmedical.org  
347-815-1196

## References

1. Fig 2: Centers for Disease Control and Prevention. (2021, June 9). *Social Determinants of Health, health equity, and Vision Loss*. Centers for Disease Control and Prevention. Retrieved October 25, 2022, from <https://www.cdc.gov/visionhealth/determinants/index.html>
2. Fig 2: Fisher-Owens SA, Gansky SA, Platt LJ, Weintraub JA, Soobader MJ, Bramlett MD, Newacheck PW. Influences on children's oral health: a conceptual model. *Pediatrics*. 2007 Sep;120(3):e510-20. doi: 10.1542/peds.2006-3084. PMID: 17766495.
3. American Academy of Pediatric Dentistry. Management considerations for pediatric oral surgery and oral pathology. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2021:450-60.
4. Gedik R, Müftüoğlu S. Compound Odontoma: Differential Diagnosis and Review of the Literature. *West Indian Med J*. 2014 Dec;63(7):793-5. doi: 10.7727/wimj.2013.272. Epub 2014 Aug 26. PMID: 25867569; PMCID: PMC4668987.
5. de Oliveira BH, Campos V, Marçal S. Compound odontoma--diagnosis and treatment: three case reports. *Pediatr Dent*. 2001 Mar-Apr;23(2):151-7. PMID: 11340730.