

F.O.P. Italia Sito Ufficiale



**Cranio- Respiratory – Complex
Common Implications
and Risk Management Strategies.**



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Introduction: « *Primum non nocere* »

- ▶ Pathway for Care – Age and Extent of FOP related
 - ▶ Managing Risk – High Priority
- ▶ Flare-up constriction/closure of the mouth after oral treatment

MAIN OBJECTIVE OF ORAL CARE

MANAGE RISKS, heal, relieve, reconstruct ... without causing FLARE UP (with temporo-maxillary ankylosis)

Trauma to the TMJ
Limitation of mouth opening
Irreversible (ineffective and sometimes iatrogenic TMJ surgery)



DISCLAIMER

Photos are my own –

Permission to use – however, please do not take photos of them as not for general use



DENTAL ISSUES



Self Help Skills



Infection



Airway





S ECC

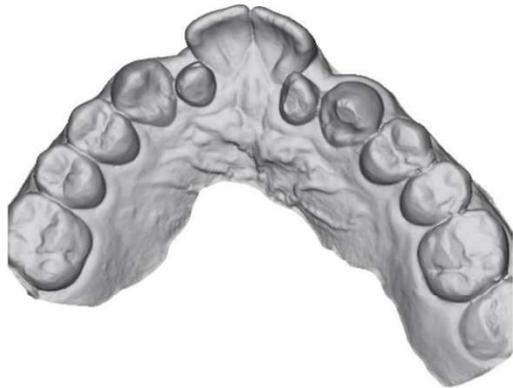
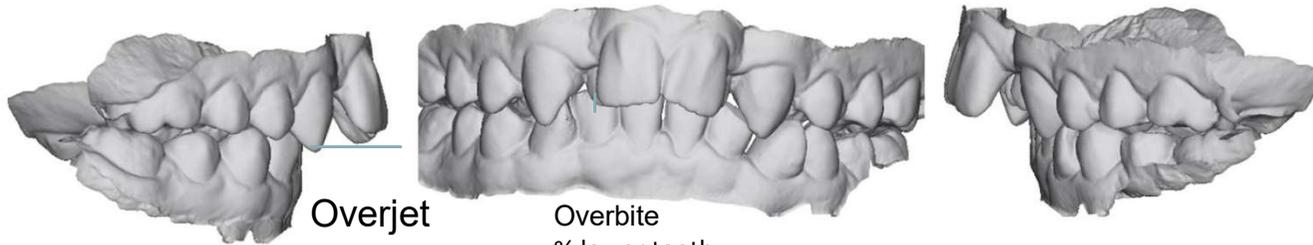


Poor Enamel
Grinding
Abscess



Relationship of Jaw to Cranial Base

Positioning of teeth within Jaw





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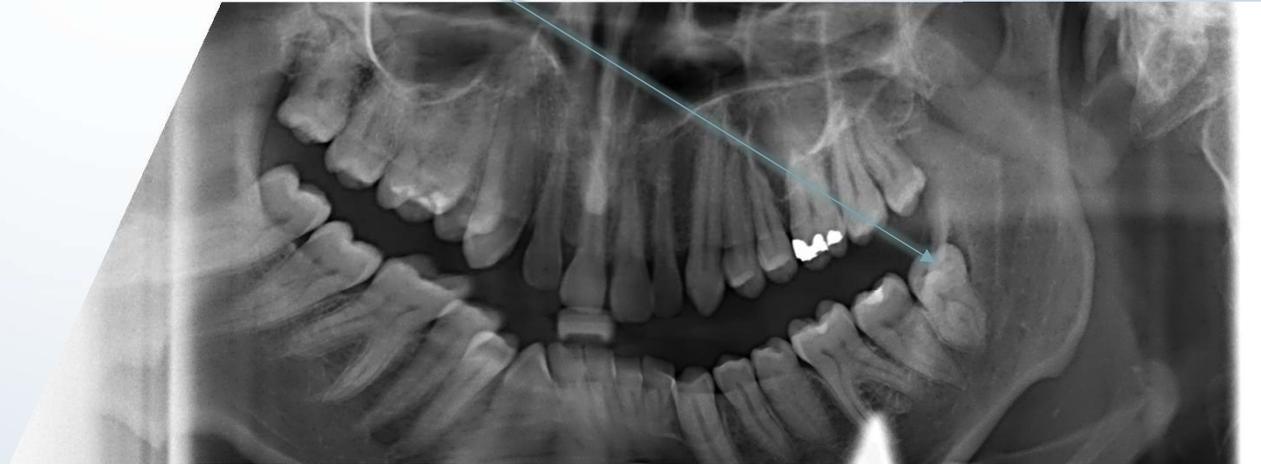
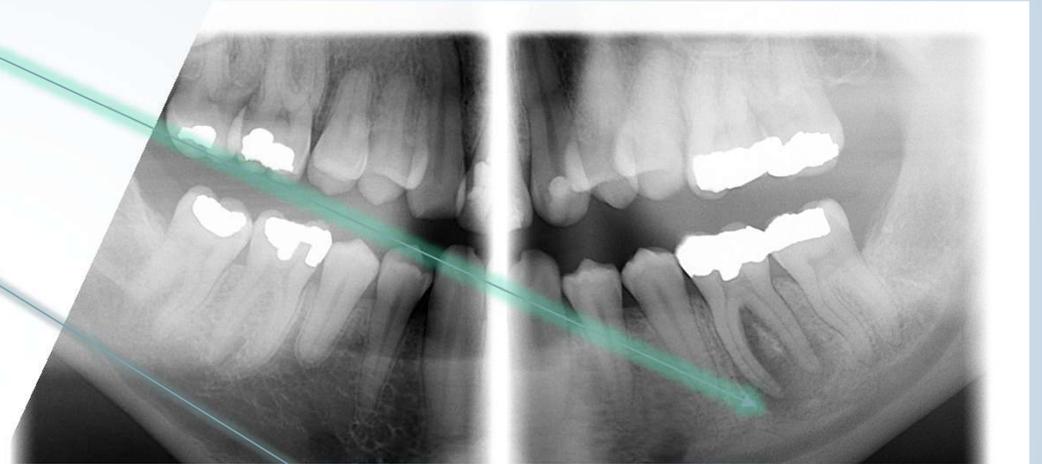
B·H·G
ORTHODONTICS



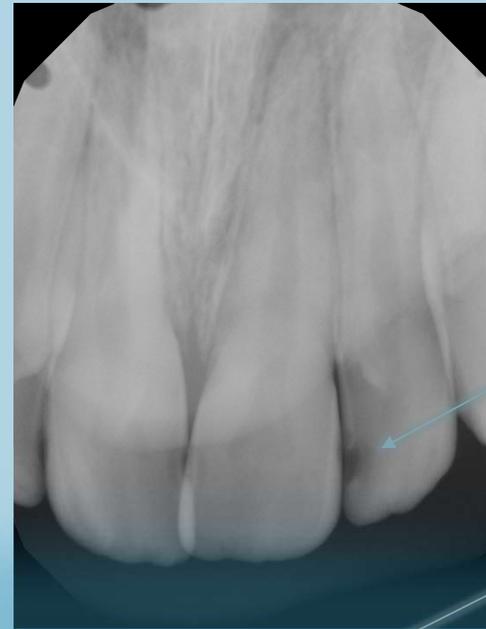
Dental Issues With Often seen with Aging

Abscess - Prednisone

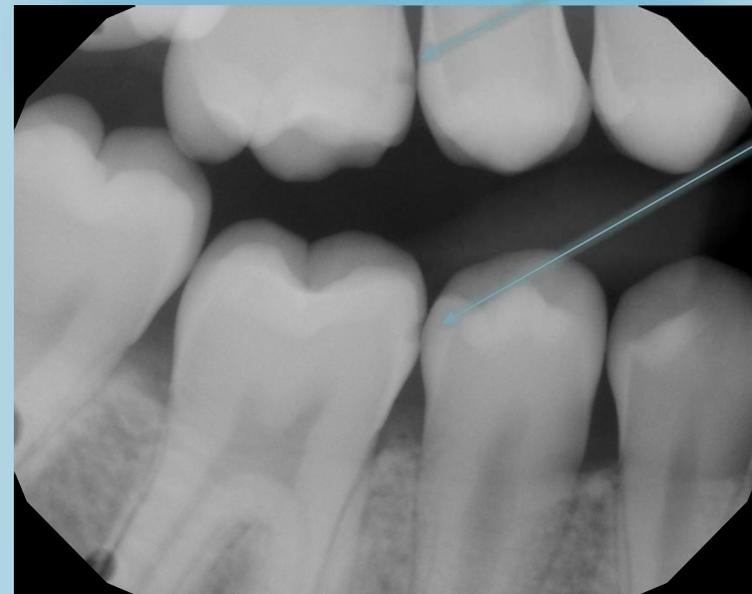
- ▶ Impacted Wisdom Teeth
- ▶ Neck Mobility – Heterotopic Ossification
- ▶ Difficulty for Access



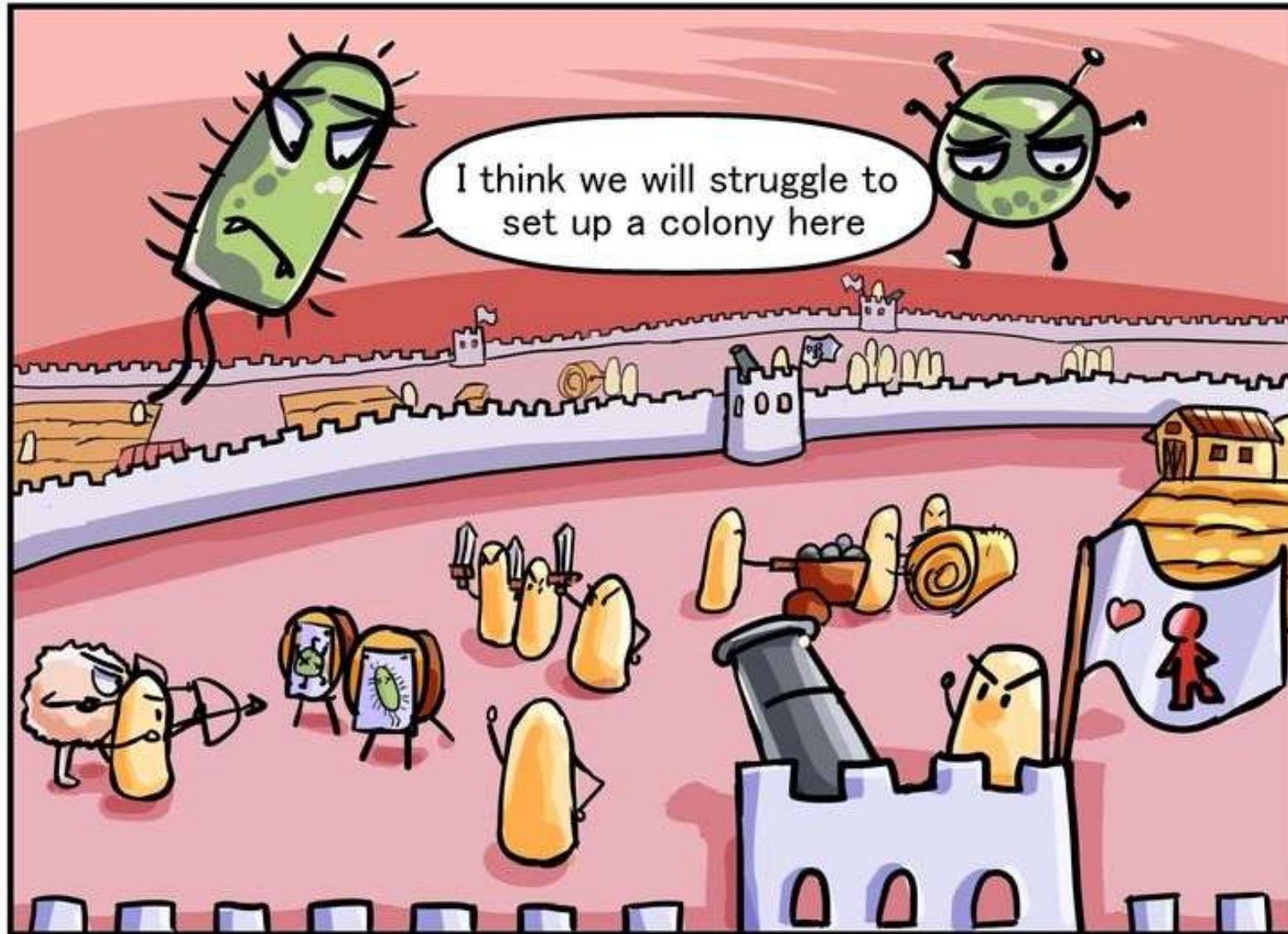
We are in the unfortunate situation that has some cavities. I am at a loss of what to do. I have sent the most recent update from our local dentist. We live (Timbuctoo)? I'm not sure of the level of skill and care that would be needed to fix these cavities. ?



Cavities



MICROBIOME Biofilm Formation



In about ten cases

- 2 micrognathias: skeletal class II.
- 2 mandibular hypoplasias
- 2 microstomies
- 1 retromandibulia
- 1 hyperplasia of the coronoid process
- 1 bifid condyle
- 1 deviation of the mandible at mouth opening
- 3 inabilities to chew effectively

Authors	Title	Year	Published In
Kabala, J. E.; Watt, I.; Hollingworth, P.; Ross, J...	Case report: Trismus and multifocal soft tissue ossification. A presentation of fibrodysplasia ossificans progressiva?	1989	Clinical Radiology
Luchetti, Wayne; Cohen, Randolph B.; Hahn, Greg...	Severe restriction in jaw movement after routine injection of local anesthetic in patients who have Fibrodysplasia Ossificans Progressiva	1996	Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontics
Van Der Meij, E. H.; Becking, A. G.; Van Der ...	Fibrodysplasia ossificans progressiva. An unusual cause of restricted mandibular movement	2006	Oral Diseases
Young, Justin M.; Diecidue, Robert J.; Nus...	Oral management in a patient with fibrodysplasia ossificans progressiva	2007	Special Care in Dentistry
Roberts, Tina; Stephen, Lawrence; Scott, Chris; ...	Fibrodysplasia ossificans progressiva (FOP) in South Africa: Dental implications in 5 cases	2011	Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology and Endodontology
Susami, Takafumi; Mori, Yoshiyuki; Tamura, Kazu...	Facial morphology and occlusion of a patient with fibrodysplasia ossificans progressiva (FOP): A case report	2012	Special Care in Dentistry
Kilmartin, Elaine; Grunwald, Zvi; Kaplan, F...	General anesthesia for dental procedures in patients with fibrodysplasia ossificans progressiva: A review of 42 cases in 30 patients	2014	Anesthesia and Analgesia
Oliveira, Francisco A. rtur Forte; Fernandes, Claris...	Clinical aspects and conservative dental management of a patient with fibrodysplasia ossificans progressiva	2014	The journal of contemporary dental practice
BR, Rajanikanth; K, Prasad; K, Vineeth; SMN...	Unresolving trismus following third molar surgery: Report of a case of fibrodysplasia ossificans progressiva with review of literature	2018	
de Vries, Teun J.; Schoenmaker, Ton; Mich...	Periodontal ligament fibroblasts as a cell model to study osteogenesis and osteoclastogenesis in fibrodysplasia ossificans progressiva	2018	Bone
Geddis-Regan, A.	Severe trismus and contraindicated exodontia in a patient with fibrodysplasia ossificans progressiva: case report	2018	British Journal of Oral and Maxillofacial Surgery
El Azem, Assem; Basi, Deleep; Mizen, Kelvin	Fibrodysplasia ossificans progressive; its oral manifestations and management. A case based discussion	2018	Oral and Maxillofacial Surgery Cases
Schoenmaker, Ton; Wouters, Fenne; Micha, ...	The effect of Activin-A on periodontal ligament fibroblasts-mediated osteoclast formation in healthy donors and in patients with fibrodysplasia ossificans progressiva	2019	Journal of Cellular Physiology
Ramos, Erika Antonia dos Anjos; Munhoz, Luciana;...	Myositis Ossificans Traumatica of the Temporal Muscle: a Case Report and Literature Review Emphasizing Radiographic Features on Computed Tomography and Magnetic Resonance Imaging	2019	Journal of Oral and Maxillofacial Research
Hietanen, Benjamin; Sullivan, Maureen; Frusti...	Dental management of a 26-year-old female with fibrodysplasia ossificans progressiva: A case report.	2021	Special care in dentistry : official publication of the American Association of Hospital Dentists, the Aca...
Bariker, Rajesh; Hugar, Shivayogi	Chairside endodontic management of a child with fibrodysplasia ossificans progressiva	2021	Journal of Indian Society of Pedodontics and Preventive Dentistry

ORAL HEALTH EVALUATION

FLARE STATUS

AIRWAY

— SLEEP - NOSE OR MOUTH BREATHING

BEHAVIOR

Change since last apt

DIET

Favourite Foods, Regurgitation,

COMMUNICATION —

Speech,

Extra-Oral -Exam

➤ Neck Mobility

➤ Posture

← Soft tissue

➤ Base line PO2





State of the art: FOP and oral management

- PUBMED
- FOP+teeth=12 articles (1996-2021)
- MOP+teeth=0
- Munchmeyer+teeth=0
- FOP+dentistry=3
- FOP+Dental=21 (1989-2021)

- Oral management/ anaesthetic specificities for dental care
- N= 16
- Case reports, recommendations
- No trials and only one (small) cohort study

Risk Management and FOP

Essential to prevent the maximum of dental / oral injuries that can cause Flare-up following care or not

Understand pathogenesis of oral disease and its prevention

Salivary tests: salivary flow if insufficient: rinsing after each meal

Sealant and/or infiltration of fluoridated varnishes and flow resin

Rinses – that can be used

Regular radiographic controls: Panoramic, retroalveolar, bite-wing, CBCT

Freedom of Choice

Generative

Past

NOW

Hope

Future

Destructive

Collaborative Tx Planning

From Mark Power – transformational coach for dentists

Adolescent – self individuation

Live ones own life and how they choose



Oral Rehabilitative Care in FOP

Necessary inventiveness in cases of mouth opening limitation: individual impression trays, custom-made implant screwdrivers, CAD/CAM, etc.

Short treatment sessions: importance of patient positioning, to stabilize the head, neck and shoulders with soft pillows.

Corticosteroid premedication

For prosthetic rehabilitation / conservative care: everything depends on the mouth opening

Everything can be considered if short sessions and anesthetic rules are respected (no mandibular block)

Periodontal surgery: little experience but seems to be contraindicated

Implantology: bone procedure ok but what about the flap?

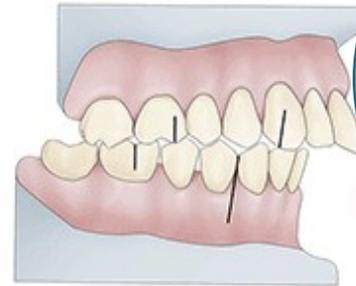
Need for clinical perspective on these issues questions

International collaborations and feedback

Orthodontics and FOP

Patients with FOP often develop mandibular hypoplasia with maxillary overbite: indication + of ODF (Luchetti et al., 1996), BUT overbite provides a means of access for eating as well as for oral and dental hygiene.

Class II



For children with an open anterior occlusion < 15 mm, ODF not recommended overocclusion will facilitate nutrition and subsequent hygiene.

Posterior and anterior reverse occlusions can have an effect on TMJ and should be corrected.



Submandibular space swelling in a patient with fibrodysplasia ossificans progressiva: a diagnostic dilemma
Bryce D. et al, case report | volume 67, issue 3, p668-673, march 01, 2009



Short appointments to reduce stress on TMJ.
Use of non-extraction therapy recommended. Alignment of anterior segments for aesthetic reasons, without treating posterior tooth crowding.
Crowding of posterior teeth: better choice than risk of TMJ thrust and ankylosis due to extraction (Levy et al., 1999).
Invisalign because much less force is generated than with traditional orthodontics and daily maintenance is much easier.

2024-12-20

B·H·G
ORTHODONTICS







Anesthesia: Local/ Regional

FOP patients have limited options for dental anesthesia

Mandibular blocks are prohibited because they lead to ossification of the pterygoid muscles and rapid ankylosis of the TMJ (Luchetti et al., 1996).

Local anesthesia option: para apical, intra ligamentary, intra pulp

General anesthesia (GA) may be required for dental care in patients with PFO (Nussbaum et al., 1996; Nussbaum et al., 2005).

General anesthesia

- Flare-ups may occur spontaneously, but can be precipitated by misplaced venipuncture, soft tissue injury, muscle fatigue, intramuscular injection, biopsy or excision of heterotopic bone, viral illnesses, routine dental therapy, and injection of local anesthetics during dental procedures
- If the care cannot be done in a safe way because no adequate mouth opening: in vigil, no possibility to protect the upper airway.
- Dental procedures can be safely accomplished in patients with FOP using a multidisciplinary approach
- Awake nasal fiberoptic intubation should be considered the first choice for airway management..
- Team needed: anesthesiologist , otolaryngologist (to assist with intubation or perform an emergency tracheostomy if needed), dentist, oral maxillofacial surgeon, cardiologist (consulted preoperatively), intensivist.
- Most FOP patients can be discharged to home on the same day as their dental procedures

Kilmartin E, Grunwald Z, Kaplan FS, Nussbaum BL. General anesthesia for dental procedures in patients with fibrodysplasia ossificans progressiva: a review of 42 cases in 30 patients. *Anesth Analg.* 2014 Feb;118(2):298-301. doi: 10.1213/ANE.000000000000021. PMID: 24361843; PMCID: PMC4936411.



What Happens If the Teeth are not Treated?

Gum disease that can affect the whole body.

Caries, tooth decay, that will develop into an abscess if left untreated will affect a region and then can progress to the entire body.

Calculus, a hard deposit on and around the teeth, that can prevent food and water from passing between the teeth. How about throwing up?

Each of these involves progressive amounts of pain.



Conclusion

Oral Care
course

Joint medical
approach

Communication
and
training/prevention
for DDS)

Collection of clinical
elements of care/post-care:
"tips", complications, chair
installation, medication...

Updating of
knowledge
(bibliographic watch)

ANYTHING THAT CAN HELP?

Medical Binder

- 1. All Medical Issues, not just FOP, past and present
- 2. Dental Issues, difficulties, past and present
- 3. History of receiving care. Reasons why not given care. Did the patient receive good care?
- 4. Physical Abilities and Disabilities of patient
- 5. Who helps the patient?
- 6. Modifications to Living Environment
- 7. Desires of family – recognizing different for every family – NO RIGHT OR WRONG
- Power of Attorney

THANK YOU

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