EXCELÊNCIA EM DTM

As Disfunções Temporomandibulares englobam diferentes patologias e são altamente prevalentes. Diagnosticar e tratar essas condições exige não só uma sólida formação, mas educação continuada para que os conhecimentos científicos e clínicos possam ser mais bem sedimentados e atualizados. Desta forma e com muita alegria, anunciamos nosso primeiro programa de educação continuada em DTM e Dor Orofacial.

CRONOGRAMA 2020

1° MÓDULO	2° MÓDULO	3° MÓDULO
15 a 18 de junho	17 a 20 de agosto	09 a 12 de novembro

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IMPACTED TEETH: Should they be **removed** *or* can only be **controlled?**

INDICATIONS and PRECAUTIONS

ABSTRACT: What are the criteria to leave an unerupted tooth in the maxillary bones? To control this situation, it is required a prior knowledge of the pericoronal follicle, especially its structure, its functions and the impact of its permanence. Through medical imaging, there are criteria to assert that it is normal and it involves evaluating the image, thickness, outline and the limits of the pericoronal follicle. Some diseases are exclusives from pericoronal follicle and therefore they may be called folliculopathies, but other diseases occur in this structure, besides the exclusive ones. There are three main indications to the removal of unerupted teeth, and that should be shared, as well as to the patients, to do not delay the cirurgical removal of the teeth.
KEYWORDS: Pericoronal follicle. Unerupted tooth. Pericoronaritis. Paradental cyst. Tooth resorption.

The answer to the title question is: - Yes, if you should remove them, but not in a dogmatic way! In some clinical situations, it is justified to clinically and imaginatively control an unerupted tooth in the jaws. A prior conceptualization must be made: the teeth to be controlled, must be totally unbroken, without communication with the contaminating oral environment.

For partially erupted teeth, a clinical solution should be provided to fit the dental arch or to perform its extraction. Contamination of pericoronal tissues in partially erupted teeth can lead to acute and chronic pericoronaritis, a parasitic cyst, and even resorption of its structures and neighboring teeth.

The contamination of pericoronal tissues by bacteria of the oral microbiota has a predominance of anaerobic bacteria that are more pathogenic. In systemically debilitated patients - such as uncontrolled diabetics, anemic, immunosuppressed, cancer patients with autoimmune diseases, alcoholics, malnourished and others - this contamination may be the primary origin of jaw osteomyelitis, especially in the jaw.

It is very important to remember that the option of "leaving" the partially erupted tooth in healthy people may be simple at the moment, but over time the general health may change and disease or phase or period may develop. debilitating. Microbial contamination via pericoronal follicle exposed to the oral environment can lead to complications that we cannot overlook.

And make no mistake, the main source of microbial contamination of tooth follicular tissues apparently covered by "intact" oral mucosa is the gingival sulcus of the neighboring tooth. If there is this possibility of communication in the radiographic image, already consider this tooth as partially erupted.

The purpose of this paper is to support the clinician for a safe therapeutic decision making that represents the best for the patient and even to share knowledge with some of his patients in this decision process.

I - WHEN TO LEAVE AN UNRUPTED TOOTH IN JAW BONES?
BEHOLD THE CRITERIA!

By leaving an unbroken tooth in the jawbones and controlling without removing or guiding it to assume its position in the dental arch, there are some risks that must be shared with the patient. Unerupted teeth have some very important con-

sequences and they will almost always come sooner or later. An interesting question to ponder is: What is the benefit of leaving an unbroken tooth in the jaws? The answer will be: none!

In certain situations the risk of leaving an unbroken tooth in the jaws may be assumed, such as:

1. **In fragile systemic condition** - More and more people live with us with debilitating diseases controlled by drugs and other therapies that are more easily contracted by microbial diseases against biological agents that are part of the oral microbiota.
   Osteomyelitis, for example, does not occur in systemically healthy patients. In patients with systemic compromise, bacteria enter the mucosal and skin openings more easily. Bloody procedures can act as a gateway for microorganisms such as surgery, extraction, periodontal disease, pericoronitis and periapical lesions.
   If the patient is an uncontrolled diabetic, immunodepressed, anemic, oncologic, autoimmune, alcoholic, malnourished, or other debilitating disease, this contamination at the site of extraction may be the initial origin of osteomyelitis in the jaw. If the unerupted tooth is intraosseous and without communication with the oral or sinus environment, periodic imaging can only be controlled each year to analyze the integrity of the structures and thus avoid this infectious risk.
2. **Decreased life expectancy** - The patient's advanced age at the time of diagnosis is important, as in many cases surgery of this nature is not warranted to simply remove an unbroken tooth that is not limiting tooth movement and or oral rehabilitation.
   Possible cysts and tumors that may originate from the pericoronal follicle are almost benign and almost always occur in young people. It should be noted that mineralized tissues and dental pulp do not give rise to cysts and tumors. These lesions originate from the follicular and periodontal tissues (Figure 1). It is important to emphasize that the simple removal of unerupted teeth does not safely prevent the appearance of odontogenic cysts and tumors, and the tooth and the follicular tissues should be removed. during surgery and subsequently analyzed microscopically.

In analysis of pericoronal follicles and their structures as to their evolution and changes with age (Figure 2), it was found that:

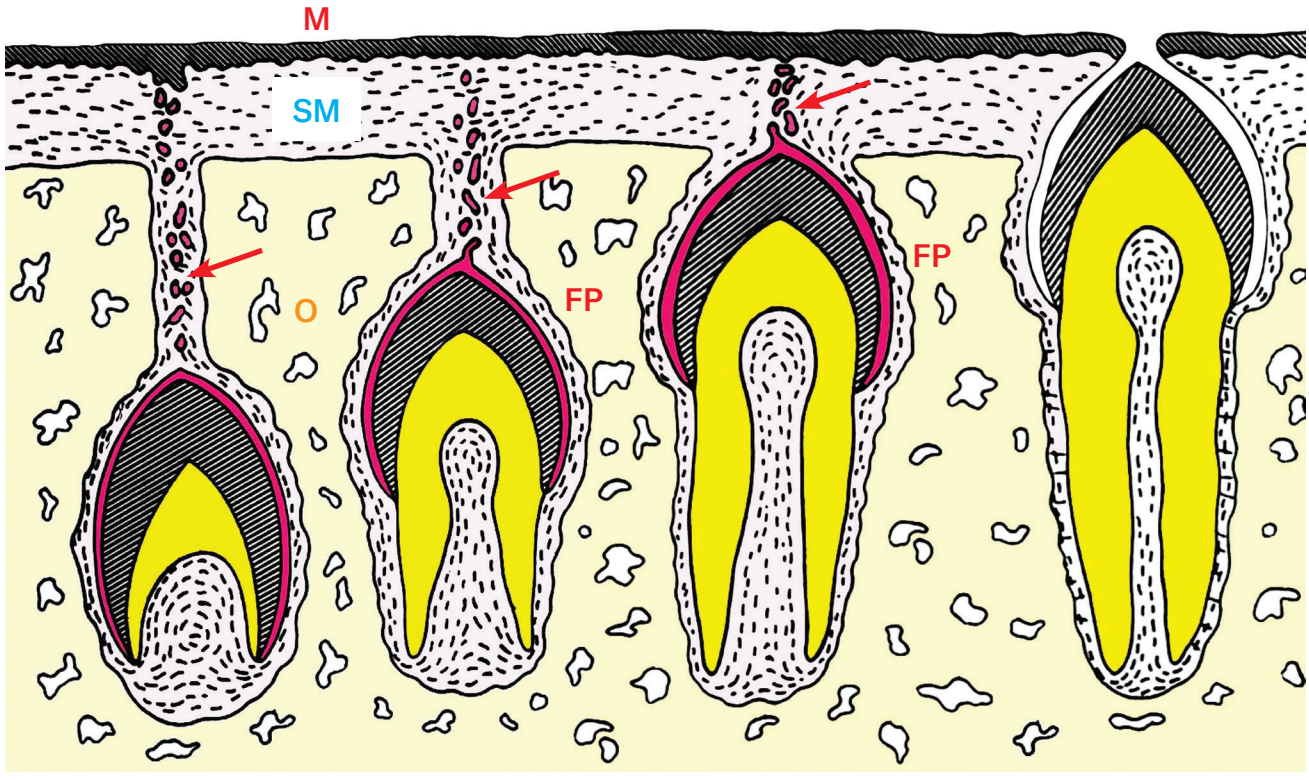


Figure 1: Formation of the hair follicle (PF) and the gubernacular cord (arrows), responsible for tooth eruption and gingival formation initial after the tooth reaches the mouth. Mucosa (M), Submucosa (SM) and Bone (O).

a. After the time of normal eruption for that tooth, the reduced enamel epithelium reveals ameloblast apoptosis and undergoes a metaplasia for atrophic stratified squamous epithelium,
b. The remnants of the dental lamina decrease dramatically with age doctoral dissertation Consolaro 1987. On average, there were 21.8 islets and cords of odontogenic epithelium in patients aged 11 to 12 years. These structures are the main origins of odontogenic cysts and tumors. But in patients over 30, this average dropped to 1.33 islets and cords. In short, the risk of cysts and tumors is generally very small in unbroken teeth, but in people over 30 this risk is even lower!

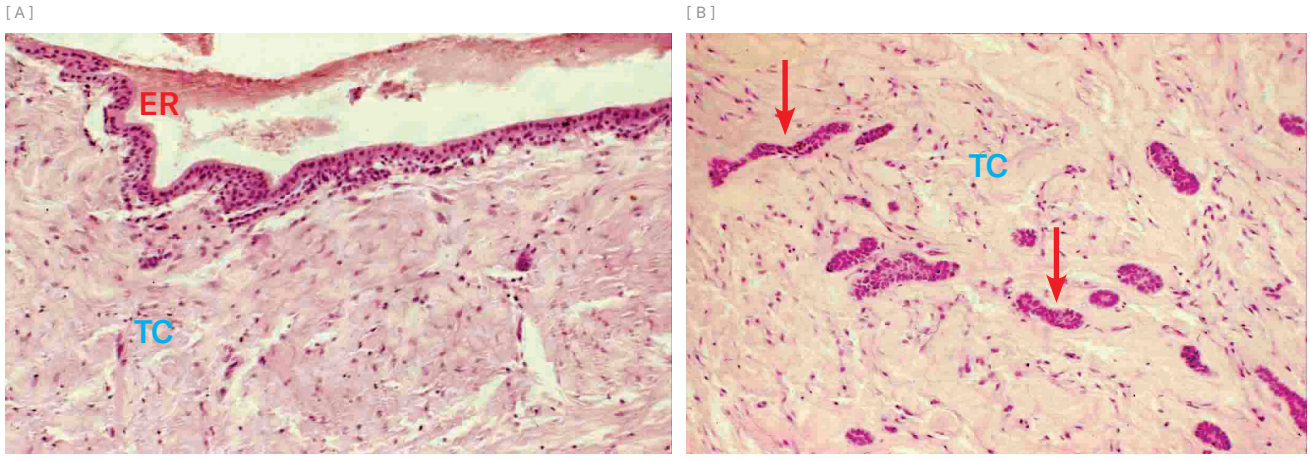


Figure 2: Unbroken tooth follicle: reduced enamel organ (ER) epithelium, membranous connective tissue (CT) and odontogenic epithelial remains (arrows) (HE: 10 and 25X).

3. **Difficult surgical access and / or high trans and postoperative risk of bleeding and fractures** - A careful assessment of these risks and the surgical changes to be brought about may lead to the conclusion that it is best to control yourself imaginatively rather than removing teeth in higher and more aberrant positions. Regarding the risk of cysts and derived tumors, the same considerations apply as in the previous topic.
4. **At risk of neural injury** - In many lower third molars their root structures are in a close structural relationship of proximity and even involvement, as there are cases where the mandibular canal is between its roots. Tomographic analysis reveals this proximity, and the professional cannot guarantee to himself and to the patient that the risk of a neural injury with paraesthesia and transient or permanent anesthesia does not exist or is equal to zero. In some clinical cases, these lower arch neural consequences appear to be inevitable and one of two decisions can be made to work around this problem:

a) Imaginatively control but for this the unerupted tooth must be well away from the second

molar, eliminating the risk of cervical and root resorption in this tooth and as far away as the gingival sulcus eliminating the possibility of short and medium term microbial contamination.

b) Arrange the decoronation or coronectomy in which the coronary part is surgically sectioned from 1 to 2mm from the anatomical end of the crown (Figure 3).

The decorated root part continues with pulp vitality and is normally related to the neural structure, avoiding paresthesia and anesthesia at the site. Over time the root part remains normally present, but in eventual cases it may develop into alveolodental ankylosis and dental resorption by replacement, leading over the years to replacement by normal bone tissue.

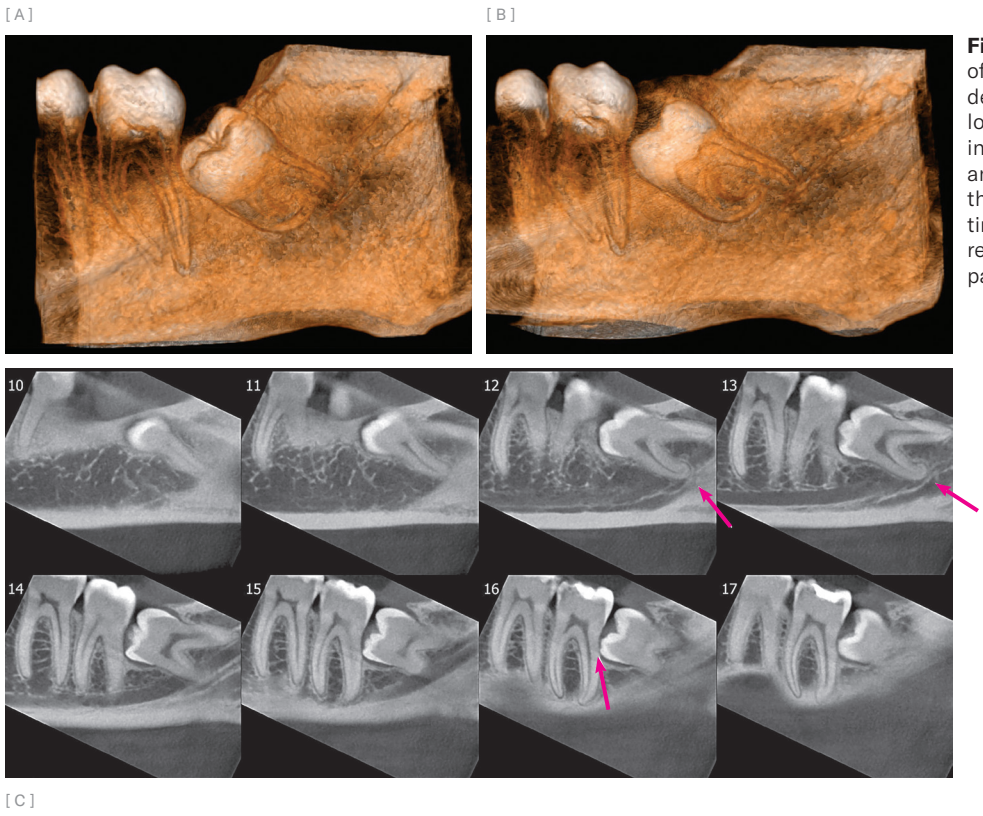


Figure 3: Tomographic evaluation of a case with indication to perform decoronation or coronectomy of the lower third molar, in order to avoid injuries inferior alveolar neural cells and consequent temporary paresthesia or permanent. At the same time, if prevents the occurrence of resorption second molars and cyst paradentary.

II - THE STRUCTURE AND FUNCTIONS OF THE PERICORONARY FOLLICLE

The pericoronal follicle is in the radiolucent space - or hypodense on CT scans - around the crowns of unbroken teeth. Its shape is of a membrane firmly adhered to the crown surface by the reduced epithelium of the enamel organ (Figs 1, 2, 4). This thin and delicate epithelium is supported and nourished by a loose to fibrous to even hyalinized connective tissue membrane (Fig 2). In the outermost part of the pericoronal follicles there is their union and continuity with the neighboring bone.

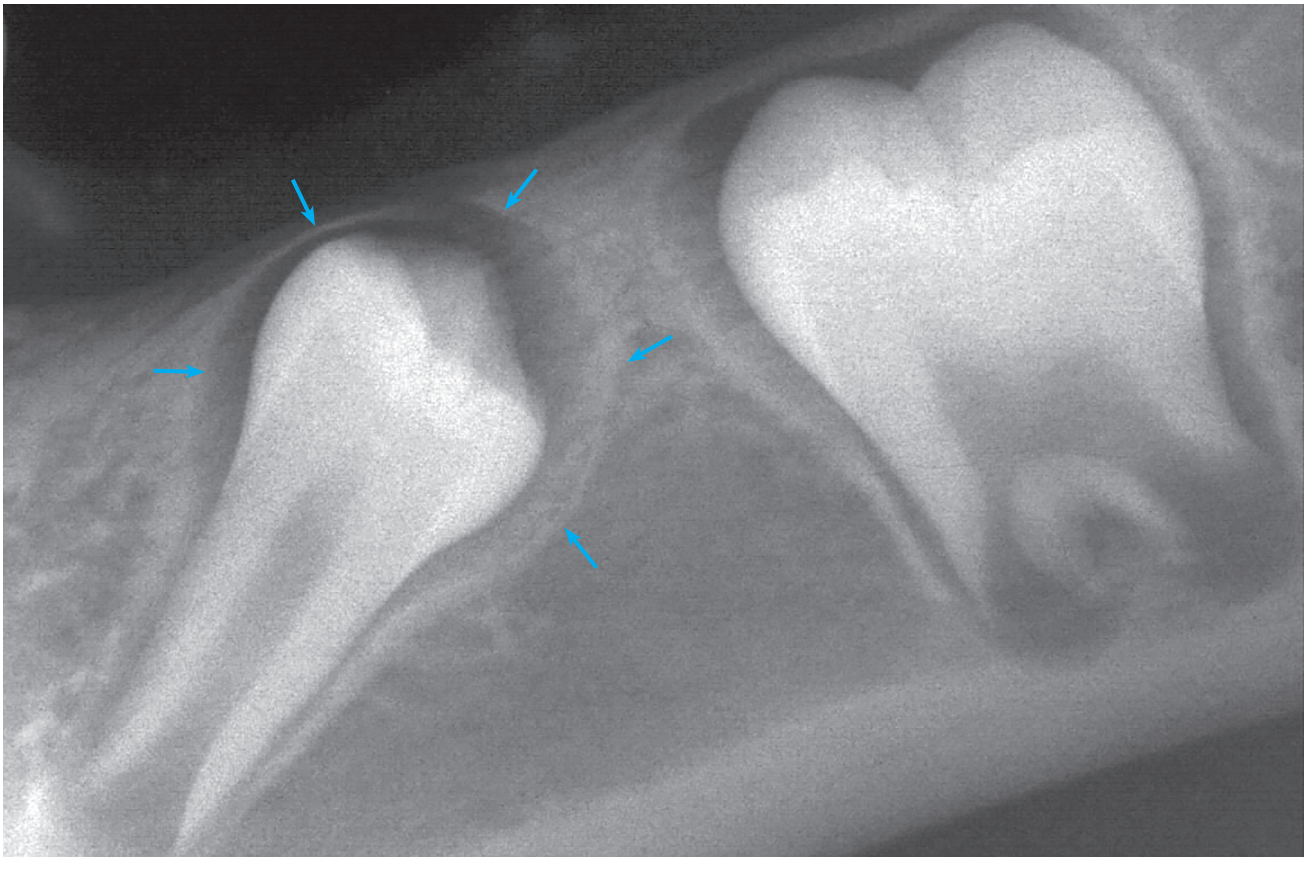


Figure 4: Criteria for evaluation of pericoronary space with normal follicle: 1)homogeneous radiolucency without radiopaque or radiolucent spots overlapping; 2) clear bone limit, with a continuous and uniform line (arrows); 3) uniform thickness and 4) regular contour, where the greater thickness should be between 1 and 5.6 mm.[2,4]

If we remove the pericoronal follicle and detach it from the surrounding bone, the obtained tissue fragment has the organization of a film and is therefore also known as the pericoronal membrane. By looking at the tissue fragment represented by the pericoronal follicle alone, one looks like a pouch that contains the dental crown and is therefore called a "pericoronal sac".

The pericoronal follicle is inserted into the cement enamel junction. In the cervical or cervical region, the epithelium ends with the enamel and the follicular connective part is inserted into the cementum and dentin gaps located just after the enamel.

Pericoronal space thickness - In measurements of pericoronal spaces in the periapical and panoramic radiographs, it was noted that the thickness of the pericoronal follicle can reach up to 5.6mm and still have normal structures and organization.[2,4] (Fig 4). From this thickness it is convenient to treat the lesion as a tooth cyst and treat it as such.

1. The eruption guide: the gubernacular cord or gubernaculum dentis

Amid the collagen fibers and other extracellular matrix components in follicular connective tissue are many islets and cords of the epithelial cells remaining from the dental lamina (Fig 2), varying according to the age of the patient.[2]

Once the dental lamina gives rise to dental germs in the deepest parts of what will be the future jaw or jaw, it fragments by apoptosis, but some of these cells, in small groups, persist as remnants of the dental lamina. They are organized in the form of islets and epithelial cords forming a true Indian line from the reduced epithelium of the tooth enamel organ toward the buccal mucosa (Fig 5).

2. EGF Functions

Soon after, the jaw mesenchyme still gives rise to bone tissue. Dental germs and the cord of epithelial islets are respected by the surrounding bone. The alveolar crypt is formed around the germs, and around the remnant strands and epithelial islets, a delicate bone channel is formed inside it. This canal and the epithelial cord are called gubernaculum dentis or canal and gubernacular cord (Fig 5).

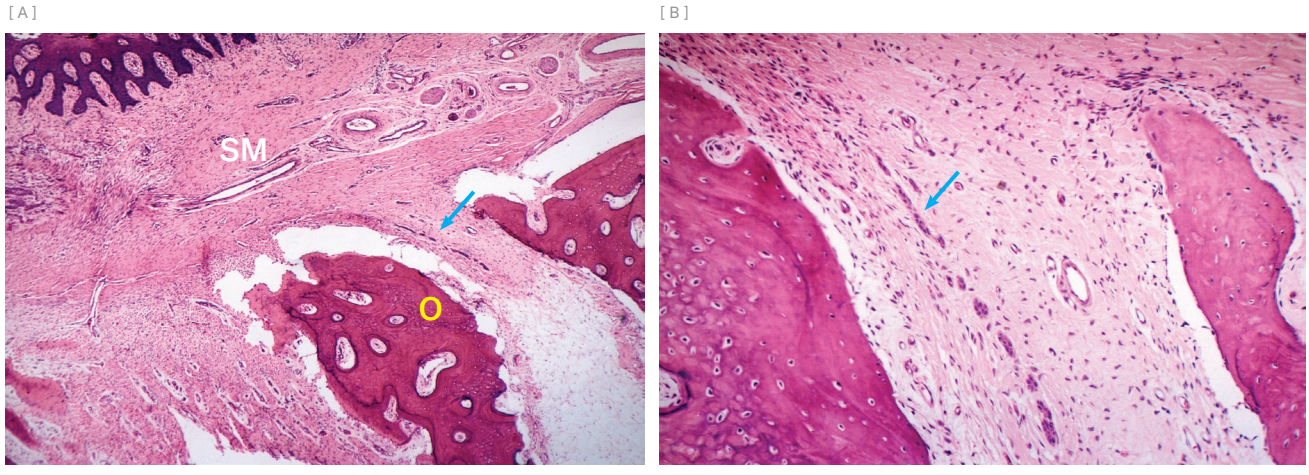


Figure 5: Gubernacular cord (arrows), formed by islets and odontogenic epithelial cords that are incorporated in the hair follicles and the gum. Mucosa (M), Submucosa (SM) and Bone (O) (HE: 10 and 25X).

The function of the gubernacular canal and cord is to direct the tooth when its crown is complete toward the alveolar process at its most occlusal part. As the tooth erupts towards the mucosa, the pericoronal follicle incorporates into the connective tissue the islets and cords of the gubernacular cord epithelial cells and increases this epithelial component (Fig 1). When some of these epithelial islets remain in the gum, they are called Serres Epithelial Remnants.

Epithelial cells need to be in constant proliferation and synthesis due to their desquamation in the skin and mucous coatings, as well as due to their intense secretion production such as milk, saliva and tear. This constant stimulus to proliferation is provided by the epithelial cells themselves that release to their neighbors via specific receptors a mediator called EGF or Epidermal Growth Factor.

While in the epithelium EGF stimulates proliferation, in bone cell receptors, this mediator stimulates bone resorption. Other mediators have their action triggered on the pericoronal follicle from EGF (Fig 1) as TGF-beta, which stimulates the formation of clasts and CSF-1 and IL-1, which recruit their precursors.

3. The dental follicle forms the crypt and the pericoronal follicle guides and performs the tooth eruption[1]

Where epithelial cells exist, bone tissue remains at a distance, as with Malassez epithelial remains in maintaining periodontal space without bone reaching the root surface of the tooth.[3] released EGF stimulates bone resorption.

During bone formation by the mesenchyme, the dental germs are respected and the alveolar crypts are established and the gubernacular canal at the same time as epithelial tissues constantly release EGF which stimulates neighboring bone resorption.

The pericoronal follicle has:

1. An epithelial component represented by the reduced epithelium of the enamel organ adhered to the enamel and the dental lamina-derived odontogenic cell cords and islets (Figs 1,2 and 5);
2. Connective tissue representing the largest volume of follicular tissue that is outside the pericoronal space is in the form of a membrane and / or sac;
3. Epithelial component that continuously releases EGF to stimulate maintenance of its structure and preserve the pericoronal space by stimulating bone resorption, leaving the bone away from the enamel (Figs 1,2 and 5);
4. A permeation of EGF and other cascading mediators that makes it essential for the mechanism of tooth eruption. The forces derived from tooth formation and growth vectors stimulate increased EGF secretion that promotes bone resorption directed to occlusal tooth eruption (Fig 1).

When experimentally removing the tooth root[1] but the crown and the pericoronal follicle are maintained, the dental crown erupts normally. They also erupt when the crown is removed and the pericoronal follicle and tooth root are left in place. Metal and silicone replicas replace the unbroken teeth, but preserve the pericoronal follicle, the artificial teeth erupt in the same way.

The pericoronal follicle is the essential and fundamental structure of tooth eruption, despite the fact that for decades it was believed that the indispensable structure was the tooth root.

4 - Other functions of the pericoronal follicle

In addition to being the protagonist of the tooth eruption, the pericoronal follicle has the following other functions:

a) "hide" or protect the enamel from resorption by clastic cells;

b) prevent the bone from forming directly on the enamel surface,

c) constitute the primary junctional epithelium by fusing with the mucosa and allowing the tooth to erupt in the buccal environment without exposure of the internal body, represented by the gingival connective tissue, to a highly contaminated environment (Fig 1).

III - PERICORONARY SPACE IMAGE EVALUATION CRITERIA: IMAGE, THICKNESS, CONTOUR AND LIMIT

The image of the pericoronal space (Fig 1) should:

a) Be homogeneously radiolucent or hypodense, with no radiopaque points or radiolucent microbe-like areas, as this may denote derivation of odontogenic tumors,

b) To have its boundary with the neighboring bone represented by uniform and continuous radiopaque line. If this line is disrupted and or with rat-gnawed images it may represent shunt for odontogenic cysts and tumors,

c) Have the outline characterizing a uniform thickness for the pericoronal space, symmetrical with respect to the dental crown. The formation of thicker areas than others in the form of embroidery and wavy contours may characterize derivation of odontogenic cysts and tumors,

d) Have a thickness ranging from less than 1mm up to 5.6mm.[2,4] Beyond these limits, no tooth cyst or other follicular disease should prevail.

In the evaluation of the image of a pericoronal space, it should be emphasized that diseases derived from the pericoronal follicle may be very small and present even when the pericoronal space has apparently normal thickness.

IV - PERICORONARY FOLICULOPATHIES

The localized diseases that originate exclusively in the structures of the pericoronal follicle can be called pericoronal folliculopathies and they are:

- ✓ Acute and Chronic Pericoronaritis
- ✓ Paradental Cyst
- ✓ Inflammatory Follicular Cyst
- ✓ Tooth cyst

- ✓ Eruption Cyst
- ✓ Hyperplastic Pericoronal Follicle

In the pericoronal follicle many other odontogenic cysts and tumors originate, but are not unique to this structure or location. In the pericoronal follicle may also originate:

- Odontogenic keratocyst
- Ameloblastoma
- Myxoma
- Odontogenic fibroma
- Odontoma and Others

V - INDICATIONS FOR REMOVAL OF UNRUPTED TEETH OR THE THREE CONSEQUENCES OF YOUR PERMANENCE IN THE JAW BONES

1. Cystic and tumor formation

The cystic and neoplastic alterations derived from a pericoronal follicle are occasional and percentage very rare if we consider the frequency of non-erupted teeth present in people, to the extent that it is not possible to express this percentage as a small and fractional prevalence.

Possible cysts and tumors that may originate in the pericoronal follicle are almost entirely benign, including ameloblastomas. These lesions originate from the follicular and periodontal tissues. The simple removal of unerupted teeth with their mineralized structures does not safely prevent the appearance of odontogenic cysts and tumors, since mineralized tissues and dental pulp do not give rise to cysts and tumors.

To justify the prevention of cysts and tumors as an indication for the removal of non-erupted teeth, the tooth and the follicular tissues should be extracted, the latter being checked in the trans-surgical procedures and analyzed microscopically.

The tooth cyst is the most "classic" follicular cyst and the accumulation of fluid between the reduced epithelium of the enamel organ and the enamel (Fig 6) is probably due to vascular compressions during the eruption leading to edema formation, which eventually runs out. for infiltrating: 1. Between the reduced epithelium of the enamel organ and the ename.[1,2] Between the layers of the reduced epithelium of the enamel organ or.[3] In the center of the odontogenic epithelial islets present in abundance in the pericoronal follicles. The tooth cyst is asymptomatic and its diagnosis is almost always made in routine imaging tests (Figs 7 and 8).

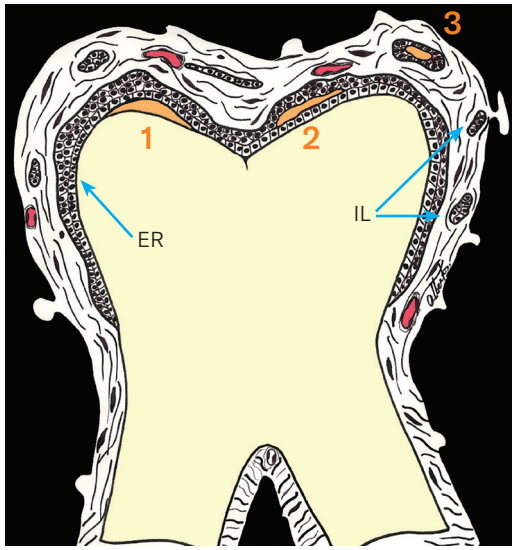
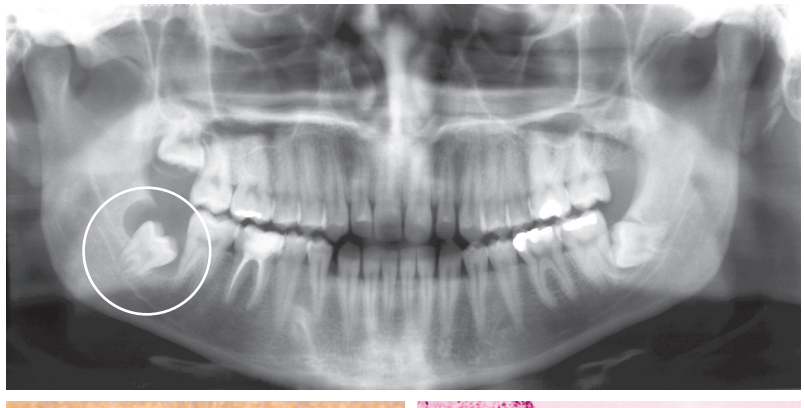
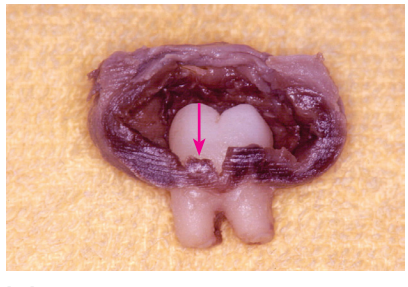


Figure 6 : The accumulation of liquid (in orange) between the hair follicle and the enamel (in yellow) can start: 1) between the reduced epithelium of the enamel organ (ER) and enamel; 2) between the layers of the reduced epithelium of the enamel organ; 3) inside one of the remaining epithelial islets of the dental lamina or of the gubernacular cord (IL). This liquid would originate from edema induced at the site by a compression of venules (in red) against the bone (in black) during the eruptive trajectory.

Figure 7: A) Dentigerous cyst on tooth # 48 with insertion in the cervical region, well defined and without resorption in the neighboring tooth (circle). **B**) Surgical specimen obtained from dentigerous cyst in which the tooth it is part of your wall (arrow). **C**) The cystic cavity is lined with 2 to 5 layers epithelium still similar to the reduced epithelium of the organ of the enamel (arrows) and absence of inflammatory infiltrate (HE 25X).

[A]





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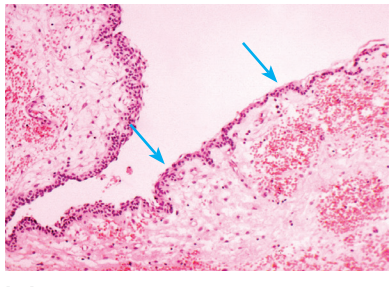


[C]

[A] [B]

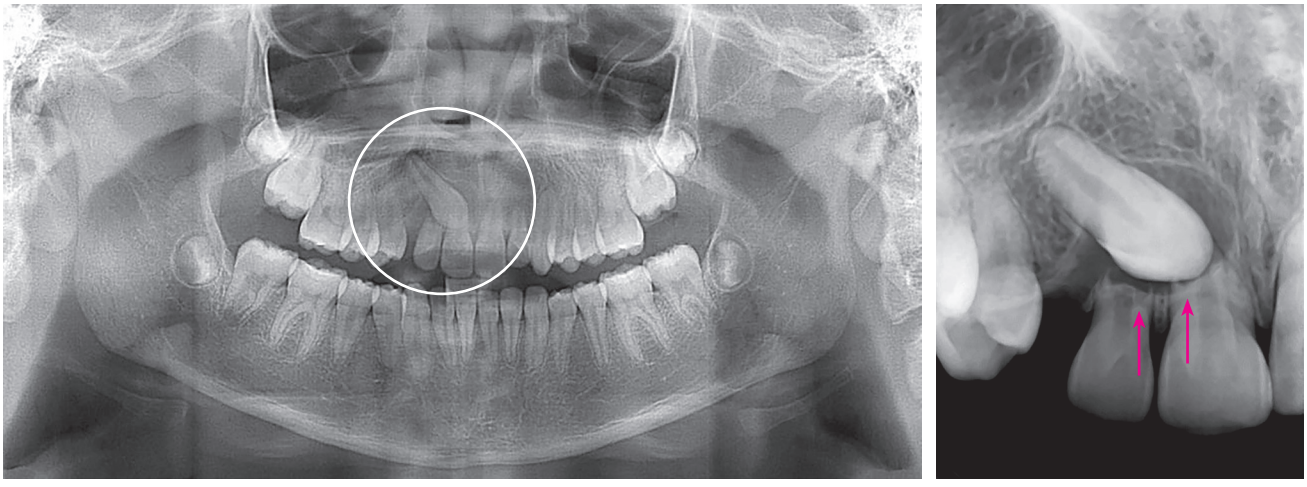


Figure 8: Incipient dentigerous cyst in upper canine and severe resorption in teeth # 11 and # 12. The measure of more than 5.6mm in the greatest thickness and the bulky irregular contour of the pericoronary space. The presence of the cyst, confirmed by the outflow of liquid during the operation, it does not prevent orthodontic traction of the canine. Teeth with resorption do not require endodontic treatment, they should only be relieved by the displacement of the canine.

It was once believed that the tooth cyst would often give rise to ameloblastomas. It is now known that this does not occur and that the cyst that most gives rise to ameloblastoma in its structure is the odontogenic keratocyst. The most common origin of ameloblastomas is the dental lamina-derived odontogenic epithelial islets present in all spaces of the maxillary bones, especially those younger than 30 years of age.

In many cases, the pericoronal follicle may accumulate fluid between the reduced epithelium of the enamel organ and the enamel as a result of an inflammatory edema induced by pulp problems that extrapolates to the deciduous bifurcation region. This accumulation between the reduced enamel epithelium and the enamel associated with the inflammatory process in the predecessor deciduous tooth characterizes the inflammatory follicular cyst, the most frequent cyst in humans in the first decade of life (Figs 9 and 10).

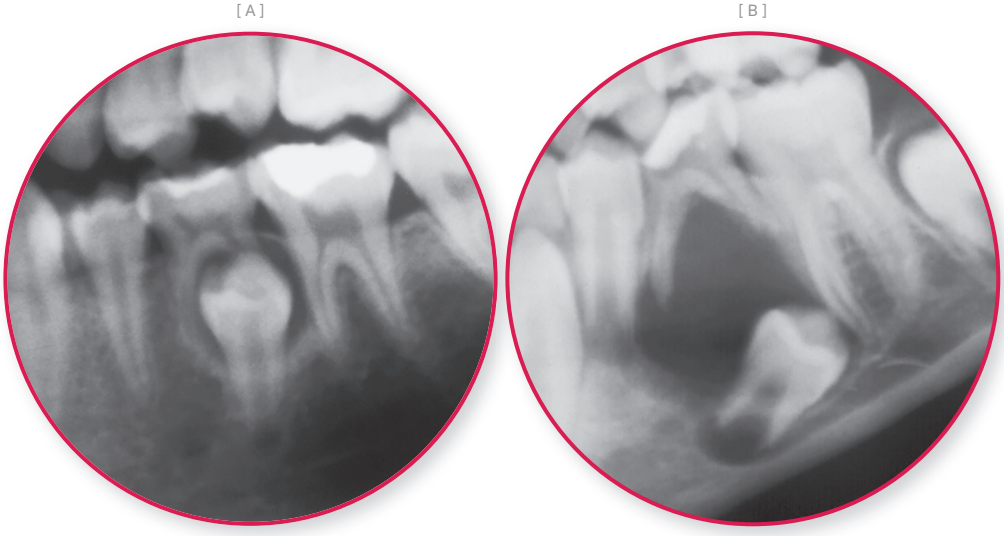


Figure 9: Follicular cysts inflammatory: incipient in (**A**) and well developed in (**B**), with displacement of the premolar of origin. The direct relationship with the deciduous tooth predecessor.

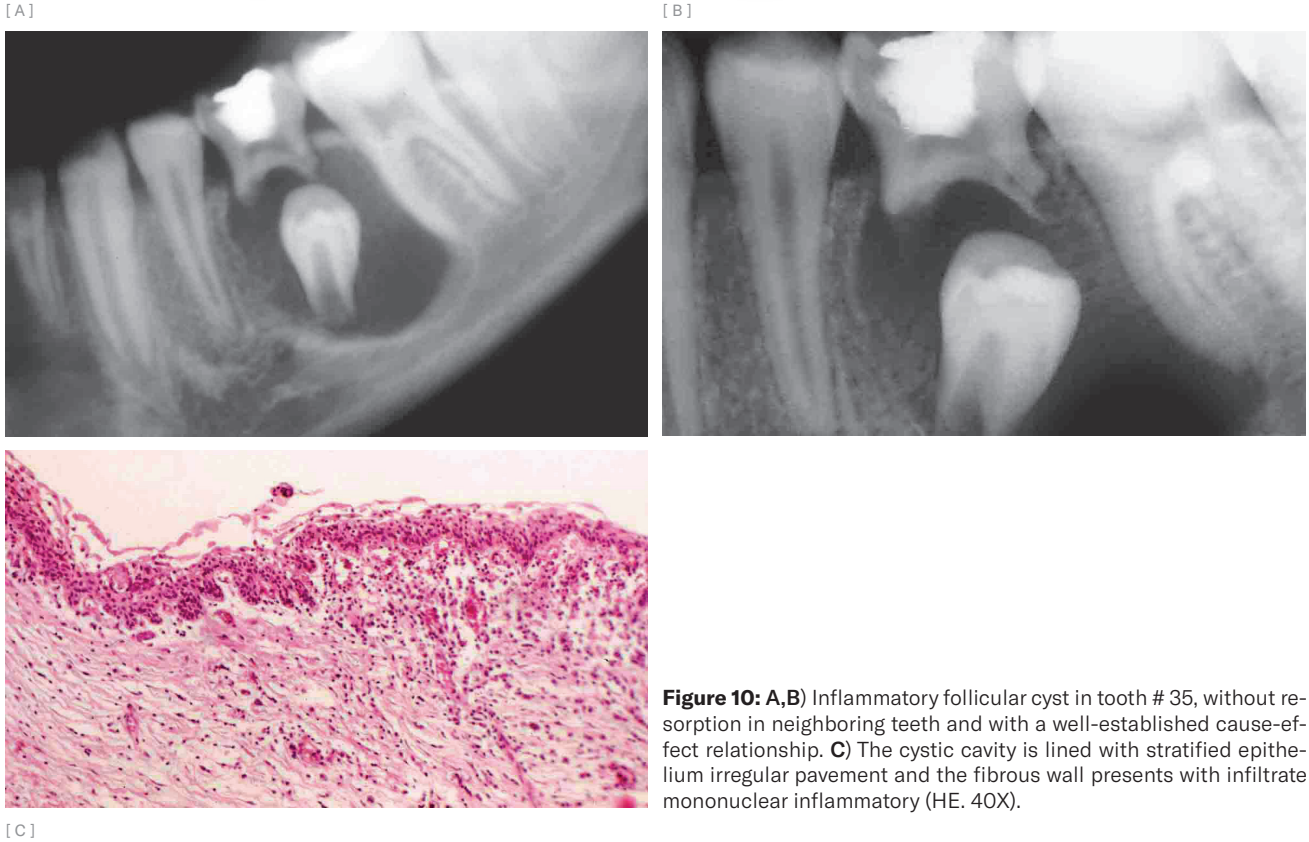


Figure 10: A,B) Inflammatory follicular cyst in tooth # 35, without resorption in neighboring teeth and with a well-established cause-effect relationship. **C**) The cystic cavity is lined with stratified epithelium irregular pavement and the fibrous wall presents with infiltrate mononuclear inflammatory (HE. 40X).

[A] [B]

2) Pericoronaritis (contamination, inflammation and pain) and parental cyst

Proximity to the buccal mucosa in the final phase of the eruption and proximity to the neighboring teeth may lead to contamination of pericoronal follicle tissues, promoting acute subclinical pericoronaritis, chronic pericoronaritis, and recurrent acute pericoronaritis outbreaks (Fig 11).

[C]

Figure 11: Conditions in which paradential cysts develop after several outbreaks of re-emergence of pericoronitis chronic. The pericoronary cap over the occlusal surface of the lower third molar creates distal niches for the formation of microbial biofilms and food debris, adding to the pressure of the region by the masticatory load of the antagonist tooth. There is a lack of space for the function normal appearance of lower third molars, with indication for extraction.

Pericoronaritis promotes an increase in follicular connective tissues by the inflammatory exudate and infiltrate established by the penetration of microorganisms, via the gingival sulcus of the neighboring tooth or by the small opening of any of its cusps in the oral environment (Figs 12, 13, 14 and 15).

In the acute phase of pericoronitis there will be a lot of pain, because inflammatory mediators such as prostaglandins and kinins accumulate and concentrate in follicular tissues acting intensely on neural threads. The relief comes with natural drainage to the mouth or via the neighboring gingival sulcus or by the cleaning and drainage provided by the provider on a temporary or permanent basis (Figs 12, 13, 14 and 15).

Each recurrent outbreak of worsening of untreated pericoronaritis by postponing definitive treatment increases the size of follicular tissue by accumulation of exudate and inflammatory infiltrate. Peripherally the bone tissue slowly and progressively reabsorbs.

It A small cystic cavity eventually forms between the epithelium of the follicle - now already disorganized and stratified pavement - which gradually increases on the freer side, such as the distal surface of the third molars (Figs 12, 13 and 14), or eventually the mesial surface (Fig 15). This cystic and inflammatory lesion has a slow and gradual growth, almost asymptomatic, being more common or almost exclusive of lower third molars, where the chronic pericoronarites that precede it occur in its formation mechanism.

Delaying the surgical or orthodontic treatment of unerupted teeth, especially the lower third molars, implies increasing the likelihood of pericoronitis and formation and development of paradental cyst in the region.

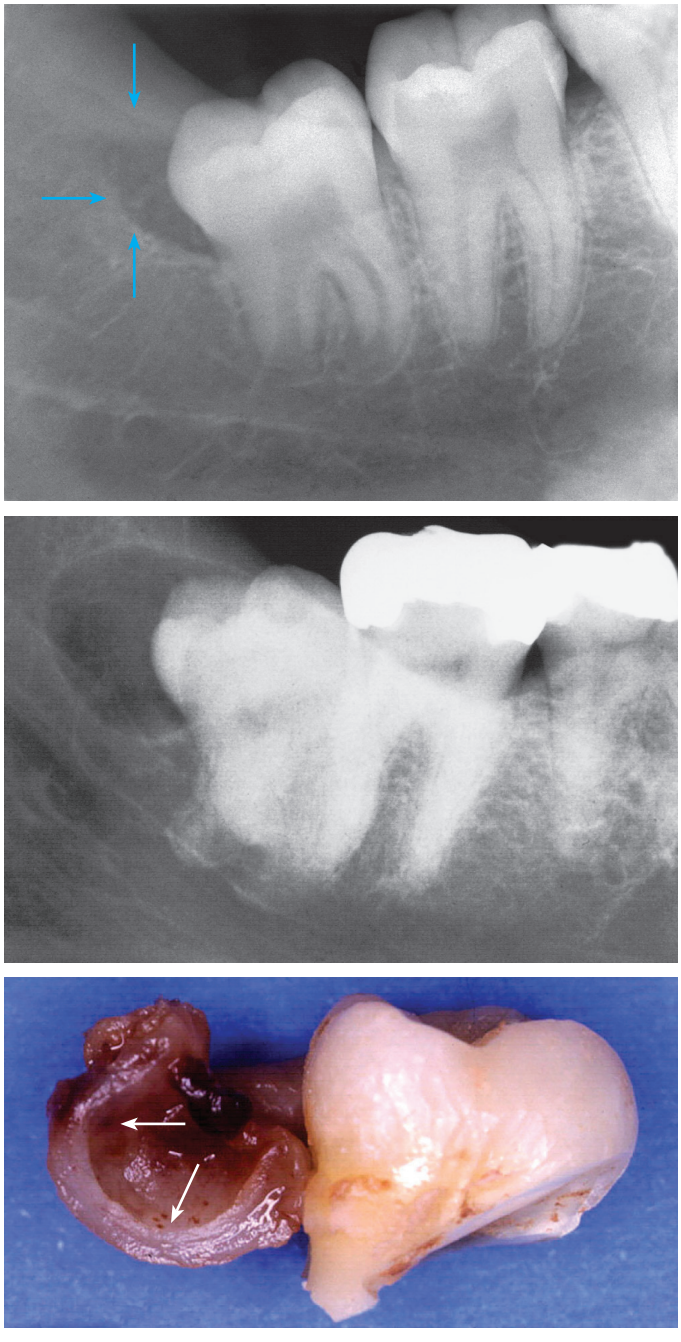


Figure 12: Parental cysts. In (**A**), still incipient (arrows); but in (**B**), it presented with a well-established cavity (arrows), as the paradential cyst demonstrates after extraction, in (**C**).

[A]

[B]

[C]

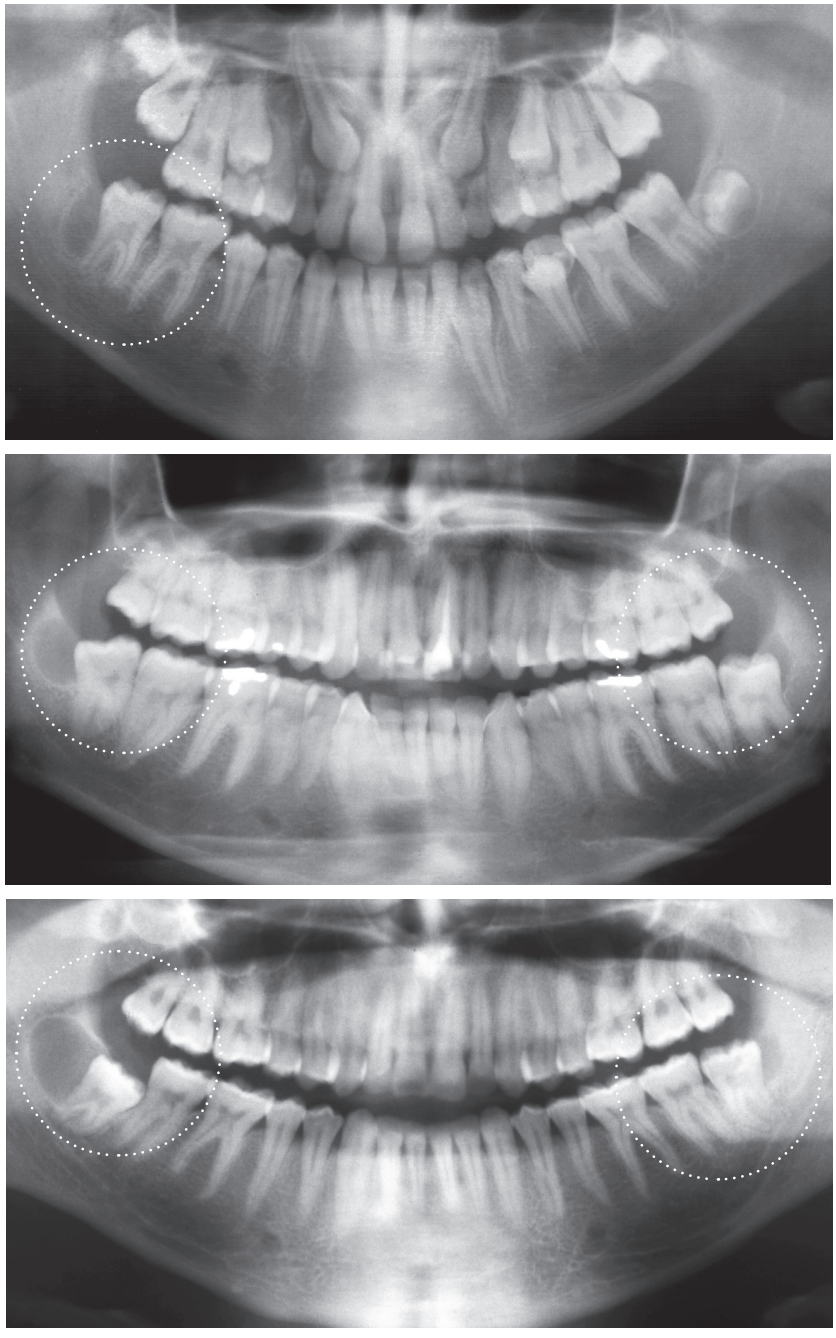


Figure 13: Parental cysts in various stages of development.

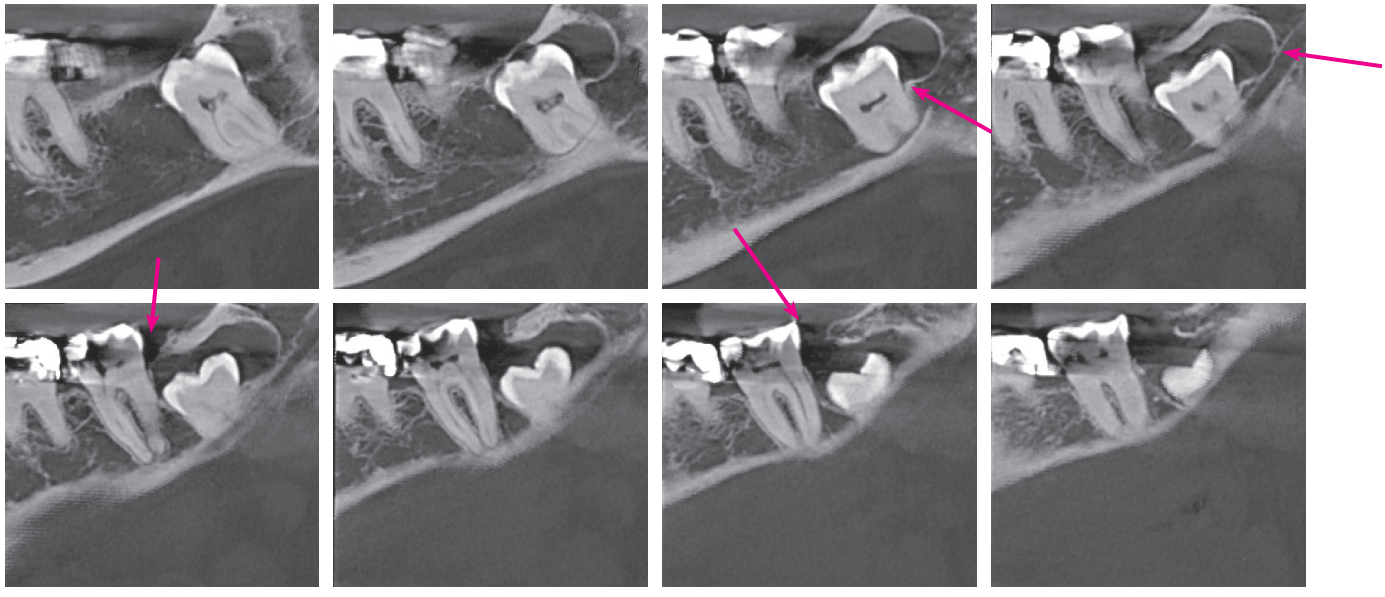
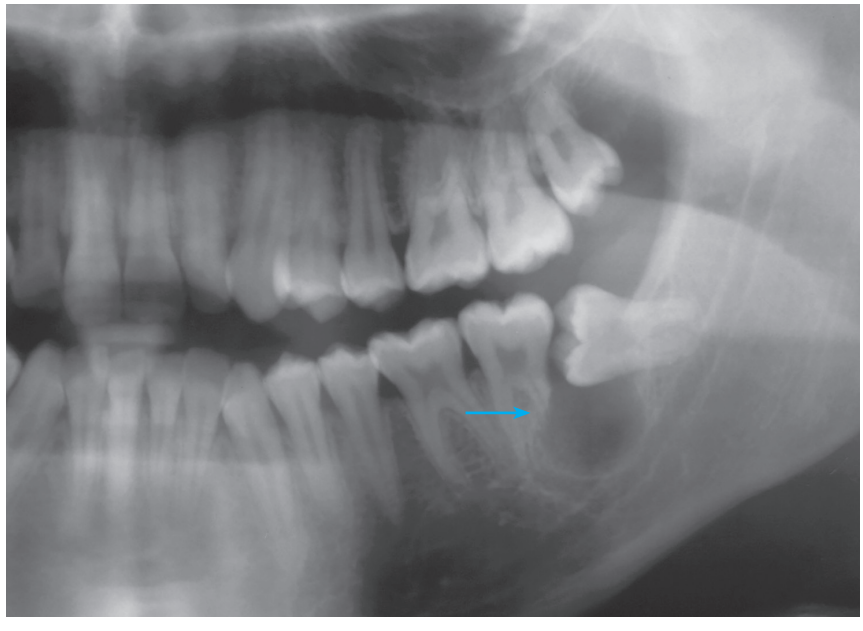


Figure 14 : Tomographic sections of a paradential cyst that reveal the entrance door of microorganisms and food through the distal face of the lower second molar (**E**, **F** and **G**) lower third molar only apparently isolated from the oral environment.

Figure 15 – According to the position of the third party mandibular molar, the paradential cyst can develop on your mesial face, despite its positioning is predominant on the distal face. Very eventually, the cyst model induces inflammatory resorption in the associated lower second molars, as in this case (arrow).



3) Resorption of neighboring tooth

The follicle is rich in mediators that stimulate bone resorption locally, especially EGF (Figs 1, 2 and 4). When jaw growth vectors and eruptive forces promote proximity of the crown of an unerupted tooth to the root of another already erupted tooth, periodontal vessels are compressed and cementoblasts die that cover the surface and protect it from resorption. In this way, we will have exposed root surface and local increase of resorption mediators that stimulate the organization and function of osteoro-modeling units or BMUs (Figs 16, 17, 18, 19 and 20).

Imaginatively, an unerupted tooth that is very close to the root of another tooth and that has an active trajectory as a function of eruption and growth vectors is usually associated with tooth resorption (Figs 16, 17, 18, 19, and 20). This situation is very commonly observed in the canine region in relation to the maxillary lateral incisors and the third molars with the distal face of the lower second molar (Figs 16, 17, 18, 19 and 20).

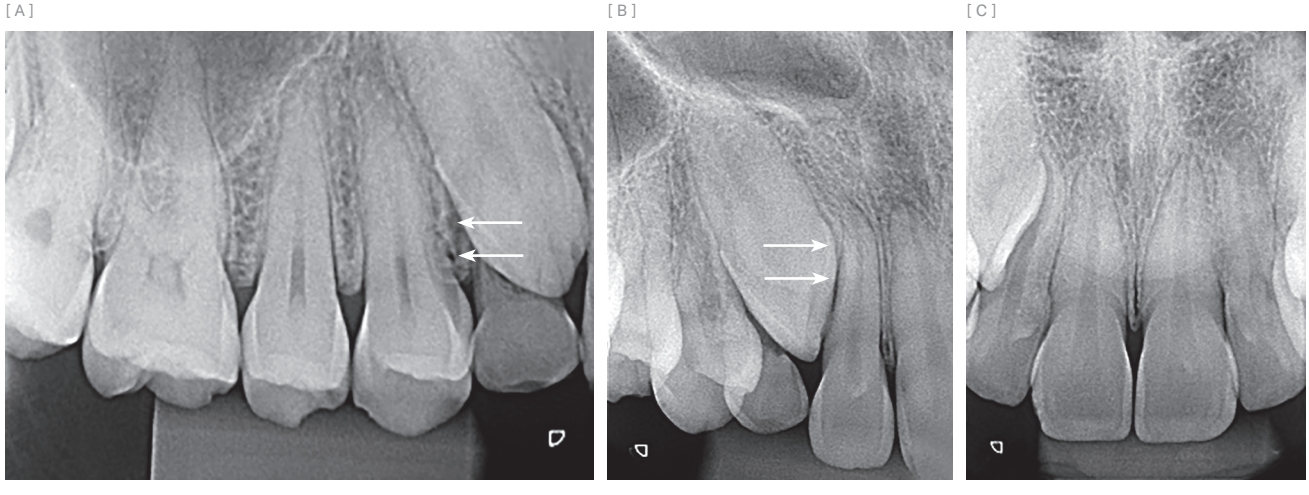


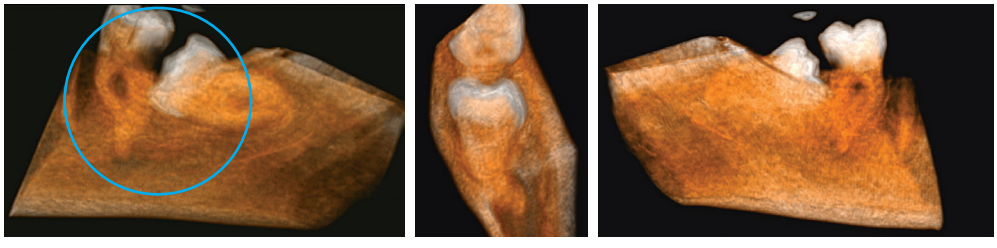
Figure 16: One of the most common consequences of persisting unbroken teeth in the jaws is root resorption in the neighboring teeth, present around 12% on the upper sides when the canines are not erupted, on periapical radiographs, and in 25% of the same cases, when the evaluation is made in tomographic sections. In the first premolars, this consequence also occurs frequently, simultaneously (arrows).

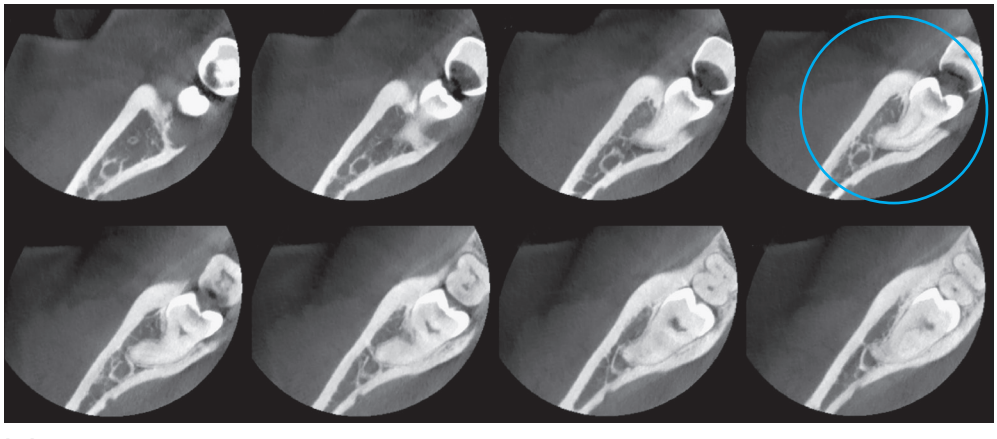
[A] [B]

Figure 17: The proximity of unerupted teeth to neighboring teeth will almost inevitably lead to resorption. If diagnosed early, the loss will be repaired with the displacement of the tooth or its extraction. If the diagnosis occurs late, the loss it can be unrecoverable.

Figure 18: One of tooth resorption in neighboring and associated teeth with unbroken teeth is external cervical resorption, that starts at the junction amelocementary, as revealed 3D reconstruction by lingual, occlusal and vestibular (**A, B** and **C**) and the cuts CT scans (**D**).

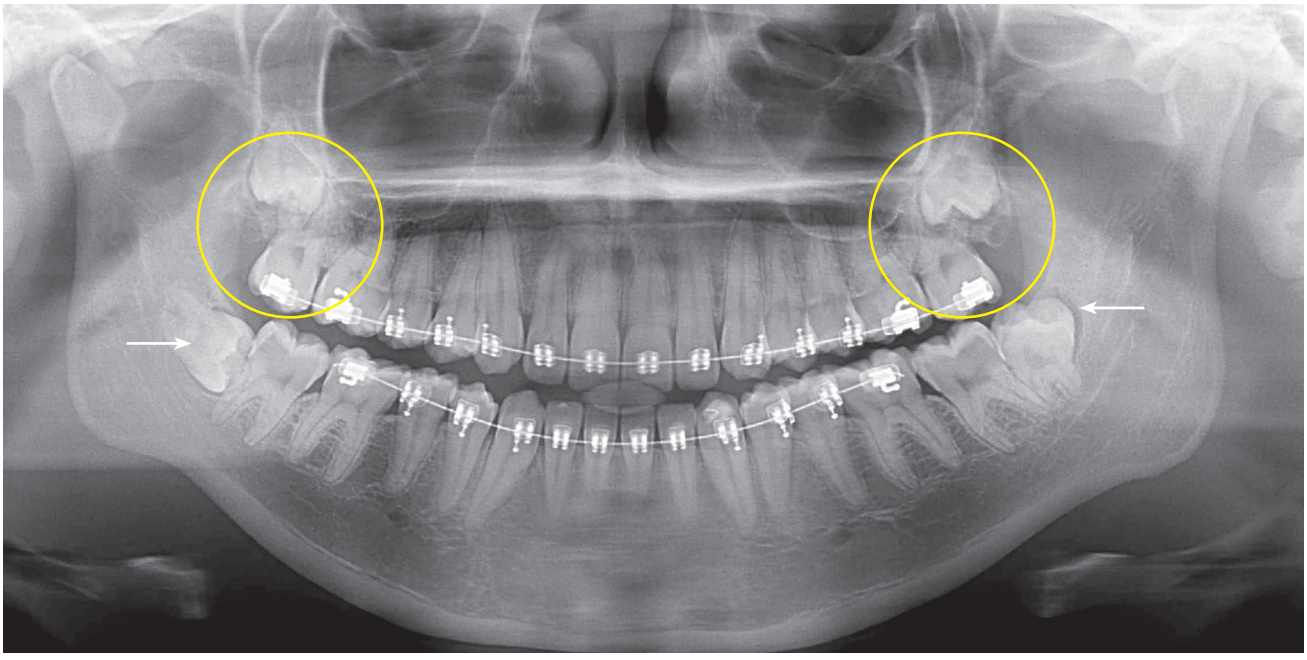
[A] [B] [C]



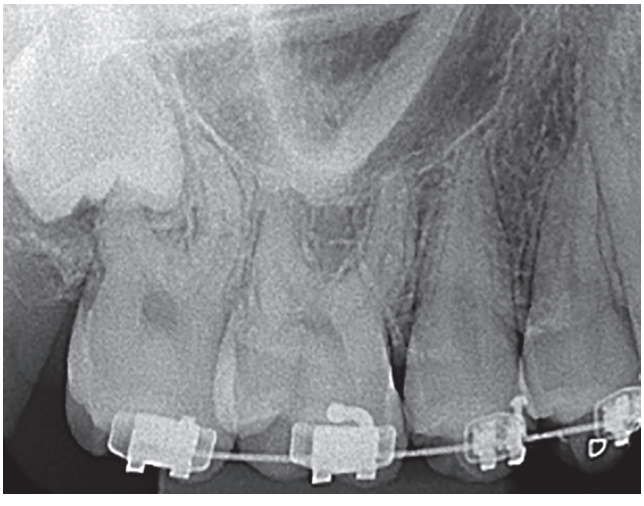


[D]

[A]



[B]



[C]

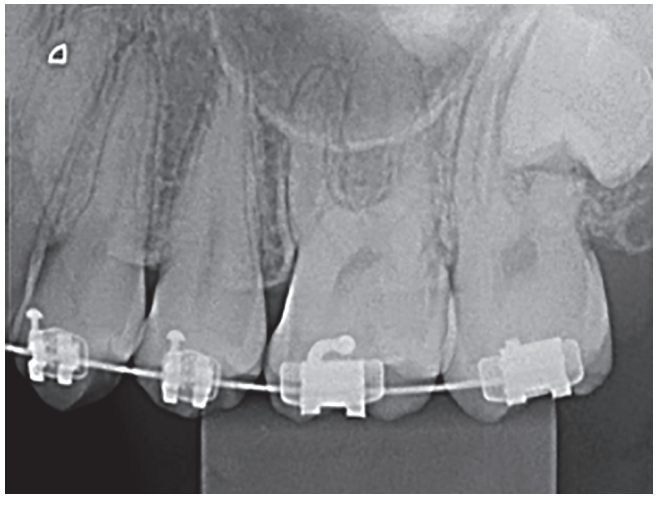


Figure 19: Advanced root resorption in maxillary second molars, due to proximity to maxillary third molars erupted, as it stands out in the periapicals. It is also noted that there is a high risk of resorption (arrows) in neighboring teeth and a paradential cyst in the lower third molars.

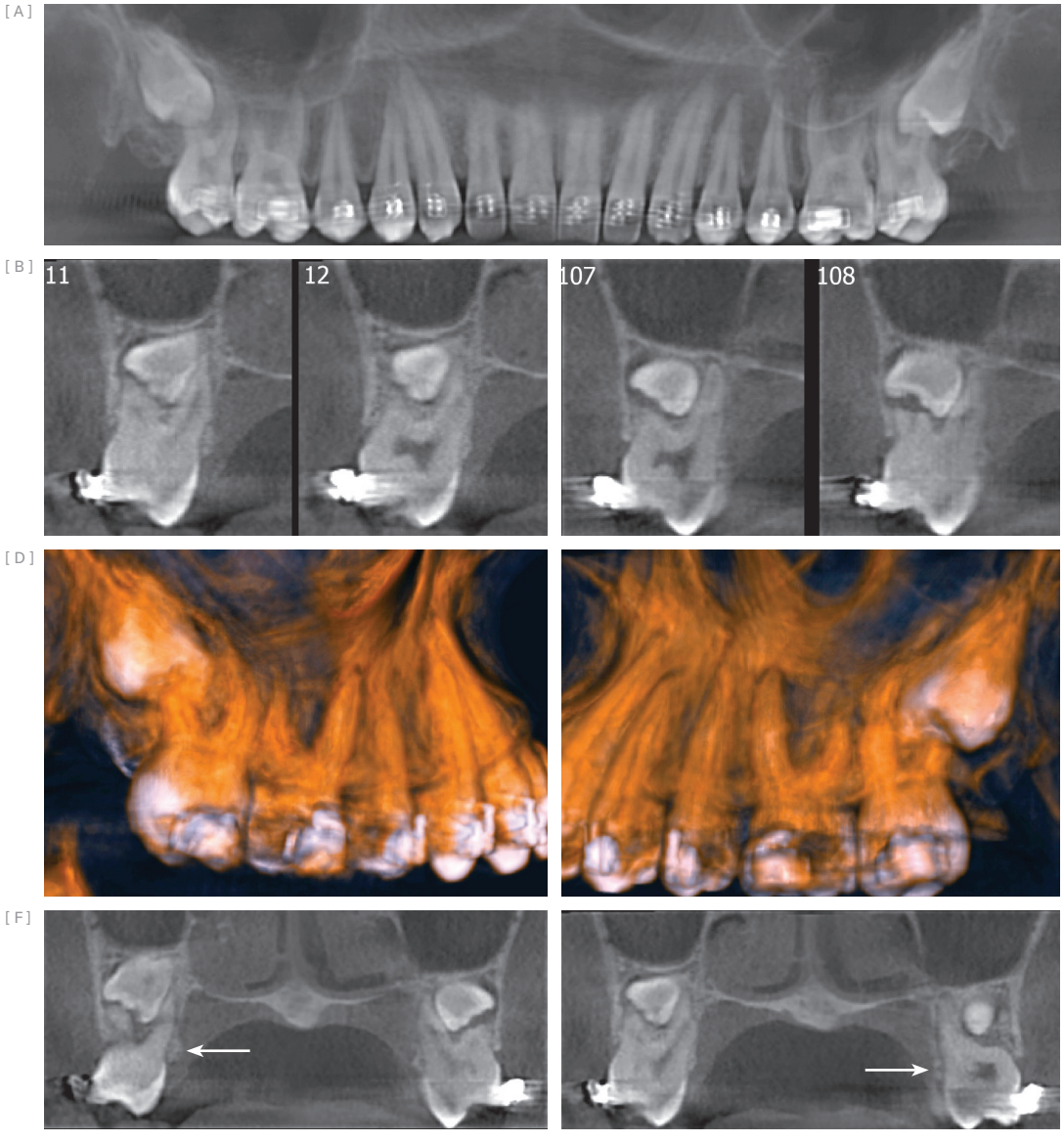


Figure 20: Tomographic sections and reconstructions of the same case as in Figure 19. The root resorption caused by upper third molars promoted significant loss in the roots adjacent upper molars

For third molars, the removal of the unerupted tooth promotes the regression of the process and the covering of the reabsorbed area by new cementoblasts with deposition of a new layer of cementoblast and reinsertion of the periodontal fibers. This often occurs with the lower third and second molars. For this to occur the environment must not be contaminated by bacteria.

With regard to upper canines, with orthodontic and / or orthopedic appliances, by redirecting the eruptive trajectory of the unerupted upper canine and the growth vectors involved, root resorption will cease in neighboring teeth and surface repair will be performed with new cementoblasts and cementum. This situation is commonly observed in the canines in relation to the maxillary lateral incisors.[5,6]

One approach that must necessarily be adopted in some of these cases is to increase the space between the teeth in the dental arch so that the unerupted tooth lodges in the area with the pericoronal follicle and its crown.

The opening of the space eliminates the compression of the periodontal ligament of neighboring teeth and cementoblasts and cementum again cover the root of these teeth. In this way, the pericoronal follicle of the unerupted tooth is thus further away from the root surface, and its mediators no longer act as dental resorption stimulators, but only stimulate pericoronal bone resorption so that the eruption occurs in its desired trajectory.

FINAL CONSIDERATIONS

1. Unerupted teeth are very common situations. Asymptomatic and seemingly hidden, they are not highly valued by patients unless manifestations of their "non-treatment" occur!
2. Removing unbroken teeth requires skills from much training and clinical experience. Surgical removal requires systemic evaluation and drug administration, that is, the patient must prepare in advance for surgery, as well as set aside time for postoperative recovery.
3. In other words, indicating the removal of unbroken teeth requires clarifying and convincing the patient about their possible consequences: it usually takes time, effort and a lot of patience from the practitioner. The fact that it requires surgery and is almost always asymptomatic and not apparent ends up creating a situation where postponement almost always prevails and is comfortable for all agents of the described situation.