



Received:  
20 February 2014  
Accepted:  
16 May 2014  
Available online  
10 July 2014



CrossMark

## Periodontal management in orthognathic surgery: Early screening of periodontal risk and its current management for the optimization of orthodontic and surgical treatments

La prise en charge parodontale en chirurgie orthognathique : le dépistage précoce du risque parodontal et sa prise en charge actuelle pour une optimisation des traitements orthodontico-chirurgicaux

B. Straub, P. Bouletreau\*, P. Breton

*Service de stomatologie de chirurgie maxillo-faciale et chirurgie plastique de la face, centre hospitalier Lyon-Sud, 165, chemin du Grand-Revoyet, 69495 Pierre-Bénite cedex, France*

Available online at

**ScienceDirect**

[www.sciencedirect.com](http://www.sciencedirect.com)

### Summary

Orthodontic preparation for orthognathic surgery requires correcting mal-occlusions and coordination of arcades. In addition to improving the aesthetics, these treatments can ensure the achievement and sustainability of prosthetics and/or implants. Nevertheless, periodontal structures are easily damaged. Orthodontic displacement can only be applied in the absence of inflammation or weakened periodontal structure. An early detection of periodontal risk should be achievable by prescribers of a surgical-orthodontic treatment. Simplified periodontal examination, with easily detectable warning signs, will help to identify the periodontal risk. Although periodontal treatment follows current “non invasive” trend, some procedures remain necessary to prevent and/or remedy periodontal defects or diseases, such as mineral periodontal reinforcement corticotomy. It is essential that the patient meets all the practitioners to plan and assess the extent of the constraints necessary to optimize results, before starting orthodontic treatment combined with orthognathic surgery. Any periodontal complication

### Résumé

La préparation orthodontique en vue d'une chirurgie orthognathique nécessite la correction des malpositions dentaires et la coordination des arcades. En plus de l'amélioration de l'esthétique, ces traitements permettent d'assurer la réalisation et la pérennité de travaux prothétiques et/ou implantaires. Néanmoins, les structures du parodonte sont facilement dommageables. Les mouvements d'orthodontie qui la sollicitent doivent être appliqués en l'absence d'inflammation ou de faiblesse d'attache. Le dépistage précoce du risque parodontal doit être réalisable par tous les intervenants dans un traitement chirurgico-orthodontique. L'examen parodontal simplifié, grâce à des « clignotants » faciles à reconnaître, permettra de cibler les « parodontes à risque ». Bien que les traitements parodontaux suivent la mouvance actuelle « non invasive », certains gestes restent indispensables pour prévenir et/ou remédier aux pathologies parodontales comme le renfort parodontal minéralisé basé sur les principes de la corticotomie. Avant de débiter un traitement d'orthodontie associé à une chirurgie orthognathique, il est primordial que le patient rencontre tous les « acteurs »

\* Corresponding author.

e-mail: [pierre.bouletreau@chu-lyon.fr](mailto:pierre.bouletreau@chu-lyon.fr) (P. Bouletreau).

(even minor) will be considered as a failure, regardless of good aesthetic and functional results.

© 2014 Elsevier Masson SAS. All rights reserved.

**Keywords:** Periodontium, Orthodontics, Orthognathic surgery

“Orthognathic surgery is a teamwork! The implementation of an orthodontic-surgical protocol may require the intervention of many practitioners, and their coordination often determines the quality of the final result” [1]. Orthodontic treatments are no longer considered as likely to worsen or induce periodontal lesions; likewise, orthognathic procedures are no longer restricted to treatment of major dysmorphism. Indeed, many authors have demonstrated that dental alignment facilitates plaque control and prevents the aggravation of a periodontal disease. Likewise, coordination of arcades with orthognathic surgery decreases displacements and duration of orthodontic treatment. The authors of a retrospective study demonstrated that some major mal-occlusions could induce and/or worsen periodontal diseases: corticotomy allows obtaining 2 to 4 times faster results for the active phases of treatment, and a great stability of results by thickening of the cortical bone [2]. Whatever the type of treatment, orthodontic treatments can only be performed on healthy or treated, thick or reinforced periodontium.

The periodontal pre-orthodontic treatment diagnosis is a mandatory clinical step. Two types of periodontal diseases may be diagnosed: inflammatory diseases of bacterial origin and tissue defects (osseous or mucous). The initial consultation will determine the whole treatment: the active participation of the patient is essential for treatment success in periodontology.

The aim of our article was to determine a periodontal approach for orthodontic-surgical treatment in a rational, simplified, but global manner. We will first consider the periodontal examination and the new therapeutics, and then define the management according to the age of patients with different diseases, motivations, and expectations.

## The initial consultation

This is the “meeting” between 2 strangers who will have to work together on a more or less complex journey for a various length of time. The global and local history must be taken to screen for aggravating factors; but it is also necessary to dedicate time to understand the patient’s motivation for a treatment lasting more than 2 years and to make sure all the information is given.

intervenants, afin de planifier et d’apprécier l’ampleur des contraintes nécessaires pour optimiser les résultats. Toute complication parodontale (même minime) sera vécue comme un échec, indépendamment d’une occlusion fonctionnelle et d’une harmonie faciale.

© 2014 Elsevier Masson SAS. Tous droits réservés.

**Mots clés :** Parodontite, Orthodontie, Chirurgie orthognathique

## Simplified periodontal examination

The periodontium is usually divided in 2 interdependent parts: the superficial periodontium and the deep periodontium (*table 1*). Any deterioration of one part will impact the other [2]. The periodontium includes all the tissues supporting the teeth: the alveolar bone, the periodontal or dentoalveolar ligament, the attached gums which are solidly anchored on the maxilla and on teeth, the cementum that is the external layer of the tooth roots. The tissue characteristics are determined genetically but may be influenced by other factors such as the size and position of teeth, or by physiological factors such as growth or aging. The periodontium is a very important factor in orthodontics because it must be healthy and resistant to allow multiple dental displacements in the course of treatment. Its structures are fragile and easily damaged if inadequate forces are used. A bad oral hygiene (difficulty to eliminate plaque because of orthodontic material) may induce inflammation that can destroy its components and make dental displacements iatrogenic [3].

**Table 1**

**Simplified periodontal examination. If there is 1 yes in the answers: pretreatment periodontal consultation is mandatory.**

	Yes	No
<i>Global history</i>		
Tobacco		
Diabetes		
<i>Intra-oral examination</i>		
Plaque, tartar		
Gingival bleeding		
Edema, suppuration		
Gingival necrosis		
Modification buds		
<i>Dental mobility</i>		
> 0.5 mm		
<i>Alveolysis</i>		
Horizontal vertical		
<i>Gingival hypertrophy</i>		
<i>Thin periodontium</i>		
<i>Iatrogenic bridges</i>		
<i>Gingival recession</i>		

Download English Version:

<https://daneshyari.com/en/article/3175107>

Download Persian Version:

<https://daneshyari.com/article/3175107>

[Daneshyari.com](https://daneshyari.com)