

OCCLUSION

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Disease of retrodiscal tissue (provisional name)
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(OCCLUSION)

Case of occlusal equilibration

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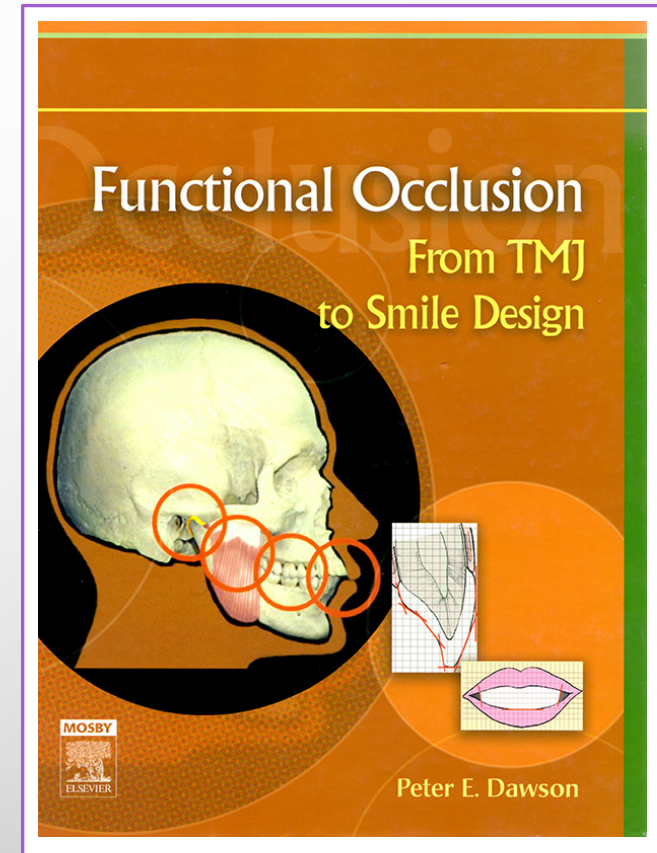
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References



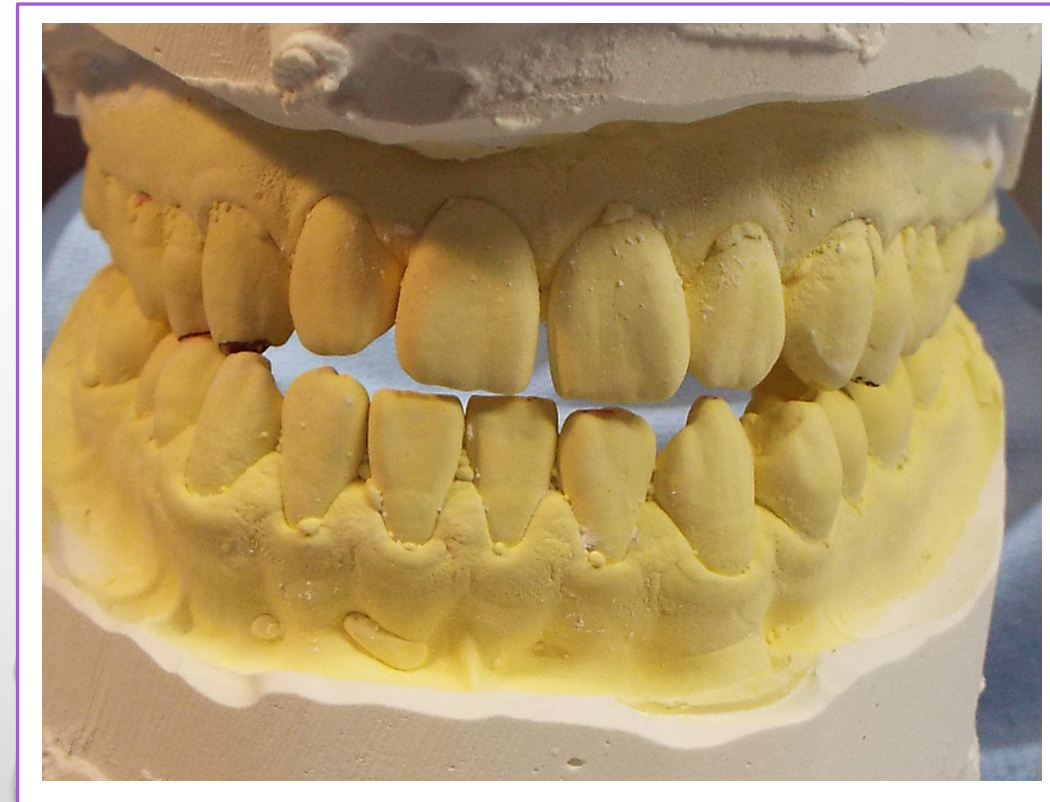
(CASE OF OCCLUSAL EQUILIBRATION)



Case 1: Malocclusion due to jaw fracture

The patient is a 35-year-old male. His chief complaint is occlusal instability and mastication disorder. He requested a mouthpiece for the purpose of easing his bite.

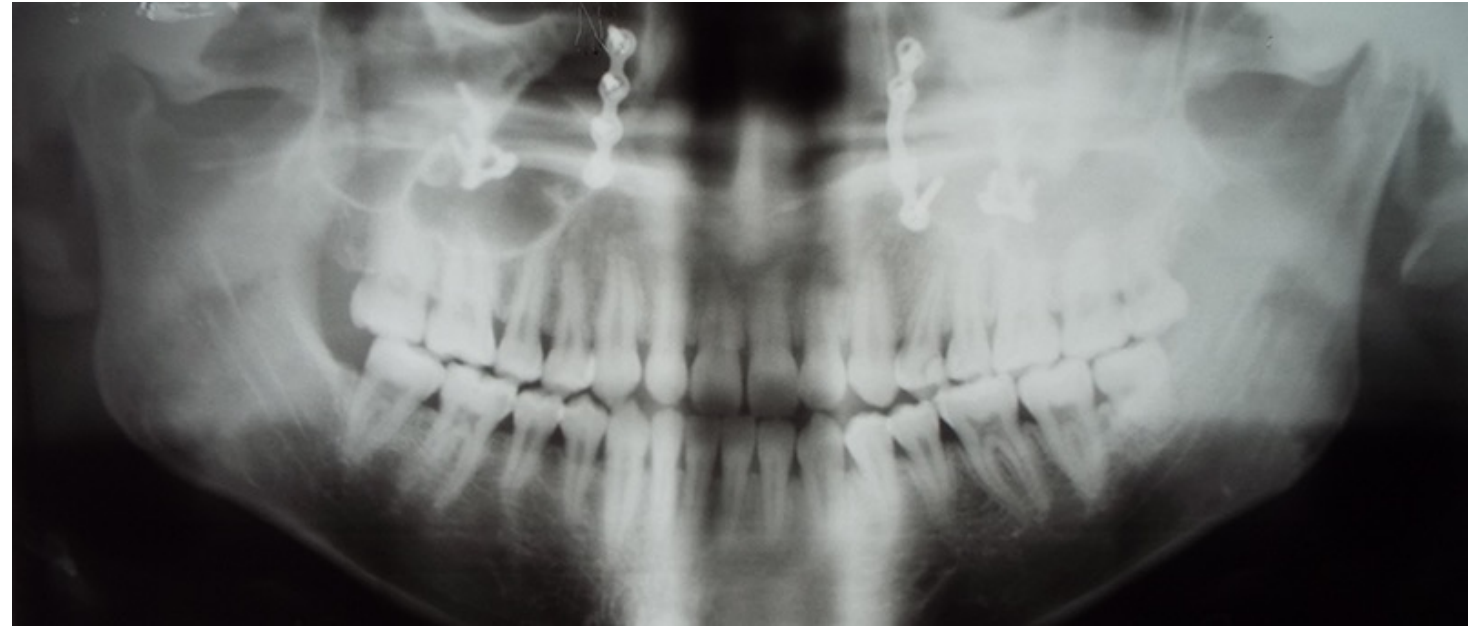
On the right is a study cast of the initial examination. As shown in the right study cast, due to a fracture of the right condylar process of the mandible, the midline of the mandible is displaced to the right. In the central position, left and right #7 and lower right #3 are in contact, and the other teeth are not in occlusal contact.



(CASE OF OCCLUSAL EQUILIBRATION)

Case 1: Malocclusion due to jaw fracture

Medical History and X-ray diagnosis



Patient fell and struck his mandible at the age of 9. He had pain for a month, but left it alone. He collided with a bus and fractured his maxilla when he was riding his bicycle, at the age of 17. He underwent surgery at the Department of Oral Surgery.

The upper right photo is a panoramic radiograph taken at the initial examination. There is a difference in the length of the left and right ramus of mandible. The cause is believed to be a fracture at the age of 9.



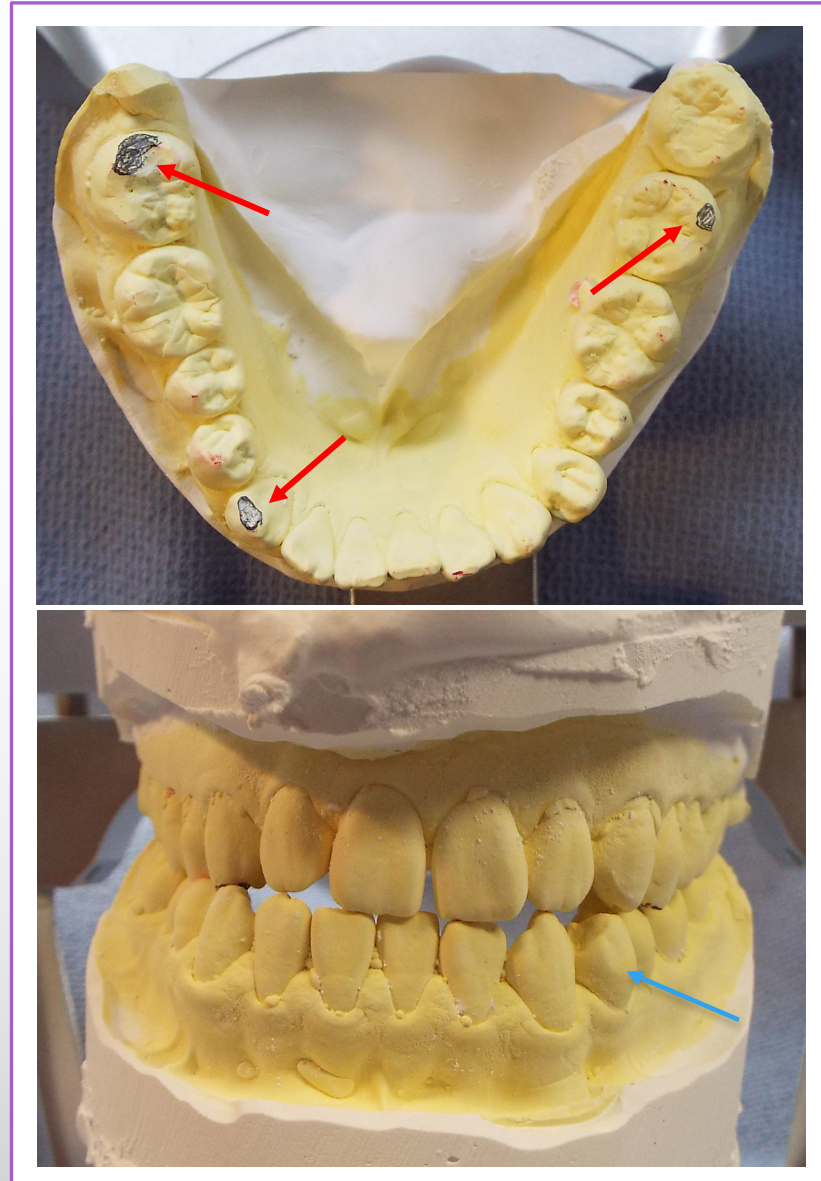
(CASE OF OCCLUSAL EQUILIBRATION)

Case 1: Malocclusion due to jaw fracture

Treatment plan

Trial occlusal equilibration was performed on the study cast. As a result, as shown in the upper right photo, it is clear that by grinding the blackened areas (red arrows) of left and right #7 and lower right #3, stable occlusal contact can be obtained for all teeth except for lower left #4 (blue arrow) in the centric relation, as shown in the lower right photo.

Since the occlusal condition set as this treatment goal is not an ideal occlusion, orthodontic treatment or surgical procedures were considered. However, even if the patient achieved a near-ideal occlusion, the benefits he would gain from the occlusion would not be worth the effort and expense he would have to incur.



(CASE OF OCCLUSAL EQUILIBRATION)

Case 1: Malocclusion due to jaw fracture

Treatment results

As shown in the right study cast, in the centric relation, both right and left molars achieved a stable intercuspatal position. Discomfort was resolved and masticatory ability improved. The occlusal disease was completely cured. Below is a postoperative panoramic radiograph.



(CASE OF OCCLUSAL EQUILIBRATION)

Case 2: Occlusal interference of a nonfunctional cusp

The patient is a 68-year-old male dentist. His chief complaint was severe cold-warm pain in the right lower seventh and pain during occlusion. There were no abnormal findings on the upper right initial radiograph. At the patient's request, we planned a treatment with pulp extraction, root canal filling, and crown prosthesis. When the amalgam was removed, a crack was found in the crown of the tooth in the proximal and centrifugal direction extending into the pulp, and the crack had reached the pulpal floor. The pulp was in a state of chronic inflammation. The lower right radiograph shows a temporary crown set after root canal filling.



(CASE OF OCCLUSAL EQUILIBRATION)



Case 2: Occlusal interference of a nonfunctional cusp

Causes and Treatment

During right lateral movement of the mandible, occlusal interference was observed on the lingual occlusal cusp of the right lower 7th mandible. The lingual cusps of mandibular molars are non-functional cusps and usually do not contact the opposing teeth. When the mandible was moved laterally, the lingual cusps of the mandibular molars were in contact with each other, causing bruxism at night. Due to repeated strong horizontal occlusal pressure on the lingual cusp of the right lower seventh caused by nighttime bruxism, a crack developed in the tooth.

As shown in the upper right photo, the occlusal interference at #7 was resolved. Subsequently, similarly, occlusal interference occurred on the medial slope of the lingual cusp of #6 on the lower right. If left untreated, this condition will lead to crown fracture or periodontal disease of the lower right #6 as well as #7. Therefore, the lingual cusp of No. 6 in the lower right photo was grinded. As a result, the occlusal guidance of the canine teeth became smooth, and the discomfort and bruxism were eliminated.



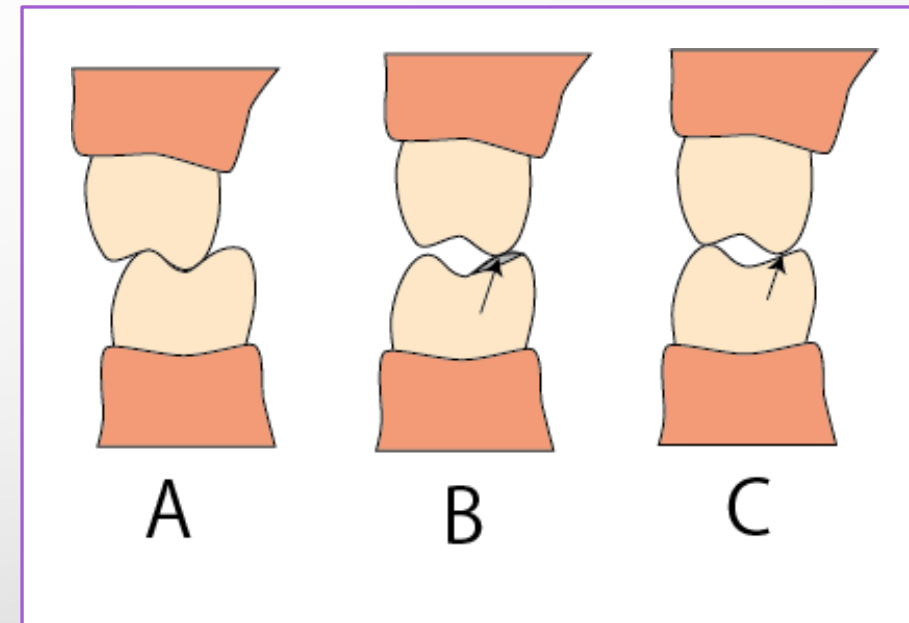
(CASE OF OCCLUSAL EQUILIBRATION)

Case 2: Occlusal interference of a nonfunctional cusp

Removal of occlusal interference

Illustration A shows the upper and lower molars in proper occlusion. Illustration B shows occlusal interference with the arrowed portion of the lingual cusp in the lateral position of mandible. Illustration C shows that the interference has been removed and normal lateral movement is now possible.

Occlusal equilibration is a less invasive medical procedure that removes some enamel from the occlusal surface if an occlusal interference area can be found. However, it is not always easy to detect the occlusal interferences. The occlusal equilibration is performed after determining the area and extent of the occlusal surface to be removed based on the examination, analysis, and diagnosis. There is no "just try it anyway" treatment method for occlusal equilibration.



(CASE OF OCCLUSAL EQUILIBRATION)

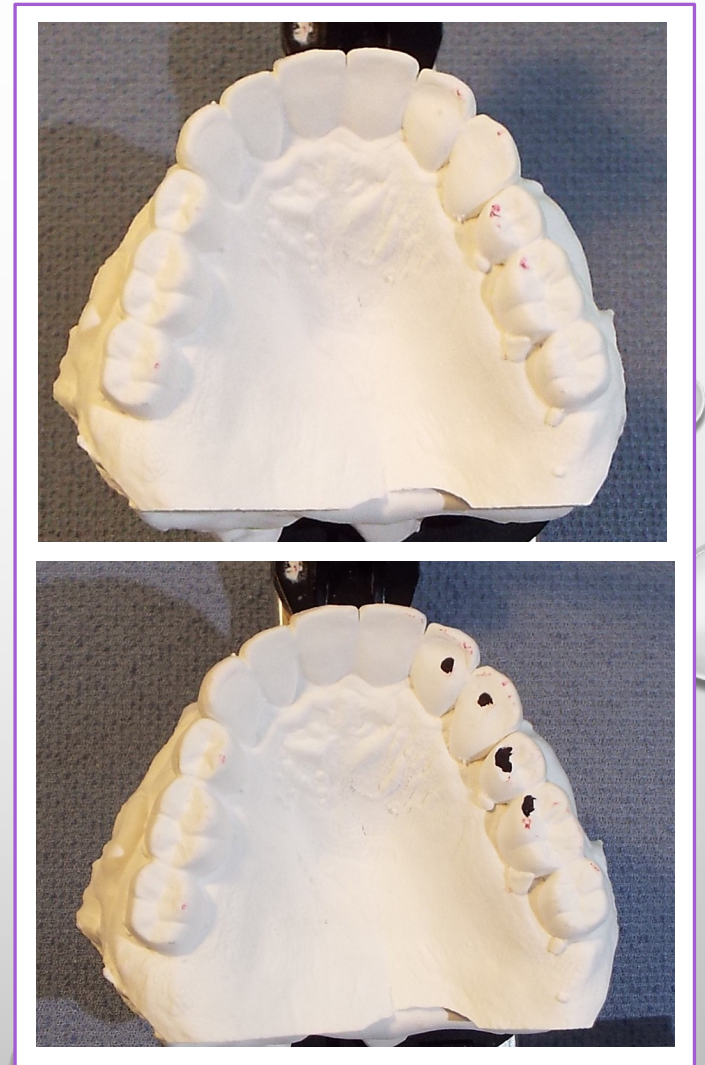
Case 3: Malocclusion resolved by simple occlusal equilibration

The patient is a 38-year-old male. His chief complaint is occlusal instability with psychiatric disorder.

The red marked area of the proximal marginal ridge of the upper left 4th in the upper right study cast is the occlusal interference area in the centric relation.

The black-colored areas on the occlusal surfaces of the upper left 2, 3, 4, and 6 in the lower right study cast are the areas where the occlusal interferences in the centric relation were grinded off by the trial occlusal equilibration.

In this case, the patient developed occlusal disease due to inadequate occlusal equilibration at the time of crown prosthesis placement on the upper left 2, 3, 4, and 6.



(CASE OF OCCLUSAL EQUILIBRATION)

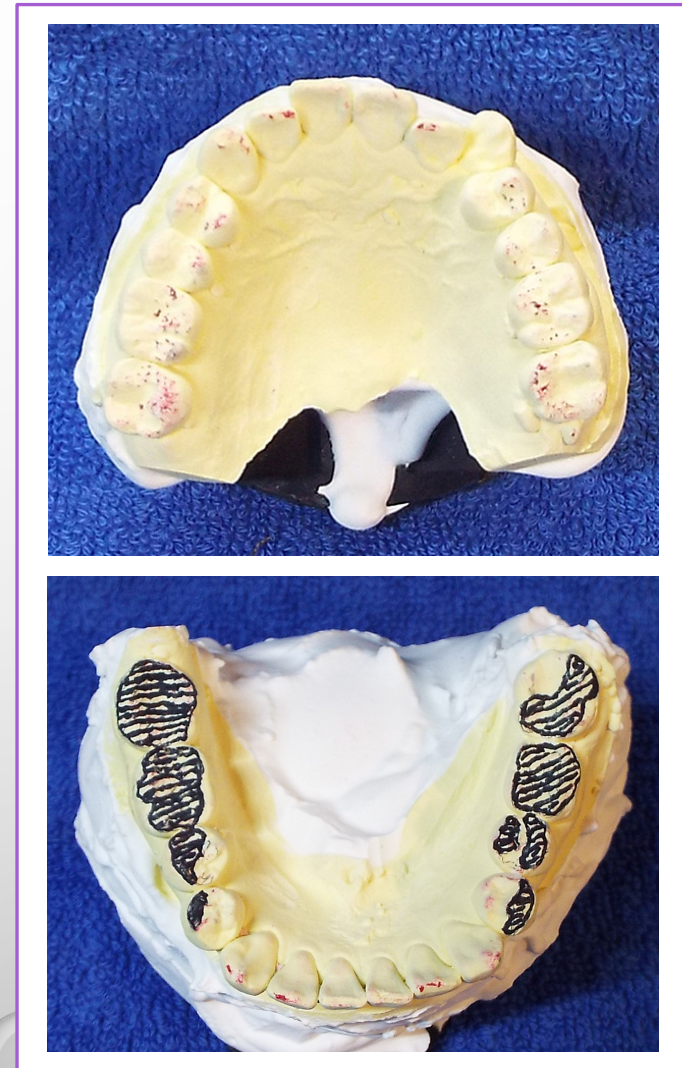


Case 4: Complex occlusal equilibration required

The patient is a 53-year-old female. Her chief complaint is severe TMJ pain.

The intercuspal position is displaced from the centric relation. In the centric relation, the anterior teeth are not in contact. The intercuspal position is unstable. The black shaded area on the occlusal surface of the lower right study cast is the grinding area of the trial occlusal equilibration performed for the purpose of stabilizing the occlusion. It is clear that these occlusal equilibrations are ultimately necessary to achieve a stable occlusion.

In some cases, treatment goals cannot be achieved by occlusal equilibration alone. In such cases, the patient may be eligible for so-called oral revascularization, which involves reconstructing the occlusion as a whole.



(OCCLUSION)

Case of occlusal equilibration

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If you have any questions or doubts, please leave them in the public comment section below.

The next topic will be ” Occlusal plane ”.