

Topics of Denture

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- B. Maxillary impression procedures
- C. Mandibular impression procedures
- D. Difficult case of complete denture
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- F. Design of direct retainers
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- H. Preparation of abutment tooth
- I. Design of major connector



Difficult case of complete denture

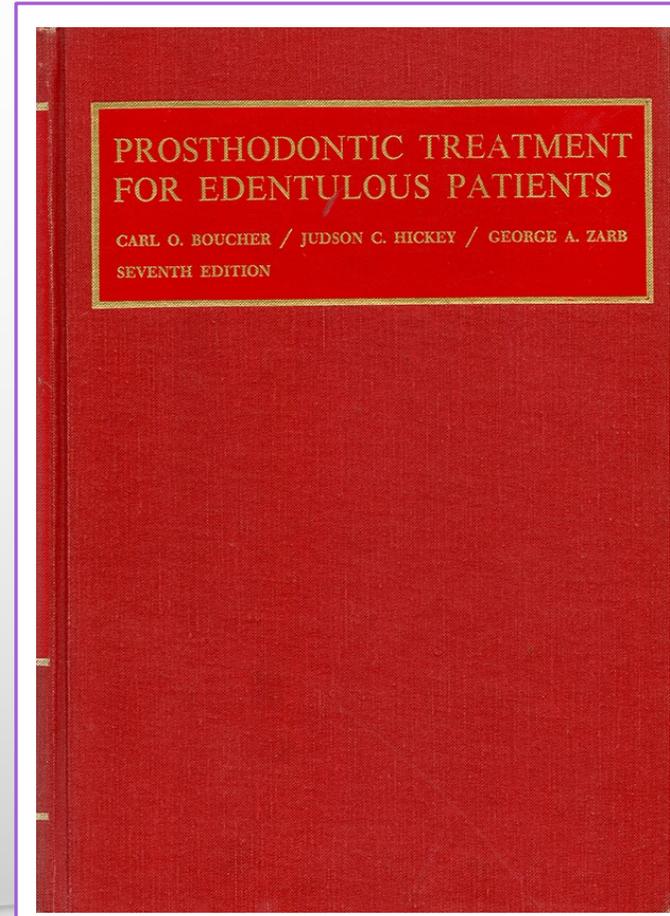
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Difficult case of complete denture

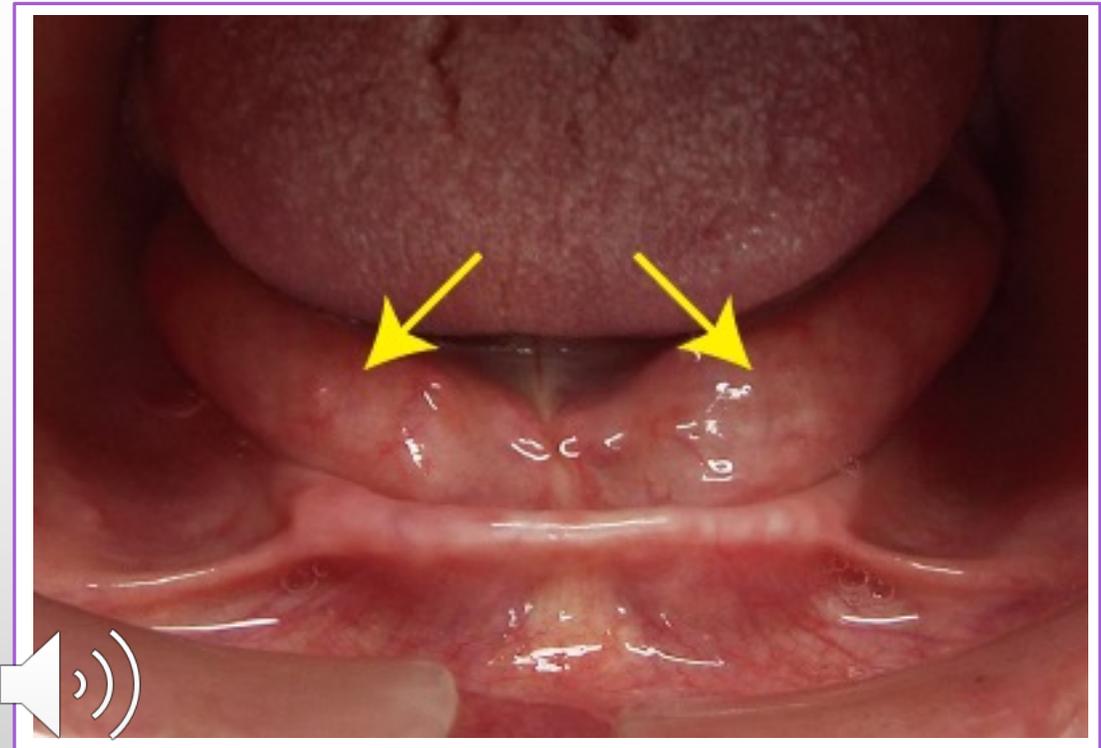
Case 1: Selective pressure impression on a raised floor of the mouth

Patient: 87 years old, woman

Chief complaint: Masticatory disorder due to an unstable complete denture

Condition: As shown by the yellow arrows in the photograph on the right, the floor of the mouth is raised at rest, and the alveololingual sulcus cannot be confirmed by visual examination.

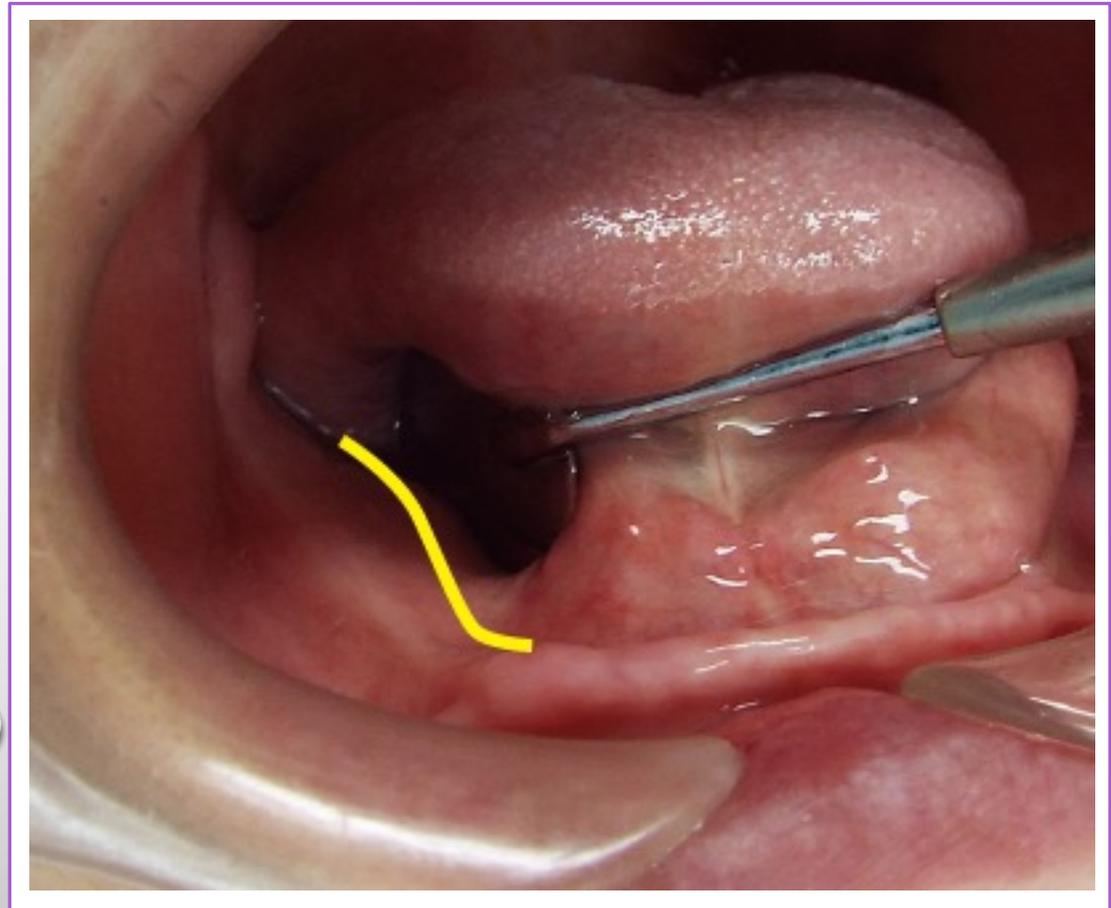
Treatment plan: Impressions will be taken of the mandibular lingual mucous membrane flaps by selectively pressurizing the floor of the mouth and mylohyoid muscle using an individual tray.



Difficult case of complete denture

Case 1: Selective pressure impression on a raised floor of the mouth

If the floor of the mouth is gently compressed using a mirror, as shown by the yellow line in the photo on the right, a portion of the S-shaped curve can be observed from the premylohyoid fossa to the retromylohyoid fossa. It is important to apply horizontal pressure rather than vertical pressure.

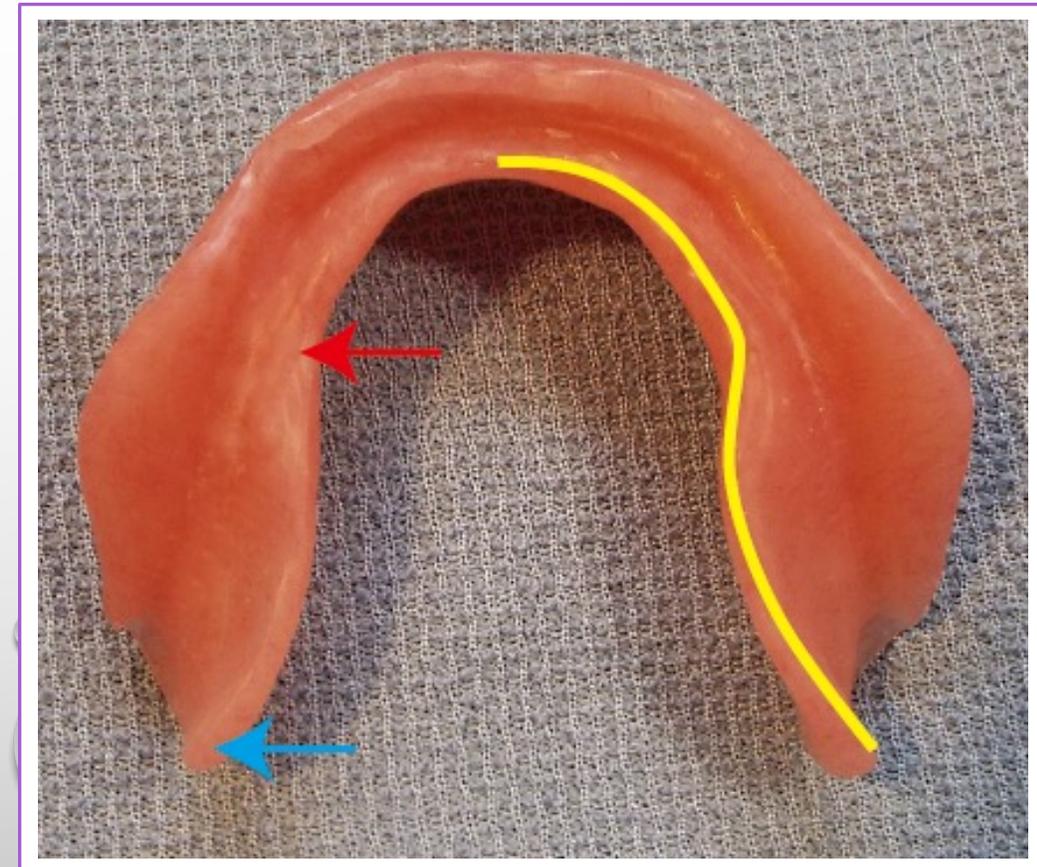


Difficult case of complete denture

Case 1: Selective pressure impression on a raised floor of the mouth

The red arrow in the photo on the right shows the premylohyoid eminence of the denture. The blue arrow shows the retromylohyoid eminence of the denture. The yellow line shows the S-shaped curve of the denture. With proper pressure and impression, these landmarks can be seen at the alveololingual sulcus of the denture.

Denture stability is good and masticatory function has improved.



Difficult case of complete denture

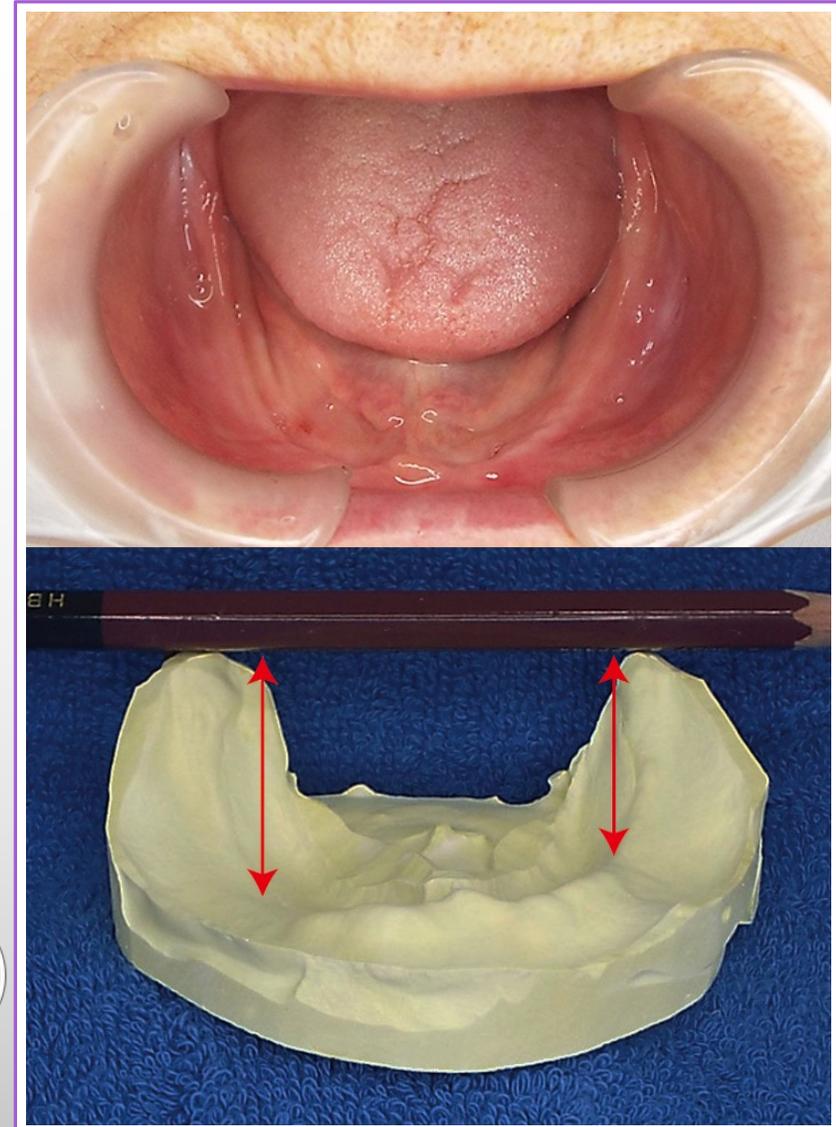
Case 2: Significant bone resorption in the mandibular alveolar ridge

Patient: 85 years old, woman

Chief complaint: Mucosal pain and mastication disorder due to non-fitting complete denture

Pathophysiology

During the initial examination, edema was observed in the mucosa of the mandibular alveolar ridge, which is located at the center of the mandible. Furthermore, extensive decubitus ulcers had formed on the mucosa of the mandibular alveolar ridge surrounding the left and right mandibular molars. As depicted in the lower right photograph, there was significant bone resorption, especially in the right mandibular alveolar ridge.



Difficult case of complete denture

Case 2: Significant bone resorption in the mandibular alveolar ridge

Cause of Denture Nonconformity

The patient had several complete dentures that were made at different times, and the patient was using separate dentures for the upper and lower jaws intermixed. As a result, the dentures were used in an unstable occlusal condition, resulting in progressive bone resorption in the jaw crest. In addition, a habit of lifting the denture by inserting the tongue between the denture and the jaw crest was observed in order to reduce pain in the mucosa of the jaw crest. The habit was also practiced during denture impression taking and soft resin curing. As a result, the impression of the alveololingual sulcus was under taken and some of the denture stabilizer was detached from the denture base.



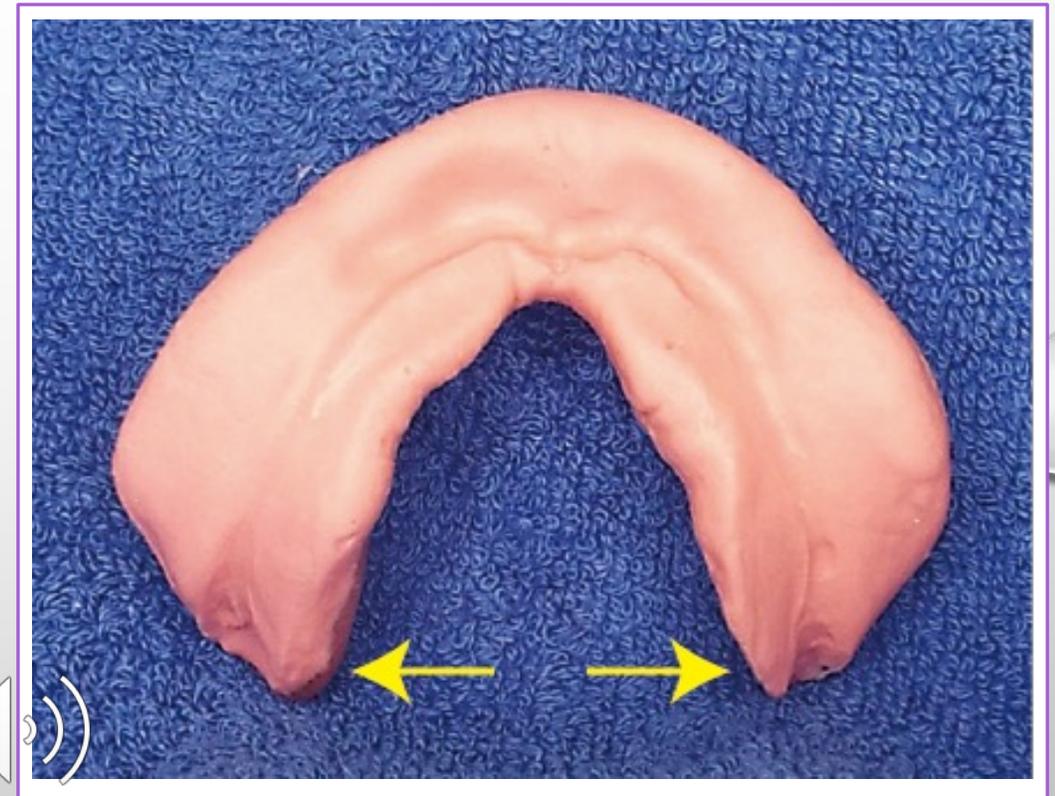
Difficult case of complete denture

Case 2: Significant bone resorption in the mandibular alveolar ridge

Treatment Plan

The patient was elderly, and we believed that she needed to have her masticatory function restored as soon as possible. Therefore, we adopted a plan to fabricate a therapeutic denture as soon as possible to restore masticatory function, and then use the therapeutic denture to treat the edema and bedsore ulcer of the mucosa of the alveolar ridge. After the edema and pressure ulcer were completely healed, we decided to complete the denture by final rebasing.

As indicated by the arrows in the photo on the right, the patient had a habit of lifting the denture with her tongue, which excluded the impression material from the retromylohyoid fossa, making it difficult to take an impression of the retromylohyoid fossa.



Difficult case of complete denture

Case 2: Significant bone resorption in the mandibular alveolar ridge

Modification of the treatment plan

Adjustment of the therapeutic denture mucosa surface was performed for an extended period of time. However, the decubitus ulceration of the mucosa of the alveolar ridge did not heal completely. Therefore, the treatment plan was changed to reline the mucosal surface of the therapeutic denture with soft resin in order to heal the pressure ulcer on the mucosa of the alveolar ridge.

For the habit of inserting the tongue under the floor, we took the time to train the patient to move the tongue forward when fitting the individual tray to the alveolar ridge. As a result, impressions of the mucous membrane flipping area of the mandibular denture could be taken appropriately.



Difficult case of complete denture

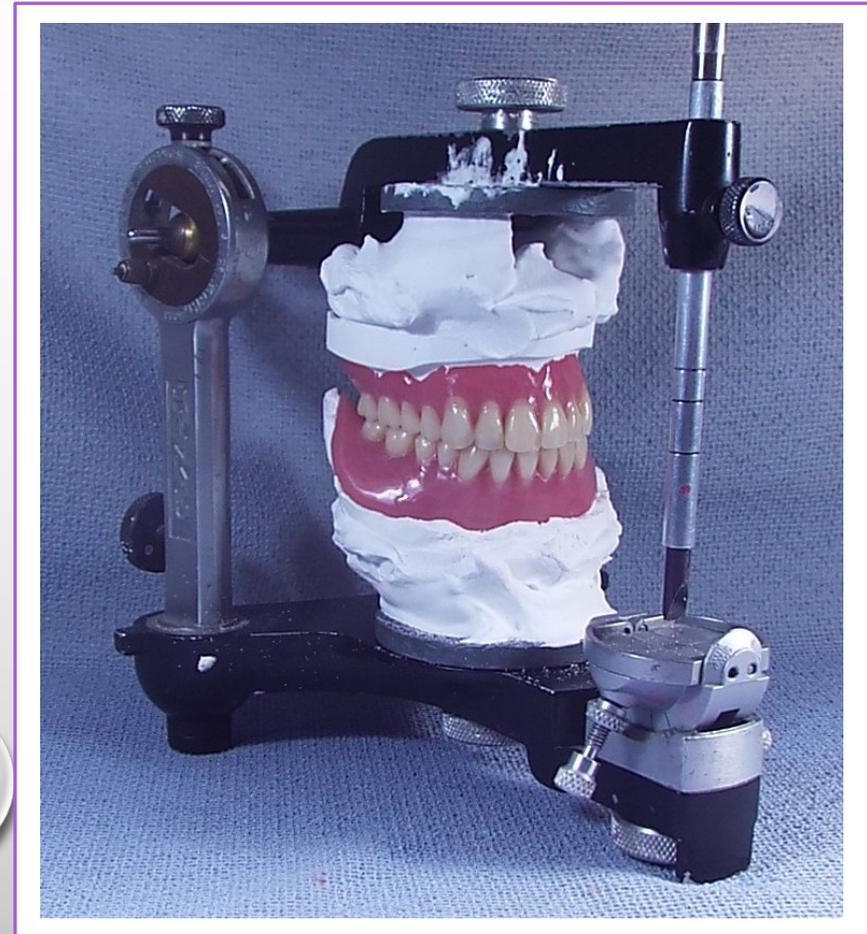
Case 2: Significant bone resorption in the mandibular alveolar ridge

Conclusion

As the photograph on the right shows, the completed denture was remounted in the articulator and adjusted for occlusion.

Pain after the placement of the final denture was resolved after several adjustments. As a result, masticatory function was improved.

If extensive ulceration of the mucosa of the edentulous jaw crest is observed, it cannot be completely cured only by adjustment of the therapeutic denture. In such cases, a soft resin backing should be applied to the treatment denture and the backfilling should be repeated until the jaw crest ulcer is completely healed. Final impressions of the denture should be taken only after complete healing of the residual mucous membrane ulcers.



Difficult case of complete denture

Case 3: Denture with full residual roots in the edentulous jaw

Patient: 50 years old, woman

Chief complaint: mastication disorder, esthetic disorder

Pathophysiology:

As shown in the intraoral photograph at the time of initial examination, numerous residual roots and fistulas were observed in the whole jaw. Mastication was performed by a few remaining anterior roots.

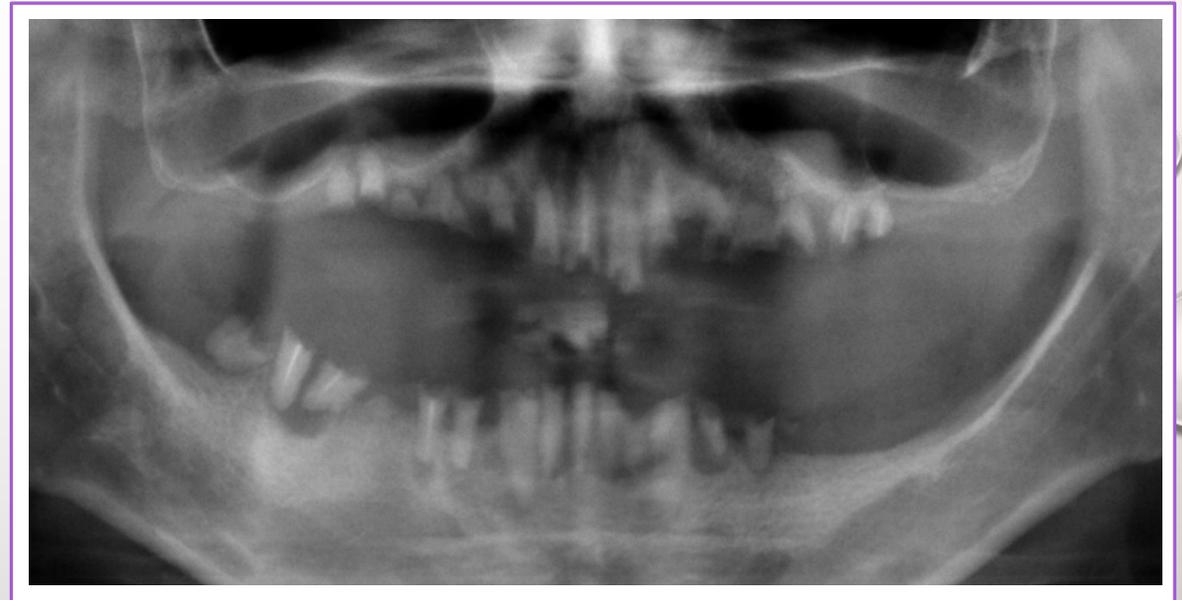


Difficult case of complete denture

Case 3: Denture with full residual roots in the edentulous jaw

Treatment Plan

On the right is a panoramic radiograph of the initial visit. Treatment was planned for immediate placement of a complete denture with extraction of four maxillary incisors and four lower left #3-6. Other remaining roots are extracted after immediate complete dentures are placed. After the extraction socket has healed, rebasing is performed. After the alveolar ridge is stabilized, the upper and lower complete dentures will be remanufactured and fitted.



Difficult case of complete denture

Case 3: Denture with full residual roots in the edentulous jaw

The Challenge

It was difficult to set the occlusal vertical dimension of the denture. The patient was eating with an unstable occlusion, which made it difficult to set the occlusal vertical dimension diameter and central relation.

The initial immediate complete denture should be considered as a provisional setting, and the final complete denture should be fabricated after the crest has stabilized. Therefore, the central relation and the occlusal vertical dimension must be re-established at the time of fabrication of the final denture.



Difficult case of complete denture

References

- 1) Boucher, C.O., Hickey, J.C. and Zarb, G.A. :Prosthodontic treatment for edentulous patients 7th ed., 158~212, C. V. Mosby Company, Saint Louis, 1975.
- 2) 外川正 :無歯顎顎堤模型の解剖学的ランドマーク間の計測, 日本補綴歯科学会雑誌 51巻3号 469-479, 1993.
- 3) 外川正 :無歯顎顎堤計測値の統計分析に基づく無歯顎用試作トレーの評価, 日本補綴歯科学会雑誌 51巻116回特別号 平成19年5月 国際補綴歯科学会神戸2007:131, 2007.
- 4) Peter E. Dawson : Functional Occlusion From TMJ to Smile Design, MOSBY, St. Louis, 2007.



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

The next topic will be the fifth, “ Placement of direct retainers and indirect retainer ”.