AMERICAN BOARD OF PROSTHODONTICS CERTIFICATION EXAMINATION

PART IV PATIENT PRESENTATION

DR.FAWAZ ALQAHTANI

HISTORY AND CHIEF COMPLAINT

SLIDE 2. Pre-Treatment, frontal view

Chief Complaint: patient is a 65-year old Caucasian male who presented for treatment in the Post Graduate Prosthodontic Clinic at University of Medicine and Dentistry of New Jersey-New Jersey Dental School. His chief complaint was: "My lower and upper dentures are loose, and I cannot chew food properly. I do not like the way my dentures look."

SLIDE 3. Pre-Treatment, frontal view (without denture)

Medical History: A review of patient's medical history revealed no significant findings. The patient denied any allergies. He consumes alcohol occasionally and does not smoke. His blood pressure was 125/82; pulse was 72. He is under physician care. No contra-indications to dental treatment were noted.

SLIDE 4. Pre-Treatment, lateral view

SLIDE 5. Pre-Treatment, lateral view (without denture)

Dental History: The patient had infrequent dental care throughout his adult life. According to the patient, all of his remaining teeth were extracted due to adult periodontitis and replaced with maxillary and mandibular dentures. Both were relined several times with a soft-tissue conditioning liner. He was evaluated for the placement of mandibular endosteal dental implants in June 2010. In August 2010, two endosteal dental implants, 13mm in length and 4.3 mm in diameter, were placed in the canine areas of the

mandible. In January 2011, the patient had the second-stage surgery, the implants were uncovered, and healing abutments were placed. He presented to the prosthodontic clinic in February 2011 for fabrication of a new maxillary complete denture and a new mandibular implant-retained overdenture.

CLINICAL FINIDINGS

SLIDE 6.Pre-Treatment smiling, frontal view

SLIDE 7.Pre-Treatment smiling, close view

Extraoral Findings: The extraoral examination revealed a normal complexion with no apparent abnormalities. The patient had no significant facial asymmetry or palpable lymph nodes. The mandibular range of motion was within normal limits. The temporomandibular joints, the muscles of mastication and the muscles of facial expression, were all asymptomatic. The face was square/tapering in shape and the facial profile was straight.

SLIDE 8.Old denture at C.R, frontal view

SLIDE 9.Old denture at C.R, right lateral view

SLIDE 10.Old denture at C.R, left lateral view view

SLIDE 11.prostheses in laterotrusion, right lateral view

SLIDE 12.prostheses in mediotrusion, left lateral view

SLIDE 13.prostheses in laterotrusion, left lateral view

SLIDE 14.prostheses in mediotrusion, right lateral view

SLIDE 15.prostheses in protrusive, frontal view

SLIDE 16.prostheses in protrusive, right lateral view

SLIDE 17.prostheses in protrusive, left lateral view

Slide 18.maxillary complete denture, intaglio surface

Slide19. Mandibular complete denture, intaglio surface

Intraoral Findings: The intraoral examination of the soft tissues revealed no pathology. The lips, cheeks, tongue, oral mucosa, and pharyngeal tissues were within normal limits. Salivary glands were not enlarged; saliva was thin and serous, and flowed freely.

Slide 18.maxillary occlusal view

The maxilla had an ovoid arch form and was U-shaped in cross section with no bony undercuts. The soft tissues, with evidence of mild inflammation due to the ill fitting denture over the ridge, appeared firm posteriorly and slightly displaceable anteriorly. The patient had a curved-shaped palate and Class III palatal throat form according to House's Classification. Attachments for the right and left buccal freni were in a favorable position related to the ridge crest, whereas, the labial frenum was midway between the crest of the ridge and the vestibule. There was sufficient space for the denture flange between the coronoid process and the tuberosity in lateral function.

SLIDE 21.Mandibular, occlusal view

The mandible had an ovoid arch form. The mandibular ridge was severely resorped. The mandible was U-shaped in cross section, with bilateral bony undercuts and a Neil's Class I lateral throat form. The soft tissues were firm and keratinized with a band of attached gingiva covering the crest and the labial aspect of the ridge. Two endosteal dental implants with a standard hexed platform covered with healing abutments, were located in the approximate mandibular canine areas. No pain, no mobility, and no inflammation were found around the implants.

SLIDE 22.Residual ridges at approximate VDO

Normal tongue position according to Wright's classification.

The residual ridge relationship appeared to be Class I (Angle).

SLIDE 23.Pre-Treatment, panoramic radiograph

Radiographic Findings: The panoramic radiograph showed a normal trabecular bone pattern, with no evidence of pathology. The anterior mandibular bone height was 21mm (measured 25 minus 25% distortion), measured at the least vertical height. There was no radiolucency around either implant and no evidence of crestal bone loss. The maxillary residual alveolar ridge demonstrated moderate resorption, and the maxillary sinuses were large. The posterior mandibular residual alveolar ridges were severely resorped.

DIAGNOSIS

1. Maxillary and mandibular Complete edentulism
2. Two mandibular endosteal dental implants at the approximate positions of the mandibular canines.
3. Ill fitting maxillary and mandibular complete dentures with poor occlusion.
4. Adequate maxillary residual alveolar ridge with generalized resorption. A mandibular residual alveolar ridge with severe posterior resorption inclined upwards towards the retromolar pad, and a shallow labial vestibule
5. Class I maxillomandibular relationship (PDI)
6. Class II mandibular bone height (PDI)
7. Type A maxillary residual ridge morphology (PDI)
8. Type A mandibular muscle attachment (PDI)
9. Class I PDI classification system for complete edentulism
10. Adequate interach space with adequate denture foundation base.
11. House's classification-Philosophical.

Treatment Plan

The treatment plan, based on the clinical finding, radiographic assessment, and evaluation of mounted diagnostic casts was presented to the patient as follows:

1. Review of the oral hygiene instructions and home care. Tissue conditioning of the maxillary and Mandibular arch to restore physiologic contour of the soft tissue.
2. Fabrication of Maxillary complete denture
3. Fabrication of Mandibular complete overdenture with two attachments over implants
4. Insertion of the prsotheses and attachment pick-up
5. Post-insertion instructions to include wear and care of the new prosthesis.
6. Annual recall to check and evaluate proper fit of the dentures, soft and hard tissue

TREATMENT

SLIDE 24.Old dentures in M.I.P

The patient was instructed to stop wearing the maxillary and mandibular complete dentures for 48 hours, finger massage the tissue frequently with gauze moistened with water.

The old denture relining material was removed. A mix of the tissue conditioning material was applied to the intaglio surface of the maxillary and mandibular complete

dentures and it was replaced with a new mix at three weeks and again after six weeks. The material was replaced three times during the course of treatment.

The patient was instructed to remove the maxillary and mandibular denture and chew bubble gum three times a day after each meal in order to massage the tissue and stimulate blood supply.

SLIDE 25. Maxillary preliminary impressions

A maxillary preliminary impression was made in a stock metal tray with irreversible hydrocolloid impression material.

SLIDE 26. Mandibular preliminary impressions

A mandibular preliminary impression was made with system 1 Accu-gel. The impressions were disinfected with cavicide and poured with Type III dental stone.

Record bases were fabricated using triad light cured resin material and occlusion rims were added using baseplate wax. The maxillary occlusion rim was made parallel to the horizon anteriorly and ala-tragus line laterally. The physiologic rest position was determined and 2 millimeters were subtracted to establish tentative vertical dimension of occlusion. The mandibular wax rim was aligned with the maxillary wax rim at the determined vertical dimension of occlusion. The mandibular posterior wax rim was relieved one millimeter and indexed to allow room for occlusal recording material. A centric relation record was made using Aluwax. A face bow transfer was made using the Hanau Spring-bow. The maxillary diagnostic cast was mounted on a Hanau wide view articulator with Type III mounting stone. The mandibular diagnostic cast was mounted with the centric relation record.

Slide 27. Mandibular border molding

Slide 28. Maxillary border molding

Custom impression trays were fabricated using triad light cured resin material. Custom tray were evaluated for overextension and corrected prior to border molding. The extent of the maxillary posterior border was determined and transferred to the custom tray. The distal extent of the custom tray was trimmed to this line. The custom trays were border-molded to the muscles and soft-tissue attachments of the mouth using modeling impression compound.

Slide 29. Maxillary final impression

Maxillary final impression was made using zinc oxide eugenol impression material. The extent of the maxillary posterior border was determined and transferred to the impression. The distal extent of the impression was trimmed to this line.

Slide 30.mandibular final impression

The mandibular final impression was made using regular body, poly-vinyl siloxane impression material. The excess material was trimmed. The impressions were disinfected with cavicide. Beading and boxing was made and the final impression was poured with Type III dental stone.

Slide 31. Record base (frontal view)

Slide 32. Record base, left lateral view

Slide 33. Record base, right lateral view

Record bases were fabricated with cold cure acrylic resin and occlusion rims were added using baseplate wax. The maxillary occlusion rim was made parallel to the interpupillary line anteriorly and ala-tragus line laterally. Phonetics and esthetics were used to establish the length and anterior position of the wax occlusion rim. The physiologic rest position was determined and 2 millimeters were subtracted to establish tentative vertical dimension of occlusion. The mandibular wax rim was aligned with the maxillary wax rim at the determined vertical dimension of occlusion. The midline and canine lines were marked on the maxillary and mandibular occlusion rims.. The mandibular posterior wax was relieved one millimeter and indexed to allow room for occlusal recording material. A centric relation record was made using Aluwax. A face bow transfer was made using the Hanau Spring-bow. The anterior tooth mold and shade were chosen after try-in of different portrait tooth molds with Trueflex Selection Rim Kit. The maxillary master cast was mounted on a Hanau wide view articulator with Type III mounting stone. The mandibular master cast was mounted with the centric relation record. Centric relation was verified with a new centric relation record on the articulator.

Slide 34. Anterior teeth set-up (frontal view)

Esthetics and phonetics were used to set the anterior teeth with the patient present. A protrusive record was taken to program the articulator settings for the horizontal and lateral condylar indications. The right horizontal condylar inclinations were set at 30 and the left horizontal condylar inclinations at 25 degrees. The lateral condylar inclinations

were set at a value of 15 degrees. Portrait, 30 degree teeth were used to develop a bilateral balanced occlusal scheme.

Slide 35. Wax trial denture (frontal view)

The teeth were set to a balanced articulation concept of occlusion and anatomically waxed. The trial dentures were tried in the mouth. The vertical dimension of occlusion was verified with esthetics and phonetics. The Centric occlusion was verified on the articulator using Aluwax. The patient approved the esthetics of the trial dentures. The vibrating line was identified and marked in the patient's mouth, and the length of the posterior border and extent of the palatal seal were transferred to the master cast. The gingival denture base shade was selected. Posterior palatal seal area was carved on the maxillary master cast. The mandibular master cast was indexed using putty. Metal meshwork was fabricated to strengthen mandibular overdenture. Final festooning was performed and the prostheses were ready for processing. AFace bow preservation index was fabricated. The maxillary wax trial denture was flasked and processed using heat cured methylmethacrylate resin (SR Ivocap Injection System)

Slide 36. Wax trial denture (right side)

Slide 37. Wax trial denture (left side)

Slide 38. Wax trial denture (Maxillary Occlusal view)

Slide 39. Wax trial denture (Mandibular Occlusal view)

The dentures and master casts were deflasked and remounted on the articulator. Laboratory remount was performed to eliminate the processing error in centric relation

only. The prostheses were removed from the casts, finished and polished. The Maxillary prosthesis was mounted using facebow preservation index.

COMPLETED TREATMENT

SLIDE 40.Completed maxillary denture, intaglio surface

SLIDE 41.Completed mandibular overdenture,intaglio surface

SLIDE42.Mandibular occlusal view

SLIDE 43.Maxillary occlusal view

The dentures were inserted and pressure-indicating paste was used to verify complete seating. The borders were checked with disclosing wax and adjusted accordingly.

A centric relation record was made with modeling plastic impression compound on the mandibular prosthesis and the mandibular denture was mounted against the maxillary denture. A new centric relation record was made to verify the remounted prostheses. Selective grinding was performed to refine the balanced occlusal scheme The occlusion again was verified intraorally.

INSTRUCTIONS TO THE PATIENT; FOLLOW-UP CARE

SLIDE 44. Prostheses in CR, frontal view

The dentures need to be brushed and cleaned after each meal with a denture brush. The dentures should always be cleaned over a sink half-filled with water to prevent them from breaking if they are dropped. The patient was instructed to leave his denture out of his mouth during sleep hours for tissue health and recovery. The denture should be stored in water. The oral tissues and the implants abutments are to be cleaned daily with a soft toothbrush. The patient should return to the dentist if there are any problems.

SLIDE 45.Prostheses in CR, right lateral view

SLIDE 46.Prostheses in CR, left lateral view

SLIDE 47.Prostheses in laterotrusion, right lateral view

The patient was seen after 24-hour for a follow-up appointment. The denture occlusion and supporting tissues were evaluated and adjusted. He was then seen on a 48-hours, 72-hours, one-week, and two-week recall schedule. He was comfortable and extremely pleased with the esthetics and function of his dentures. Locator attchments were selected, 2mm cuff height. The abutments were torque down to 30Ncm. Locator pick up were done intraorally in centric relation position.

SLIDE 48.Prostheses in laterotrusion, left lateral view

SLIDE 49.Prostheses in mediotrusion, right lateral view

SLIDE 50.Prostheses in mediotrusion, left lateral view

The patient was placed on a six-month recall. It was explained to the patient that the locator attachments would need to be replaced in the future. The maxillary and mandibular complete dentures will need a reline or remake in the future and should be done when required to maintain healthy, physiologic tissue and prevent bone resorption.

PROGNOSIS

The patient was extremely motivated and dedicated to the proposed treatment. His philosophical nature, positive attitude, and oral-hygiene awareness should insure a favorable long-term prognosis.

SLIDE 51.Prostheses in protrusion, frontal view

SLIDE 52.Prostheses in protrusion, right lateral view

SLIDE 53.Prosheses in protrusion, left lateral view

SLIDE 54.Pre-treatment, frontal view

SLIDE 55.Post-treatment, frontal view

SLIDE 56.Pre-treatment, lateral view

SLIDE 57.Post-treatment, lateral view

SLIDE 58.Pre-treatment smiling, frontal view

SLIDE 59.Post-treatment smiling, frontal view

SLIDE 60.Pre-treatment smiling, close view

SLIDE 61.Post-treatment smiling, close view