PROSTHETIC REHABILITATION OF A FAILED MANDIBULAR FIXED PARTIAL DENTURE WITH AN IMPLANT SUPPORTED FIXED PROSTHESIS: A CASE REPORT

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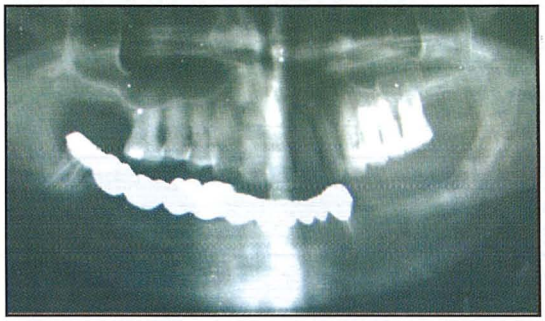


Fig 1: Pre operative OPG

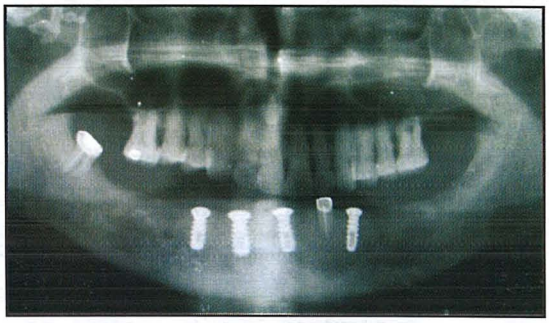


Fig 2: Post operative OPG



Fig 3: Abutments screwed

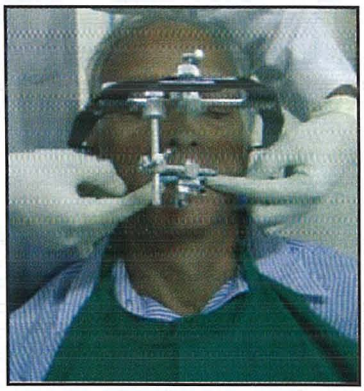


Fig 4: Face bow record



Fig 5: Working cast

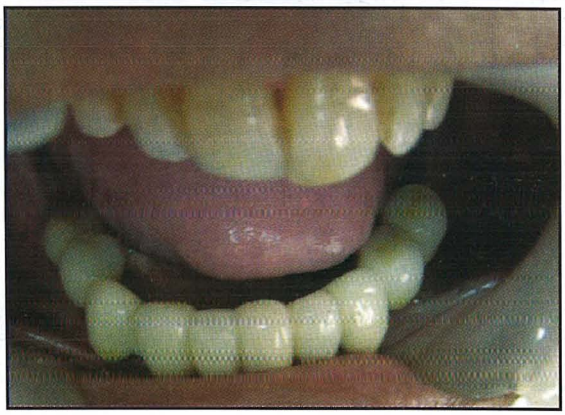


Fig 6: Post operative intraoral

This report describes the clinical evaluation of a patient with a failed mandibular fixed partial denture and the prosthodontic treatment with an implant-supported cement-retained fixed partial denture. Treatment included preservation of remaining teeth and implant-supported cement-retained fixed partial denture supported by 4 mandibular implants. Detailed prosthetic planning and evaluation before implant surgery met the esthetic and functional demands of the patient.

Keywords: living pontic, endosseous implants, implant supported fixed prosthesis

Treatment with fixed reconstructions on osseointegrated implants has improved the quality of life of edentulous patients and has been used for more than 30 years[1]. While they were originally utilized in the edentulous mandible,[2,3] osseointegrated implants have now been employed in a variety of partially edentulous situations with a high degree of success[4-6]. The fabrication of implant-supported restorations requires many clinical and laboratory procedures that must be very precise[7,8]. Each stage in the fabrication procedure can incorporate a small error, which will contribute to a positional distortion of the prosthesis relative to the implants. Possible distortion of the restoration can occur during the impression procedure, during fabrication of the master cast, during fabrication of wax patterns, during investing and casting procedures, during firing of the porcelain, or during delivery of the prosthesis. Therefore, it is important to take utmost care to achieve a passive fit of the prosthesis.

Case report

A 60 years old male patient reported to the department of Prosthodontics, Army College of Dental Sciences with chief complaint of pain in right side of lower jaw. He also complained of loose fixed bridge in the lower jaw.

Patient gave a medical history of hypertension and was regularly taking antihypertensives. He gave a dental history of numerous loose teeth that were removed gradually over a period of past five years followed by a fixed dental bridge that was placed by a private practitioner as a replacement of the missing teeth.

Intra oral examination revealed a single long span fixed partial prosthesis extending from 33 to 48 .The prosthesis was mobile and there was swelling in the region of 33, 48.

The maxillary arch had teeth present from 16 to 26 that were periodontally sound, however there was generalized cervical abrasion. Oral hygiene was fair.

An OPG was advised which showed an eleven unit long fixed prosthesis from 33 to 48 [Fig 1]. Patient had well healed ridges and adequate bone height and width.

The patient was advised to get the fixed partial prosthesis removed. He was given the options of removable dentures and fixed prosthesis. The patient decided to go in for fixed prosthesis.

Treatment plan

It was decided to prosthetically rehabilitate the patient with an implant supported cement retained fixed prosthesis for the mandibular arch over four endosseous implants and a tooth pontic. Patient was advised to undergo all surgical clearance tests. His reports revealed no significant findings.

Preoperative planning

The long span fixed prosthesis was removed. A complete oral prophylaxis was done. 33 and 48 were preserved and metallic copings were placed on both. 33 would act as a 'living pontic'.

An assessment of the available bone was done with the help of radiographs and elaborated ridge

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mapping procedures. The available bone was found to be more than adequate precluding the need of a CT scan.

It was decided to place four dental implants in between the two mental foramens. Before placing the implants it was decided to fabricate lower interim denture. The patient was prescribed preoperative antibiotics and Chlorhexidine mouthrinses prior to the surgery.

Surgical procedure

After scrubbing and draping the patient, local anesthesia was administered. Four endosseous indigenous dental implants (3.8mm X 12mm) were placed under total asepsis and sterilization using flapless surgical procedure. Care was taken to achieve maximum parallelism. Primary stability was established on all implants. An OPG was done fifteen days after the placement of implants [Fig 2]. The lower complete prosthesis was soft relined and given to the patient for regular wear. The patient was asked to come for regular weekly checkup. The subsequent fifteen weeks were uneventful.

Prosthetic phase

After fifteen weeks and all the four implants were exposed, the cover screws were unscrewed, the implants were irrigated and healing abutments were then placed [Fig 3].

The lower removable prosthesis was again relined and given to the patient. Face bow record was made and transferred to Whipmix articulator [Fig 4]. The maxillary cast was mounted on the articulator. An addition silicone impression was made using closed tray technique. Implant analogs were placed, a gingival replica was completed in silicone material, and the definitive cast was poured in type IV die stone [Fig 5].

The abutments were prepared to achieve parallelism and create interocclusal space and a bite registration was made to mount the mandibular cast. Wax pattern was fabricated, invested and cast. The framework was tried in the patient's mouth and after confirmation of the frame fit, it was sent to the lab for ceramic restoration and firing.

The completed prosthesis was evaluated for margin integrity, occlusal relationship, function, esthetics and phonetics. It was finally cemented using provisional cement designed for cementation of implant restorations [Fig 6].

The patient has been followed regularly for routine hygiene and evaluation of long term success of the restorations. He has continued to report excellent comfort and function and is pleased with the treatment outcome.

Discussion

Alveolar bone loss following tooth loss continues even after a removable complete denture is placed due to lack of functional stimulation throughout an individual's life.

The use of dental implants provides a reasonable treatment modality to modify and retard the bone resorption[9]. The flapless technique has been proven to reduce the pain experience in patients in terms of it's duration and intensity with the added advantage of reduced morbidity[10].

This clinical report indicates that favorable treatment results can be achieved using implant supported restorations for patients requiring comprehensive treatment.

As a result of impaired tactile function of osseointegrated implants, lack of precision in the occlusal rehabilitation might not be readily detected by patients with implant-supported prostheses. Consequently, occlusion and articulation need to be regularly reexamined to avoid excessive and premature contacts, since their role as variables for periimplant bone loss is thus far unknown[11].

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PFA 75th Anniversary Celebration in Paris, France - June 16th 2011

Dear Fellows

Next year will be the 75th anniversary of the founding of the Pierre Fauchard Academy by Elmer Best in. Since our next President Hubert Ouvard is from France, the home of Pierre Fauchard, we have decided to throw a party in Paris to celebrate this great event. The date is June 16th 2011.

Dr. Ouvard has lined up a great day of events with Continuing Education in the morning and then the Awards and Induction ceremony at 11:30 at the Town Hall. Following the ceremony there will be a cocktail party to celebrate our 75th anniversary. In the afternoon we will have a scenic boat ride on the Seine River and enjoy views of Paris and float by the Eiffel Tower. The day will conclude with a glorious banquet that evening.

If you have any interest in this event could you e-mail the Central office at centraloffice@fauchard.org so that we can better plan for this event.

The strength and vitality of this organization is your hands. You should be applying for grants from the Foundation, recognizing the PFA Scholarships given at your Dental Schools and holding at least one meeting a year where inductions and awards are given. The life blood of the organization is new members and new member recruitment is in your hands.

Please let me or any Officer or Trustee know if you have any questions or concerns. It is our job to be there to help you.

Steve Hedlund, DDS
President
Pierre Fauchard Academy