Suggested design for telescopic denture

Telescopic dentures could be especially indicated in cases of distally extended edentulous areas with two or more remaining teeth in favourable positions and with sufficient periodontal support. A breakdown in abutment teeth structure or a breakdown in their periodontal support immediately negates the overdenture concept. Because the resiliency of the tooth secured by the periodontal ligament in an apical direction is not comparable to the greater resiliency and displaceability of the mucosa covering the distally extended edentulous ridge, forces are transmitted to the abutment teeth as the denture bases are displaced in function. Then rigid connection between the denture bases and the direct retainer on the abutment teeth is damaging and some type of stress equalizer is essential to control forces within the physiologic tolerance of the teeth and supporting structures and protect the vulnerable abutment teeth.

In this article, the outer crowns of telescopic design were constructed as parts of a bridge restoring the remaining anterior teeth and can be removed by the patient. These crowns act as direct retainers in the tooth-supported part of the denture. A flexible or semi flexible connector (a form of stress equalizer) was constructed between the direct retainer and tooth-supported part of the denture, and the mucosally supported saddle to provide the stress breaking action.

The main suspected benefits of such design of telescopic prosthesis over the standard overdenture are: (1) the minimized stress of the abutment teeth, (2) no need for dowel or screws, (3) avoiding the problem of labial undercuts, and (4) achieving periodontal health by avoiding the coverage of the gingival margin.

Stresses transmitted to maxillary residual ridge: influence of prosthetic approaches used for establishing balanced occlusion.

Many practitioners consider the role of occlusion, to be the single most important factor in dentistry especially during complete denture construction. The reasonable philosophy of complete denture occlusion must address comfort, function and esthetic as primary needs for the patient. The scheme of occlusion is considered to be important factor affecting denture stability and function efficiency. This study was carried out to measure stresses transmitted to maxillary edentulous ridge by complete denture with three different prosthetic approaches for establishing balanced occlusion (fully balanced occlusion, mandibular functional generated path & maxillary balanced occlusion and mandibular and maxillary functional generated path occlusion). In this study the same denture was used for each case to establish the different occlusal schemes by the aid of posterior composite resin material.

Bone height changes of residual alveolar ridge as related to short versus long sleeve complete mandibular bar-joint overdenture.

Today with stress on preventive measures in prosthodontics, the use of overdentures has increased to the point where it is now a feasible alternative to most treatment plane outlines in the construction of prosthesis for patients with some remaining teeth. The bar joint attachment that has applications for tooth-supported overdenture construction where
two, three or possibly four teeth remain. Bar Joints is subdivided into single and multiple sleeve bar joints. Single sleeve may be either long or short one. To study the influence of sleeve length on distally extended residual ridge under mandibular bar-joint overdenture, 10 female patients with mean age of 55 years were selected and divided into two equal groups: Group (A) where the bar-joint overdenture was constructed and retained by a single short sleeve and Group (B) where the bar-joint overdenture was constructed and retained by a single long sleeve. From results of this study, it can be concluded that: When bar-joint attachment is indicated for overdenture, long sleeve can be used because it has a little adverse action on the alveolar ridge resorption.

4-

Vertical display versus rigid internal attachment removable partial denture — radiographic study

Since the principle of the intracoronal attachment does not permit horizontal movement therefor all horizontal, tipping and rotational movements of the prosthesis are transmitted directly to the abutment tooth. One method of controlling stress is shimming (allow vertical display). This research was carried out on 8 patients of upper completely edentulous arch against bilateral distal extension ridges to study the effect of internal attachment removable partial denture with and without vertical display on alveolar bone height changes of both abutment teeth and distal extension ridge. The patient were divided into two groups. Where internal attachment removable partial dentures provided allow vertical display group A and without vertical display group B. From the results of study, intracoronal attachment removable partial denture with vertical display exhibit significantly reduction of abutment alveolar bone resorption. In conclusion: When intracoronal attachment removable partial denture is used it must accomplish with vertical display to reduce abutment alveolar bone resorption.

5-

Effect of different impression materials on surface roughness and plaque accumulation on maxillary denture fitting surface.

It was established that the surface roughness of denture fitting surface enhance plaque accumulation and promote gross of candida albicans and other pathogenic microorganisms. Efforts should be directed to produce a smooth denture fitting surface rather than glazing or coating it. This work aimed to select one of four currently used final impression materials (hand-mixed irreversible hydrocolloid, vacuum-mixed irreversible hydrocolloid, zinc oxide impression paste and rubber base impression material) that can produce the least surface roughness of denture fitting surface and to evaluate its effect on plaque accumulation and content. The surface roughness of each maxillary denture-fitting surface were measured by using Talysurf. After one month of denture insertion of each group, glucose and protein content of denture plaque was evaluated by plaque scoring and by spectrophotometer analysis of plaque glucose and protein content. The results of this study revealed that silicone rubber base impression material provide a master gypsum master cast and denture fitting surface with minimal surface roughness and minimal plaque accumulation compared to hand & vacuum mixed alginate and zinc oxide eugenol final impressions.

6-

Maxillary denture displacement during functional relining impression procedure
with tissue conditioner.

This research was carried out on eight completely edentulous patients to study the effect of functional relining impression technique with tissue conditioner on maxillary denture displacement regard different time of keeping the impression in the patient mouth. Centric occlusion was used to seat the maxillary denture for 3 minutes. The patients were asked to mould the periphery by cheeks and lips movement and functionally recorded the impression by asking him to swallow, suck and talk for 15, 30, 45 or 60 minutes. Denture displacement was measured in three co-ordinates with modified measurescope. The results of this study revealed that 15 minutes for functional relining by the tissue conditioner exhibited a significant increase in vertical maxillary denture displacement than that for 30, 45 and 60 minutes. On comparing maxillary denture displacement in the three coordinates after functional relining impressions at 30, 45, 60 min, it was found that no one superior to other. This study concluded that 30 minutes was the time selected for functional relining impression making with tissue conditioner material regard less denture displacement and less time consuming.

7-

Maxillary acrylic denture base deformation as related to different occlusal concepts for complete denture

Many types of occlusion concepts are significant in complete denture prosthodontics. A universally accepted concept of occlusion has yet to be scientifically established. This study was planned to evaluate to what extent providing complete denture wearer with three different occlusal concepts (balanced occlusion, canine guidance and monoplane occlusion concepts). would beneficially or adversely affect acrylic maxillary denture base deformation. Ten completely edentulous patients were selected from out-patient clinic of Prosthetic Department, Faculty of Dentistry, El-Mansoura University. All patients received an acrylic complete denture with three sets of interchangeable posterior occlusal segments (balanced occlusion, canine guidance and monoplane occlusion concepts). Acrylic maxillary denture base deformation was measured by strain gauge method. This study demonstrated that; balanced and canine guidance occlusion concepts provide greater denture base deformation than monoplane occlusion concept. From results of this study it can be concluded that monoplane occlusion concept demonstrated less denture base deformation than balanced and canine protected occlusion concepts and being recommended for debilitated alveolar ridges.

8-

The effect of different posterior occlusal plane orientation techniques on masticatory performance of complete denture wearers.

The function and esthetic of removable prosthesis depend on the correct orientation of occlusal plane. The proper posterior occlusal plane orientation technique as related to masticatory efficiency was not clearly investigated. Therefore, this study was aimed to investigate the effect of six different posterior occlusal plane orientation techniques on the patient masticatory efficiency in order to choose the most suitable technique for denture construction. This study was carried on ten completely edentulous male patients where the posterior teeth arranged on a posterior occlusal plane oriented according to (1) anatomical orientation technique; (2) functional orientation technique by using the vestibular functional impression;(3) biomechanical orientation technique by using the
mid-way line between the maxillary and mandibular ridges; (4) cephalometric orientation technique; (5) Anatomical orientation technique (at the level of upper third of the retromolar pad and (6) Functional orientation technique (parallel to the lateral wall of the tongue). The masticatory muscle performance was measured. The result revealed that there was no significant difference between group 1, 2, 3, 4, 5 and 6. This study concluded that an occlusal plane orientation technique for completely edentulous patient is not a factor that affect in masticatory performance.

New method determining the vertical dimension of rest for completely edentulous patient using the letter d

Determination of the correct VDO for an edentulous patient is generally agreed to be one of the most important steps in making a complete denture. One of the current methods for observing the interocclusal distance is to observe the distance between the occlusal surfaces during speech, with the Frankfort plane parallel with the floor. The aim of this work is to evaluate the arabic letter as a speaking method for determining the vertical dimension for completely edentulous patient. Twenty healthy completely edentulous male patients were selected for this study. The vertical dimension determined by the new physiologic speaking method using the letter was compared to the vertical dimension of occlusion determined by the physiologic swallowing method regarding the mean interarch distance (IAD) of each method. From results of this study, it was found that the difference between the mean interarch distance (IAD) of the two methods was within the free way space. It can be concluded that, the new physiologic speaking method using the letter may be considered as a simple, practical and scientific method for establishing the vertical dimension of rest.

A comparative study of bar-clip incorporation techniques into mandibular complete overdenture base - resiliency of bar-joint attachment

Resilient bar-joint attachments are designed to provide some vertical movement of the denture base toward the supporting tissue. Direct and indirect techniques are used to incorporate the bar-clip into the overdenture base. The purpose of this work was to study the effect of bar-clip incorporation technique on the resiliency of bar-joint attachment in mandibular complete overdentures. 24 male patients with mean age of 55 years were randomly divided into four equal groups. The metal clip was incorporated in Group I by indirect method during packing, in Group II by indirect method at insertion, in Group III by direct method at insertion and in Group IV by indirect method three weeks after insertion. For all groups, the missed vertical space between the bar and its clip was measured three and six months after insertion. From results of this study, it can be concluded that: (1) Incorporating the bar-clip into the mandibular overdenture base can be carried out after initial settlement for lifelong resiliency of bar joint attachment. (2) For long-lasting resiliency of bar joint attachment, a metal spacer of more than 1 mm may be needed when indirect laboratory method is used for incorporating the bar-clip into the mandibular overdenture base.

Bone Height Changes Around Immediately Loaded Implants Splinted With Pre-Fabricated Bar Attachment For Mandibular Overdentures
Mandibular implant-retained overdenture (IOD) is an especially attractive treatment because of its relative simplicity, minimal invasiveness and economy. The high activity in applying immediate/early loading protocols is indicated by an increasing number of publications and conference abstracts. Splinting of immediately loaded implants by a bar, prevent micromovement and hence improve osseointegration in addition to improvement of overdenture retention. Recently, pre-fabricated bars can be placed directly on immediately loaded implants to retain mandibular overdenture. This study was aimed to evaluate the bone height changes around immediately loaded implants splinted with prefabricated bar to retain mandibular overdenture. Six completely edentulous healthy males were selected for this study. For each patient, two standardized size; of 13 mm length and 3.6 mm width; screw-type implants were surgically inserted in the canine areas and splinted with pre-fabricated bar to retain immediately loaded mandibular overdenture. Along the first and second six months after overdenture insertion, the bone height changes were evaluated radiographically to measure the peri-implant marginal bone loss and the results were statistically analyzed. Within the limitations of this study, it can be concluded that splinting of immediately loaded implants with prefabricated bar attachment to retain mandibular implant overdenture can be considered as a successful prosthetic approach for preserving the peri-implant marginal alveolar bone.

12-

Tissue health changes around immediately loaded implants splinted with pre-fabricated bar attachment for mandibular overdentures

Mandibular implant-retained overdenture (IOD) enhance overall patient satisfaction. It presents a reliable and simple solution to denture retention and stability problems. The implants may be either splinted, using a bar, or nonsplinted and retained by attachments, such as balls or magnets. With the evolution of new implant designs, immediate loading of implant has been used with success. One of the treatment options to correct severe implant misalignment is to splint the abutments as a bar-supported implant overdenture. This study aimed to evaluate the tissue health around immediately loaded implants splinted with pre-fabricated bar used to retain mandibular overdenture. Six healthy male patients of 45-60 years old were selected for this study. In all patients total edentulism of maxilla and mandible was at least six months before implant placement. For each patient, mandibular implant-retained overdenture was constructed. The two implants were splinted with pre-fabricated Dyna instant adjusting bar and the tissue health was investigated in the aspects of peri-implant probing depth, peri-implant bleeding index, peri-implant plaque index and implant mobility. from the results of this study, it can be concluded that immediately loaded implants for mandibular overdentures should be splinted within a short period of time to preserve the tissue health around immediately loaded implants.

13-

Implant Retained “Tissue Supported Mandibular Distal- Extension RPD for Tooth preservation

In distal extension removable partial denture, where support is obtained partly from unyielding teeth and partly from yielding mucosa, forces transmitted from the prosthesis to abutment teeth are greater than they can tolerate, and the teeth may become mobile or can lead to abutment tooth loss. Therefore alternative therapies that improve oral
conditions and maintain bone often are warranted. Rehabilitation with implants provides a wide range of options that would not be viable with conventional methods. The goal of this work is to preserve the remaining natural teeth for future use as abutment and for esthetic advantages, consequently, Implant retained mucosal supported removable partial overdenture will be constructed.

14-

**Double Lingual bar versus singulum bar mandibular major connector in mandibular distal extension removable partial denture-Radiographic evaluation of abutment**

Statement of problem: Studies that examine the effects of RPD on the periodontal health and supporting alveolar bone of the remaining teeth vary greatly in their recommendations for optimal design. One example of the variation in recommended designs concerns selection of the mandibular major connectors. Aim of the work: to evaluate radiographically bone height changes of the abutment in mandibular distal extension removable partial denture either designed with double lingual bar or cingulum bar mandibular major connector. Materials and methods: Ten patients of upper completely edentulous arch against mandibular bilateral distal extension ridges patients. They were divided into two groups where the mandibular distal extension RPD designed with double lingual bar for (group I) and cingulum bar mandibular major connector for (group II) Periapical X-ray film of the abutment teeth was taken immediately before and after 6 months of denture insertion. Results When comparing the abutment alveolar bone height change after 6 months from insertion mandibular distal extension RPD, cingulum bar design was found significantly to be more than that observed with double lingual bar mandibular major connector design. Conclusion: Double lingual bar is superior to cingulum bar mandibular major connector regarding the preservation of abutment alveolar bone.

15-

**Stress analysis of splinted abutment teeth to retain mandibular overdenture with and without bar cantiliver (Invitro Comparative Study)**

Statement of problem: Studies analyzing the stress distribution on splinted abutments by single-bar versus cantilevered-bar are lacking. Aim of the work: Was to study the stress distribution around splinted abutments of mandibular single-bar versus cantilevered-bar overdenture using two types of connections between the bar and the overdenture. Materials and Methods: Acrylic resin model of human edentulous mandible was abricated with two detachable standard sized canines embedded in canine area. Single-bar and cantilevered-bar (with 7mm distal extension) were fabricated. A clips retained and soft liner retained overdenture were fabricated for each bar design. Vertical axial load was applied unilateral and central to the central fossa of first molar area on each of the four standardized overdenture prosthesis. Stresses that developed around the abutments will be monitored using strain gauges. Results: The softliner material is highly recommended to be used as a bar overdenture attachments for adequate load distribution especially in cantilevered bar cases.

16-

**Marginal bone loss adjacent to conventional and immediate loaded two implants supporting a ball-retained mandibular overdenture**
Objectives: The aim of this study was to evaluate and compare marginal bone loss and clinical outcomes of conventionally and immediately loaded two implants supporting a ball- retained mandibular overdenture.

Materials and methods: Thirty six completely edentulous patients (22 males and 14 females) were randomly assigned into two groups. Each patient received two implants in the canine area of the mandible after a minimal flap reflection. Implants were loaded by mandibular overdentures either 3 months (conventional loading group) or the same day (immediate loading group) after implant placement. Ball attachments were used to retain all overdentures to the implants. Vertical and horizontal alveolar bone losses were evaluated in both groups 1 year and 3 years after implant placement using Multislice Computed Tomography (Multislice CT) which allow evaluation of peri-implant buccal and lingual alveolar bone. Plaque scores, gingival scores, probing depths and periotest values were evaluated 4 months (base line), 1 year and 3 years after implant placement. Clinical and radiographic evaluations were performed at distal, labial, mesial and lingual peri-implant sites.

Results: After 3 years follow up period, immediate loading group recorded significant vertical bone loss at distal and labial sites than conventional loading group and no significant differences in horizontal bone loss between groups were observed. Probing depth at distal and labial sites in immediate loading group were higher than conventional loading group, while plaque scores, gingival scores, and periotest values showed no significant differences between the two groups. A low level of positive correlation between plaque scores, gingival scores, probing depths, and vertical bone loss was noted.

Conclusion: Immediately loaded two implants supporting a ball -retained mandibular overdenture are associated with more marginal bone resorption and increased probing depths when compared to conventionally loaded implants after 3 years. The bone resorption and probing depths at distal and labial sites are significantly higher than those at mesial and lingual sites. Clinical outcomes do not differ significantly between loading protocols.

17-

Implant supported versus retained mandibular distal extension removable partial overdenture - A preliminary study of implant and abutment marginal bone heights

Purpose: This study was aimed to investigate and compare the effect of implant supported versus retained mandibular distal extension removable partial overdenture (RPOD) on the abutment and implant marginal bone height changes.

Materials and methods: 20 healthy male patients were selected with mandibular bilateral distal extension ridges against edentulous maxilla .One osseointegerated self tapping implants was installed distally in the area of the second mandibular molar of each side. Patients were divided into two equal groups; Group I: received maxillary complete denture against implant supported RPOD, and Group II : received maxillary complete denture against implant retained RPOD. Digital panoramic radiographs were recorded for each patient immediately, 6 and 12 months after denture insertion to measure the abutment and implant marginal bone height changes.

Results: The mean tooth abutments marginal bone loss was statistically significant in both groups after 6 and 12 months of the study. However, this marginal bone loss was statistically significant between both groups after 12 months of the study. The mean
implant marginal bone loss was statistically significant within and between both groups along the periods of the study.

Conclusion: Regardless the implant RPOD designs concept (supported or retained), abutment tooth and implant marginal bone were significantly reduced. However, this study recommended periodic monitoring of ridge base relation to preserve the supporting structures.

18-

The clinical and radiographic outcome of immediately loaded Miniimplants supporting a mandibular overdenture. A 3-year prospective study

This article aimed to examine the clinical and radiographic outcome of mini dental implants (MDIs) supporting a mandibular overdenture. Twenty-eight patients (16 men and 12 women) complaining from insufficient retention of their mandibular denture received a total of 112 MDIs (four per patient) in the interforaminal area of the mandible using the non-submerged flapless surgical approach. Implants were immediately loaded with mandibular overdentures after implant insertion. Each implant was evaluated at the time of initial prosthetic loading, 6, 12, 24 and 36 months thereafter. Clinical evaluation was performed using plaque index (PI), gingival index (GI), probing depth (PD) and periotest values (PTVs). Radiographic evaluation was performed in terms of vertical (VBLO) and horizontal (HBLO) alveolar bone loss. Cumulative success and survival rates were calculated using life table analysis. Plaque index, GI, PD, VBLO and HBLO increased significantly in the first year after overdenture insertion, and no significant difference between subsequent observations was noted. Periotest values demonstrated no significant difference between observation times. The cumulative survival and success rates of MDIs were 96.4% and 92.9%, respectively. Within the limitations of this study, clinical and radiographic peri-implant tissue responses of immediately loaded MDIs supporting a mandibular overdenture were favourable after 3 years. However, randomised, controlled clinical trials are needed to compare these responses to that of conventional-diameter implants.

19-

SCANNING ELECTRON MICROSCOPE EVALUATION OF FAILED IMPLANTS SUPPORTING MANDIBULAR OVERDENTURES RETAINED WITH BILATERAL BAR-ATTACHMENTS

ABSTRACT

Background: Dental implants have been used for supporting and retaining mandibular overdentures. Little investigations were done on the immediately loaded implants supporting mandibular overdentures that retained by bilateral bar-attachments. Purpose: This study aimed to use scanning electron microscope in evaluating the failed implants after immediate loading by mandibular overdentures retained with bilateral bar-attachments. Materials and Methods: Twenty male completely edentulous patients had consulted for treatment with immediately loaded implant supporting mandibular overdentures retained with bilateral bar-
attachment.
For each patient, four Acid etched Roughened Titanium screw type implant fixtures were surgically inserted in the canine and first molar areas. Bar abutments were screwed into their fixtures. Two abutments on each side were splinted with a pre-fabricated Instant Adjusting Bar and immediately loaded with mandibular overdenture. Implant mobility was weekly assessed during the first three months after insertion. Failed implants were removed and examined by scanning electron microscope. Results: Mobility was observed in 12 posterior implants after 4-7 weeks of overdentures insertion. The scanning electron microscope examination of these implants showed intimate contact of mineralized tissue, osteoid, and dense collagen-rich extracellular matrix in the apical third of implants removed after 4 weeks and newly developed bone in the apical third of implants removed after 7 weeks. Conclusions: From our research we concluded that the clinically failed implants supporting mandibular overdentures retained with Bilateral Bar-Attachments showed evidence of bone growth into the pores of the surface at the apical third of the implant. While at the occlusal two thirds of the implant there were no findings indicated the bone growth into Acid-etched Roughened Titanium implant. The present study demonstrated that the bilateral posterior bar attachment may be not considered as a treatment option design regarding preservation of immediately loaded implants used to support mandibular overdenture.

20-

**Peri-Implant Tissue Health Evaluation Of Immediately Loaded Implants Supporting Mandibular Overdenture Retained By Bilateral Prefabricated Bar.**

**Abstract:**
Background: Mandibular implant-retained overdentures solve complete denture wearer problems who complain from poor retention and stability. Immediate loading can have several advantages, as it allows the patient to resume normal masticatory function as quickly as possible after surgery. In addition, splinting of implants with two posterior bilateral bars provide more retention and stability. Recently, the use of pre-fabricated bars reduces time and costs for the dentist, dental technician and the patient.

Purpose
This study aimed to evaluate peri-Implant tissue health evaluation of immediately loaded implants supporting mandibular overdenture retained by bilateral prefabricated bar.

Materials and Methods
Six completely edentulous males were selected for this study. For
each patient, two standardized size; of 13 mm length and 3.6 mm width; screw type implants were surgically inserted in the canine areas and two standardized size of 10 mm length and 3.6 width were inserted in the first molar areas and splinted with two bilateral posterior pre-fabricated bars to retain immediately loaded mandibular overdenture. The tissue health was investigated in the aspects of per-implant probing depth, peri-implant bleeding index, peri-implant plaque index and implant mobility.

Results: In all periods of the present study, the probing depth was found to be less than 3 mm, the plaque accumulation increased significantly at the end of the first three months of the present study then decreased during the second three months, the bleeding on probing showed a slight increase at the end of first three months of study then decreased during the second three months of study and all implants exhibited no mobility three months after insertion, but after six months 41.6% of posterior implants exhibited mobility.

Conclusion: Within limitations of this study, it can be concluded that: (1) Splinting of immediately loaded implants with bilateral prefabricated posterior bar for retaining mandibular overdenture cannot be considered as a successful prosthetic approach for completely edentulous patient. (2) The implants in the posterior region of the mandible cannot be proposed as a promising abutment for supporting mandibular overdenture retained with bilateral prefabricated bar.

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21-

A comparison of mandibular denture base deformation with different impression techniques for implant overdentures.

Purpose: This study aimed to evaluate mandibular denture base deformation along with three impression techniques used for implant retained overdenture.

Materials and methods: Ten edentulous patients (5 males and 5 females) received two implants in the canine region of the mandible and three duplicate mandibular overdentures which were constructed with mucostatic, selective pressure, and definitive pressure impression techniques. Ball abutments and respective gold matrices were used to connect the overdentures to the implants. Six linear strain-gauges were bonded to the lingual polished surface of each duplicate overdenture at midline and implant areas to measure strain during maximal clenching and gum chewing.

Results: The strains recorded at midline were compressive while strains at implant areas were tensile. Clenching recorded significant higher strain when compared to gum chewing for all techniques. The mucostatic technique recorded the highest strain and the definite pressure technique recorded the lowest. There was no significant difference between the strain recorded with mucostatic technique and that registered with selective pressure technique. The highest strain was recorded at the level of ball abutment’s top with the mucostatic technique during clenching.

Conclusion and recommendation: Definite pressure impression technique for implant retained mandibular overdenture is associated with minimal denture deformation during function when compared to mucostatic and selective pressure techniques. Reinforcement of the denture base over the implants may be recommended to increase resistance of fracture when mucostatic or selective pressure impression technique is used.

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22-

Three Design Concepts of Four-Implant Assisted Mandibular Complete
Overdentures: Implant Stability and Marginal Alveolar Bone loss

Background. The rehabilitation of edentulous patients continues to be a major challenge to dentistry. Treating edentulous mandible with implant-assisted complete overdenture is aimed to reduce pain and discomfort, improve function (retention, stability) and stimulate psychosocial well-being.

Purpose. The purpose of this study was to compare three different design-concepts for mandibular complete overdentures assisted by 4-implants regarding the implant stability and marginal alveolar bone loss.

Materials and Methods. Three groups from different design concepts of 4-implant assisted mandibular complete overdentures were inserted: In group A, each mandibular 4-implant assisted overdenture was retained by four solitary ball attachments, in group B, each mandibular 4-implant assisted overdenture was retained by anterior bar and bilateral posterior ball attachments and in group C, each mandibular 4-implant assisted overdenture was retained by two bilateral posterior instant adjusting bars. Implant stability and marginal alveolar bone loss were evaluated at the time of definitive loading (T0) and 6 (T1), 12 (T2) & 18 (T3) months thereafter.

Results. Group C demonstrated the highest PTVs and marginal alveolar bone loss values at all observation times while Group B recorded the lowest values. Posterior implants demonstrated a significant increase in PTVs and marginal alveolar bone loss values than anterior implants.

Conclusions. It is possible to conclude that: (1) Four-implant assisted mandibular complete overdentures retained by anterior bar and bilateral posterior ball attachments provide a better design concept for edentulous patient regarding the implant stability and preservation of peri-implant marginal alveolar bone. (2) Implants inserted in the canine areas provide better stability and less marginal alveolar bone loss than those inserted in the first molar areas regardless the design concept of four-implant assisted mandibular complete overdenture.

DELAYED VERSUS IMMEDIATE LOADING OF IMPLANTS ASSISTING MANDIBULAR BILATERAL DISTAL EXTENSION REMOVABLE PARTIAL DENTURES- BIOCHEMICAL EVALUATION OF PERI-IMPLANT TISSUES

Background: The use of implant assisted removable partial denture (RPD) seems to overcome the numerous problems associated with distal extension removable partial denture (DERPD) in addition to achieving a higher level of patient satisfaction.

Purpose: This study compares between the delayed and immediately loaded implants inserted to assist bilateral distal extension removable partial overdentures (DERPOD) of seven partially edentulous patients.

Materials and Methods: For each patient, two implants were inserted in the second molar areas of mandibular distal extension ridges. At the second stage surgery of delayed loading implant in one side of the arch, the immediately loaded one was inserted in the other side. Suitable healing abutments were screwed into these fixtures to act as definitive supporting
elements for a mandibular DERPD. At 4 days, 3 and 9 months after abutment connection, biochemical evaluation of peri-implant tissues were done by measuring the glycosaminoglycan (GAG) and Chondaratine-4-sulphate (C4S) levels in peri-implant sulcular fluid (PISF). Results: During all intervals of study, the immediately loaded implants showed higher levels of GAG and C4S than the delayed loaded ones. Also there was a significant difference between all intervals of study regarding the levels of GAG and C4S in both types of loading. Conclusions: Despite the limitations of this study, it is possible to conclude that: (1) Delayed loading implants inserted to assist DERPD may be considered better than their immediate loading regarding the biochemical evaluation of peri-implant tissues. (2) Regardless the loading protocol, the implant-assisting mandibular DERPD can be considered as a promising prosthetic option for partially edentulous patients.

Two implants retained versus soft liner retained maxillary obturators in maxillary edentulous patients with unilateral maxillary defect (Comparison of retention)

ABSTRACT
Aim: To evaluate the influence of placement two implants on the retention of maxillary obturator.
One implant was placed on the resected and one in the non‑resected side of the patient. Materials and Methods: Twenty maxillary edentulous patients of both sexes, aged 45-70 years, with unilateral maxillary defects were selected for the study. The patients had completely dentulous mandibular arch. Two implants were placed for each patient: One in the first premolar region of the healthy side and one in the area of second molar of the defect side. For all patients, retention was measured before superstructure placement for the two maxillary osseointegrated implants using soft liner alone, after placement of ball attachments without soft liner, and after placement of superstructure with soft liner. All measures of retention were performed after 3 months of obturator insertion using forcmeter gauge. Results: The results of this study showed that there was a significant difference when using two implants with soft liner in comparison with soft liner or implants alone, with P < 0.05 using one‑way analysis of variance (ANOVA) test. Conclusion: The use of only two strategically placed implants in the remaining bone of the resected
and non-resected side of unilateral maxillary defect can significantly affect obturator retention.