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شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



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شبكة المعلومات الجامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغييرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



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بعض الوثائق الأصلية تالفة



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بالرسالة صفحات

لم ترد بالأصل



INTRODUCTION

The traditional treatment option for edentulous patient is a complete removable maxillary and mandibular dentures. However, such prostheses, specially the mandibular one, have well-known and documented problems like less stability and retention. This is affected by and attributed to the height and shape of the mandibular ridge because of alveolar bone resorption occur over time, making the previously stable dentures become ill-fitted.

Subsequent bone resorption and loss leads to a decrease in the size of the denture bearing area, there by reducing denture stability which causes less retention of the lower denture, difficulties with eating, speech and altered facial appearance.

Implant-retained overdenture offers much functional and psychological advantages for all edentulous patients. Implant supported over dentures enhances masticatory function and retention. It reduces trauma to the underlying tissues, thereby reducing the rate of bone loss. It maintains occlusion and vertical dimension and achieves more patient tolerance. Additionally, a direct relationship has been documented between prosthesis retention, stability and patient satisfaction.

It is known that tooth extraction induces crestal bone resorption and loss about 24% after a five months period, changing severely the form of hard and soft tissues.^(1,2)

To preserve and maintain the alveolar bone level from the collapse of healing events, immediate insertion of dental implants into freshly extracted sockets and socket preservation techniques were suggested with a high success rate and well documented ^(3,4)

Several principles were suggested to minimize and decrease peri-implant bone loss among these, is the use of the socket shield technique as a partial extraction therapy (PET) along with immediate implant placement (IIP). The tooth fragment consisted of a small portion up to 0.5 mm wide piece of dentine. On its buccal side, the tooth part was still attached to the buccal plate of bone by a physiologic periodontal ligament. The implant is placed lingual to that fragment.

Where the implant was placed in contact with the fragment, newly formed cementum was seen on the implant surface. Several studies have demonstrated that socket shield technique as a partial extraction therapy (PET) along with immediate implant placement (IIP) is a reliable technique and survival rate ranging between 95 % - 100% was reported. ^(5,6)

Although delayed implant placement was the traditional method, socket shield technique as a partial extraction therapy (PET) along with immediate implant placement (IIP) and their effect on peri-implant bone loss is the point of concern in clinical studies in the late years ⁽⁷⁾.

REVIEW OF LITERATURE

Edentulism

Loss of all permanent teeth is defined as Edentulism. Edentulism is due to various combinations of financial, cultural issues and dental diseases. ⁽⁸⁾

An intimate direct relationship exists between teeth and alveolar process. The lack of physio-mechanical stimulation resulting from the loss of teeth in the edentulous state results in loss of the bone. This is accompanied by a decrease in the bone trabeculae and bone quality (density) in the area in addition to loss of bone width followed by loss in bone height. ⁽⁸⁾

The reduction in anterior height of the lower residual ridge during the twenty five year complete denture wearers would account to 9 to 10 mm whereas in the maxilla the reduction may only be 2.5 to 3 mm. The Continued residual ridge resorption results in loss retention, support and stability. ⁽⁸⁾

As bone loss occurs in width and height respectively, the attached gingiva gradually decreases resulting in a thin area of attached tissue that may be absent over the advanced atrophic mandible. This makes the tissue susceptible to abrasions caused by the overlying prosthesis. ⁽⁸⁾

The tongue of the patient with edentulous ridges often enlarges to accommodate the increase in space formerly

occupied by teeth. Also the tongue is used to limit the movement of the removable prostheses and takes a more active role in the masticatory process. ⁽⁹⁾

The impact of loss of retention and stability affects the quality of the prosthesis, for example complete denture wearers needed an average four times, seven times, and even eight times the number of chewing strokes of dentulous persons to achieve the same degree of pulverization. ⁽⁹⁾

Treatment modalities for Rehabilitation of Completely edentulous case:

i. Complete Denture

For many years and decades complete tissue-supported removable prostheses have been regarded as the treatment of choice for edentulous patients. ⁽¹⁰⁾

The ideal denture supporting ridge should have adequate bone height with a flat crest and nearly parallel sides covered by firmly attached fibrous mucoperiosteum, with adequate buccal and lingual sulci. It should be devoid of any undercuts or bony protuberances, muscle fibers or frenulae that will interfere with the periphery soft tissue folds, hypertrophies and neoplasms. ⁽¹¹⁾

Pre – prosthetic surgical techniques were used to reshape the ridge shape in order to give a superior denture supporting area that is suitable for the future prosthesis. Moreover, they

provide sufficient bone volume for placement of dental implants at the most optimal positions. Vestibuloplasty, ridge augmentation by autogenous bone graft or by alloplastic material, vertical alveolar ridge distraction and guided tissue regeneration were introduced too.⁽¹¹⁾

Despite the fact that complete dentures are known to have poor masticatory capability. The most common complaint is the 'loosening' of the dentures which is due to the continual resorption of the alveolar ridge. Moreover, patients complain of intolerable mucosa, pain, difficulties with eating and speech, loss of soft-tissue support, and altered facial appearance.⁽¹²⁾

ii. Over denture

An over denture is "removable partial or complete that covers and rests on one or more remaining natural teeth, roots or dental implants". Another definition is "A prosthesis that covers and is partially supported by natural teeth, teeth roots or dental implants".⁽⁸⁾ Over dentures are classified according to type of support into:

a) Tooth Supported Over denture

It is a therapeutic modality for improving the oral function in elderly edentulous patients with the use of over dentures.⁽⁸⁾

Tooth supported over dentures rely on the remaining teeth to support the prosthesis. The location of these natural abutment teeth is highly variable, and they are often compromised from bone loss associated with periodontal disease.⁽⁸⁾

Tooth supported over dentures have golden advantage of conservation of natural teeth and reduction of residual ridge atrophy. Retention, support and stability of the over denture also is better in comparing to a conventional complete denture. In addition, sensory feedback of the periodontal mechano-receptors is maintained and masticatory performance may be enhanced.⁽⁸⁾

Disadvantages of the tooth supported over denture treatment include the need for further extra root canal treatment, which requires additional time and increases costs. The over denture not only prevents natural gingival stimulation and cleaning, but also promotes accumulation of plaque as well as being a source of irritation to the gingiva; leading to periodontal breakdown. Bony undercuts also present a problem compromising the peripheral seal (either due to blocking out of the undercut, or shortening the flange), as well as the esthetics due to over contoured or foreshortened flange.^(8,13)

b) Implant supported over denture

The implant retained over denture has been described as the standard option for the restoration of the edentulous mandibular arch. Implant-supported prostheses are today often used in rehabilitation of partially or totally edentulous patients.^(10,14)

For an implant over denture, the implants may be placed in a specific, planned sites, and their number should be determined.

In addition, the over denture implant abutments are healthy, rigid, well accepted and provide excellent support system.⁽¹⁵⁾

- ***Advantage of Implant supported over denture***

The patient will gain more advantages from implant supported over denture. The mandibular complete denture wearer often suffer from loss of retention during function and speech. The retention of an implant over denture is greatly improved compared with conventional denture. Retention of the prosthesis is enhanced by the use of mechanical type of attachment with no need for maximum soft tissue coverage and denture extension. This is very important for new denture wearers, patients with tori or bony exostoses or severely gaggers.^(13,66)

Increased stability offered by implant over denture will allow the patient to consistently reproduce a determined centric occlusion. Soft tissue abrasions and accelerated bone loss are more symptomatic due to horizontal movement of the prosthesis under lateral forces. An implant over denture showed decreased lateral movement and direct more longitudinal forces.⁽¹⁶⁾

The annoying clicking sound elicited by teeth contact during denture movement is prevented by the enhanced stability and retention offered by the implant over denture.⁽¹⁶⁾

After Rehabilitation with implant supported over dentures, the patients show an improved ability to comminute hard and tough food. The maximum bite force and the chewing activity are increased. Moreover, the duration, number of the chewing cycles are reduced and significant improvement in masticatory efficiency occur.⁽¹⁷⁾

After extraction of mandibular teeth, an average of 4mm vertical bone loss occurs during the first year, and continues in smaller values over the next 10 years. The bone under an implant over denture may resorb as little as 0.6 mm vertically over 6 years, and long term resorption may remain at less than 0.1 mm per year.⁽¹⁸⁾

- *Disadvantages of implant supported over denture*

Food impaction under the denture and food debris trap against implants, bars or attachments because of the shortened flanges is considered by some patients as a very annoying problem.⁽¹⁹⁾

The implant supported or retained over denture is difficult to fabricate in cases presented with insufficient inter-arch space to give the needed space for attachment, denture teeth and adequate bulk of acrylic denture to resist fracture. If a space less than 12 mm from soft tissue to occlusal plane is not available, an osteoplasty is needed to create the needed space; otherwise a fixed prosthesis will be more preferable.⁽²⁰⁾

An implant retained over denture usually needs more maintenance than the fixed one due to the wear of the O-ring and should be replaced regularly, and relining to overcome soft tissue support changes should be done. Over-denture wearers often have greater long-term costs than those with fixed restorations.⁽²⁰⁾

Factors affecting the success of Implants

The criteria of success in implant dentistry remain complex. The suggested criteria for implant success are, an individual, unattached implant is immobile when it is tested clinically; no evidence of peri-implant radiolucency demonstrated radiographically and vertical bone loss is less than 0.2 mm annually following the first year service of the

implant. Individual implant performance is characterized by absence of persistent or irreversible signs and symptoms such as pain, infection, paraesthesia, or violation of other vital structure as the mandibular canal, maxillary sinus or floor of the nasal cavity.^(19,21)

A success rate of 88% at the end of a 5- year observation period and 80% at the end of a 10- year period are minimum criteria of success.⁽²¹⁾

The Main predictors for implant success are the quality and quantity of bone, the patient's age, the dentist's experience, site of implant placement, length of the implant, axial loading and oral hygiene maintenance. Primary predictors for implant failure are poor bone density, chronic periodontitis, some systemic diseases, smoking, infection, advanced age, short implants, bruxism and clenching.

Inappropriate prosthesis design also contributes to implant failure.^(19, 21)

A. Bone Support:

The Available bone quantity and density in the edentulous site are the primary determining factors in predicting any implant case success.⁽²²⁾

- ***Bone quantity (Available bone):***