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RESEARCH ARTICLE

EVALUATION OF PATIENT SATISFACTION IN PRECISION ATTACHMENT-SUPPORTED OVERDENTURES AND CONVENTIONAL OVERDENTURES THROUGH VERBAL RATING SYSTEM

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Abstract

Teeth loss is a traumatic experience. It disturbs the total integrity of the masticatory system. Its successful rehabilitation should address a range of biomechanical problems, tolerances, and perceptions. Precision attachment-supported over Dentures with two teeth retained in canine region is a predictable treatment option in edentulous mandible rather than conventional complete denture as it offers increased retention, stability, comfort, bone preservation, maintenance of proproception and patient compliance. This study was carried out to determine patient satisfaction with precision attachment-supported overdentures and conventional overdenture and its impact on the treatment outcome.

Material & Methods: Twenty(20) edentulous patients were randomly divided into two groups to receive precision attachment -supported overdentures and conventional overdenture in mandibular arch. Questionnaires were given to the patient after treatment at 6 and 12months interval. Data collected were statistically analyzed.

Results: Results obtained from this study show that patients with precision attachment -supported overdentures were more satisfied with the treatment outcome, and there was a significant difference in patient satisfaction between the two groups.

Introduction:-

Edentulism is on its decline since the last decades, but however, it poses a substantial health problem in developing countries[1-3]. Edentulism affects individuals' physiological, biological, social, and psychological state[4]. It causes functional deficiency in speech, mastication, and esthetics.[5] Complete denture patients are generally unsatisfied due to the movement of the denture which may be related to resiliency of the supporting tissues or inherent instability of dentures during functional and parafunctional movements[6] . Inspite of rapid development and success rate in the field of implantology, preservation of natural teeth or roots is more desirable which supports Devan's dictum "Perpetual preservation of what remains is more important than the meticulous replacement of what is missing".

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According to GPT 9, overdenture is a removable partial or complete denture that covers and rests on one or more remaining natural teeth, roots, and/or dental implants; a dental prosthesis that covers and is partially supported by natural teeth, tooth roots, and/or dental implants

Overdenture increases the retention, stability and support, improves the masticatory efficiency, preserves the alveolar bone and muscular patterns[7] and preserves sensory receptors within the periodontal ligament which increases manipulative skills in handling the denture[8] . Retention and stability of overdentures can be improved by attachments or magnets. Attachments for overdentures are classified as studs or bars which can be rigid or resilient. Stud attachments (Rhein 83 srl, Bologna, Italy) consist of matrix (a sphere with a flat head) available in preformed plastic patterns which cast to copings on abutments and patrix (Elastic rubbers) made of nylon and Teflon available in different colours corresponding to different retention degrees, both in normal and micro sizes. Several studies investigated factors that may affect patients' satisfaction with their complete dentures, such as denture technical quality, condition of the residual ridges, and patients' gender, age, previous denture experience, and personality[5,9-11] Emotional and psychological factors also play an important role in acceptance of complete dentures[4,5].

Even though quality standards in denture fabrication are in practice, they do not address patient-centered factors and patients' opinion on treatment outcome. Recent studies in patient satisfaction show a shift in health care from "need-based to desire-based". Various factors like gender, age, and education level affect patient satisfaction[12,13]. Patient satisfaction in prosthetic dentistry is a multidimensional concept, as is patient's perception of dental care[14].

Scientific literature is sparse comparing patient satisfaction in response to precision attachment-supported overdentures and conventional overdentures. Therefore, this study was carried to evaluate the treatment outcomes through patient satisfaction for completely edentulous patients rehabilitated through precision attachment -supported mandibular overdenture and conventional overdentures

Materials And Methods:-

A total of Twenty (20) edentulous patients were divided into two equal groups, one group to receive precision attachment -supported overdenture(10) in mandibular arch and other group to receive a conventional denture(10) in the same arch. The inclusion criteria were edentulous patients in whom at least one natural teeth were present (preferably canine) in the canine region. The patients selected were non-smokers, free from any systemic disease, non-bruxers, with sufficient intra occlusal space present, and prepared to comply with the follow-up. Root canal treatment for the retained teeth were done followed by decoronation of the selected teeth then the subjects were divided into two groups viz

Group I &
Group II
In **Group I :-**
Prepration of post space was done . After preparing the post space, impressions of the post space was registered with addition Silicone using indirect technique. Prefabricated plastic patterns of patrix(male part of attachment) were attached to the waxed up copings on abutments using parallelometer and were casted copings were checked for the fit and accuracy ,than these metal copings with casted attachments were luted using type I glass ionomer cement ,after that matrix (female part of attachment) were attached to the patrix and secondary impression using addition silicone light body was recorded, after that maxillomandibular relation was recorded, try-in was done and overdentures were fabricated.

In **Group II** :-
Denture was constructed over retained root canal treated teeth after fabrication of metal coping.
Dentures were delivered after necessary occlusal error correction. Post insertion instructions were given and patient was recalled after 6 and 12 months interval to evaluate the abutments and periodontal tissues.

Evaluation of Patient Satisfaction:-
General satisfaction, ability to masticate, and esthetic outcome of the prostheses were recorded and quantified with a verbal rating scale at 6 and 12 months following insertion of precision attachment-supported overdenture and conventional overdenture.

Results:-

This study was taken up to evaluate the treatment outcomes of completely edentulous patients rehabilitated With precision attachment-supported mandibular overdenture and conventional overdenture. When we analyzed the results of evaluation of patient satisfaction, there was a significant difference in patient satisfaction between precision attachment-supported dentures and conventional dentures.

Table 1:- Questionnaire – questions about satisfaction level with the precision attachment-supported prosthesis and conventional mandibular overdenture prosthesis.

S.no	Question	0	1	2	3	4	5
1	How do you feel about the pleasure you get from food, compared with the time when you had your natural teeth?						
2	With respect to chewing, how satisfied are you with your dentures?						
3	With respect to appearance, how satisfied are you with your dentures?						
4	With respect to how comfortable your dentures are, how satisfied are you?						
5	With respect to being self-assured and self-conscious in routine day-to-day life, how satisfied are you with your dentures?						
6	With respect to your social and affective relationship, how satisfied are you with your oral conditions?						
7	With respect to your speech are you satisfied with you present dentures?						

Patient Satisfaction criteria:-

Patient satisfaction	Score
Excellent	11-15
Good	06-10
Satisfactory	1-5
Not satisfactory	0

Maximum score 15
Minimum score 0

Table 2:- Patient satisfaction recorded after 6 months of prosthesis delivery.

	Score			
Type of prosthesis	Excellent	Good	Satisfactory	Not satisfactory
Precision attachment – supported overdenture	6	3	1	0
Conventional overdenture	5	2	1	2

Table 3:- patient satisfaction recorded after 12 months of prosthesis delivery.

	Score			
Type of prosthesis	Excellent	Good	Satisfactory	Not Satisfactory
Precision attachment – supported overdenture	7	2	1	0
Conventional overdenture	4	2	1	3

Discussion:-

The edentulous state disturbs the integrity of the masticatory system with adverse functional, esthetic and psychological sequelae[15]. When a patient present with few remaining teeth not ideally located to support fixed partial denture or removable partial denture, precision attachment retained overdenture could be a better option. Other options of treatment could be magnetic retained overdentures or implant supported overdenture.

Overdenture helps reduce shrinkage of surrounding bone, reduces pressure on the alveolar ridge and proprioception is maintained[16]. The abutment selection plays a vital role in the prognosis of overdentures. Anterior teeth have less chances of formation of infra bony defects or craters because the cortical plate and the alveolar housing are often fused without spongy bone in between[17]. Amongst anteriors, canines are the most important proprioceptive organs, the shape and strategic position and the larger periodontal attachment area make them ideal abutments[18]. Rissin *et al*. in 1978 compared masticatory performance in patients with natural dentition, complete denture and over denture. They found that the over-denture patients had a chewing efficiency one-third higher than the complete denture patients[19].

Overdenture with attachments can redirect occlusal forces away from weak supporting abutments and onto a soft tissue or redirect occlusal forces toward stronger abutments thereby resulting in superior retention[20].

Sufficient scientific literature supports the claim that Precision attachment-supported overdenture effectively rehabilitates completely edentulous patients with improved retention, stability, patient satisfaction, and masticatory capacity.

Conclusion:-

Precision attachment retained overdenture provide a better treatment modality in preventive prosthodontics for edentulous patient if the patient is properly motivated regarding the maintenance of oral hygiene.This scientific paper shows that patients with precision attachment retained overdenture patients were more satisfied with respect to retention, stability, appearance and masticatory efficiency than patients with conventional overdenture.

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