A Longitudinal Study on the Effects of Overdenture with the Two Types of Attachments on the Bone around the Two Implant

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Abstract: Objective: This study aimed to compare the effects of overdenture with the two types of attachments on the bone surrounds the two implants. **Materials and Methods:** In this study Sixty patients, thirty males and thirty females, the patient were selected for constriction the overdenture upon the two implant on canine region after surgical operation done sixty patients classified into two groups thirty patients received stud supers traction and thirty patients received magmatic supers traction the cases were evaluated after 3, 6, 9, and 12 months within the bone level. The collected data were analyzed by Statistical Package for Social Sciences (SPSS, version 20). **Results:** Result found that the magnetic type good than the study. There was significant difference in group 1 increased by the time after 3m,6m, 9, 12m in group 2 significant different there was no significant different by the time after 3m,6m, 9, 12m .super stricture by the stud in group1high significant different than the super stricture by the magnetic in group2 by the time. **Conclusion:** Bone level loss increase in supers traction contracted by stud implant than the supers traction contracted by the magnetic implant contracted overdenture.
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Keywords: attachment, over-denture.

1. Introduction:

Bone tissue reaction around implants placed:

The present study was done to assess bone tissue changes that happened around implant at which the peripheral level of bone backing at apparatus establishment was distinctive at buccal and lingual surfaces; it was to investigate bone tissue modifications that happen amid capacity of inserts at which the minimal level of bone backing at installation establishment was diverse at buccal and lingual surfaces (1). The authors concluded that the newly formed periodontal tissue and the pristine tissue differed in several aspects. Thus, the healed in comparison to the pristine furcations presented less mineralized bone (lamellar bone), had a larger bone marrow space, a thicker cementum, and fewer collagen fibers that inserted in cementum and bone. The process of wound healing during GTR has been analysed with respect to(1) the location of dividing cells within the wound area(2)S the expression of extracellular matrix components, and (3) some cellular events during the 1st 5 days and 9 weeks of healing. Limited information is, however, available concerning the morphogenesis of the novel periodontal tissues. (2) Periodontally-compromised patients often present with severely resorbed alveolar processes. During the preparation of an implant bed in such a patient, dehiscence or fenestration defects frequently occur in the narrow ridge, which may jeopardize mechanical stability of the fixture. In order to overcome this problem and to rebuild a ridge with equate bone volume, augmentation procedures are often used. Such techniques include the use of barrier membrane sand/or grIFT.

The outcome of such procedures depends on the dimension and configuration of the ridge defect and on the technique used for augmentation. Thus, procedures used to enhance large, ‘‘open’’, i.e., non-contained defects in the alveolar ridge seem to be less predictable than techniques utilized to close small and/or selfcontained defects Biomaterials are often used as grafts in augmentation procedures. One such material is Bio-OssA, a deproteinized natural bovine cancellous bone mineral. placed Bio- OssA in a large, self-contained defect inthe mandible of the beagle dog. They reported that Bio-OssA worked as an osteoconductive material and that after 3 to 7 months of healing: (i) the graft particles were surrounded and partly replacedby bone; (ii) the ridge defect had been eliminated. Less optimal who used Bio-OssA as an onlay material to augment severely reduced alveolar ridges in man. In a recent experiment from our laboratory a large, buccally open, 1-wall defect was prepared in an edentulous portion of the mandible in beagle dogs. 8 months later, fixtures were placed in the ‘deficient’’ridge in such a way that the lingua portion of the implant was entirely invested in bone, while the buccal-approximal and marginal portion had nobone contact. After 3 months of healing, the

fixtures were uncovered andabutment connection was performed(3,4)

Ridge modifications after implant settlement in new extraction sockets:

The healing of an extraction socket following tooth removal was studied in different animal models The experiments demonstrated that during the process of healing a series of events occurred, such as (i) formation and maturation of a blood clot, (ii) infiltration of fibroblast to replace the coagulum, and eventually (iii) establishment of a provisional matrix (PCT) that allowed for bone tissue formation.

Unfortunately, most of the studies referred to were of comparatively short duration and, thus, included limited information related to later phases of socket healing including the process of remodeling of the newly formed bone tissue in various parts of the alveolus. The formation of soft and hard tissue following tooth extraction was also studied in specimens obtained from humans.

The regularly ‘‘the time sequence of tissue restoration in human extraction wounds’’ – reported on new tissue formation in fresh extraction sockets in human volunteers. In this study, following the removal of a tooth, socket healing was monitored and soft tissue biopsies were harvested from the extraction sites after varying intervals; from 48 h to 32 days. Since the tissue sampled was not demineralized prior to sectioning; only events that preceded hard tissue formation could have been analyzed. From his observations, concluded that a blood clot formed within the socket soon after the removal of a tooth.

This clot was replaced first by a granulation tissue (GT) and subsequently by an osteoid. The illustrations, , however, described only tissues from the marginal portions of the socket.(5,6,7,8) Checked dimensional modifications had happened in the edentulous edge following 3 months of mending after the extraction of the distal base of mandibular premolars. The arrangement of an insert in the new extraction site clearly neglected to keep the renovating that happened in the dividers of the attachment.

The subsequent stature of the buccal and lingual dividers at 3 months was comparative at inserts and edentulous destinations and vertical bone misfortune was more purported at the buccal than at the lingual part of the edge. It is proposed that the resorption of the attachment dividers that happens taking after tooth evacuation must be considered in conjunction with insert situation in new extraction attachment .(9,10,11,12)

The buccal modeling and bone walls lingual of new extraction areas after implant installation:

Implant establishment in the socket. The negligible crevice that was available between the implant and the dividers of the attachment at implantation vanished as a consequence of bone filling and resorption of the bone top. The demonstrating in the minimal deformity locale was joined by checked lessening of the measurements of both the fragile buccal hard tissue changes happened amid mending after tooth extraction and the more extensive lingual bone divider. Bone misfortune at molar locales was more claimed than at the premolar areas. Insert position neglected to protect the hard tissue measurement of the edge taking after tooth extraction. The buccal and the lingual bone dividers were resorbed. At the buccal viewpoint, this brought about some negligible loss of osseointegration (13,14,15,16).

Ridge modifications after tooth extraction with and without flap rise:

Authors stated that ‘flapless immediate implant surgery’ produced somewhat less buccal bone plate resorption than when mucosal flaps were elevated in conjunction with tooth extraction and implant installation (17). It is well established in the periodontal literature that the elevation of a full thickness flap (muco-periostal flap) to gain access to the root surface for debridement may cause some loss of attachment and resorption of bone The extent of reduction of the supporting bone is apparently related to the thickness of the bone at the surgical site .Thus, the thinner the bone wall, the greater becomes the crestal resorption. Ina recent study in the beagle dog from our laboratory it was demonstrated that flap elevation without intentional root surface instrumentation caused about 1-mm vertical loss of the thin buccal wall while in the thick lingual wall the corresponding loss was only (18,19,20,21,22,23)

B-tricalcium phosphate in the initial stage of socket curing:

The present experiment demonstrated that the first healing of an extraction socket that had been implanted with b-TCPinvolved (i) the creation of a coagulum that was (ii) switched with granulation tissue and a conditional environment in which (iii) merged bone could be formed. The biomaterial was apparently involved in this process. Thus, at various intervals of healing the surfaces of the TCP particles were occupied by large active multinucleated cells that most likely removed calcium and phosphate ions from the small granules of the biomaterial. Moreover, the permeability of the TCP elements was firstly packed with erythrocytes that were subsequently replaced with mesenchymal tissue (including cells and vessels) and finally with mineralized bone. Some of the implant material was also seemingly attacked' by mesenchymal and provocative cells and crumbled.

Along these lines, little layer bound granules showed up in the granulation tissue and the temporary grid. Not occasionally, osteoclasts were found on or in close nearness to little totals of such granules. During the time spent hard tissue arrangement, somewhat mineralized (changed) TCP particles got to be encompassed by edges of woven bone. Osteoclasts In specimens representing 1, 2 and 4 weeks of healing, TRAP-positive multinucleated cells were frequently observed to reside on the surface as well as between the granules (vacuoles) of TCP particles present in the granulation tissue as well as in the provisional matrix in various parts of the socket. Their cytoplasm was often filled with vesicles, which may indicate that the osteoclasts were in the process of actively removing calcium and phosphate ions from the biomaterial. The hypothesis that osteoclasts may be engaged in the resorption of b-TCP is in agreement with the findings previously reported from studies in both humans and animals sampled after 2 weeks of healing.(Gaasbeek et al., 2005(29) sampled biopsies from patients who had been treated with open wedge osteotomies and in whom the hard tissue defects had been grafted with a b-TCP bone substitute. The authors observed that 'multinuclear TRAP-positive osteoclasts' appeared at the site of TCP particles and that they evidently resorbed the biomaterial. Kondo et al. (2005) implanted highly purified b-TCP in dorsal muscles of dogs to stimulate heterotropic.(24,25,26,27,28,29,30) Studies in human and laboratory animals demonstrated that following tooth extraction the alveolar process will undergo pronounced alteration; the bundle bone will gradually disappear from the socket walls and the reduced edentulous site will eventually be occupied by trabeculae of lamellar bone and bone marrow (31).

Studies in people and animals have demonstrated that taking after tooth evacuation (loss), the alveolar edge turns out to be uniquely decreased. Endeavors made to neutralize such edge decrease by introducing embeds in the crisp extraction attachments were not effective, while attachment uniting with anorganic cow-like bone mineral anticipated edge constriction. To look at whether joining of the alveolar attachment with the utilization of chips of autologous bone may permit edge protection taking after tooth extraction, the distal foundations of the third and fourth mandibular premolars were evacuated. The attachments in the privilege or the left jaw quadrant were joined with either anorganic ox-like bone or with chips of autologous bone gathered from the buccal bone plate. Following 3 months of recuperating, biopsies of the test locales were examined, arranged for buccal–lingual ground segments and inspected regarding size and sythesis. It was watched that most of the autologous bone chips amid mending had been resorbed and that the joining obviously did not meddle with attachment recuperating or procedures that brought about edge resorption. Autologous bone chips put in the new extraction attachment will (i) neither animate nor hinder new bone arrangement and (ii) not forestall edge resorption that happens amid recuperating after tooth extraction (32,33,34,35). Early implant placement after a soft tissue healing period of 4 to 8 weeks is a valuable treatment alternative. The main objective of this approach is to obtain an intact mucosa at the future implant site to allow a predictable contour augmentation on the facial aspect.13 Contour augmentation uand low-substitution bone filler is considered important for the esthetic outcome because it compensates for ridge alterations after tooth extraction. These alterations are a physiologic tissue reaction after tooth extraction because of the interruption of the blood supply of the bundle bone through blood vessels of the periodontal ligament.14

At present, the concept of early implant placement is only documented with short- to midterm studies showing favorable esthetic outcomes on the facial aspect with a low risk of mucosal recession. 15-18. The purpose of the present prospective study is to follow up on the 12-month results of a case series study with 20 consecutive patients15 and to evaluate the stability of contour augmentation and esthetic outcomes 3 years after restoration (36, 37). The present experiment aimed to assess alveolar ridge alterations that had occurred 6 months after tooth extraction with or without flap elevation.

2. Materials and Methods:

Sixty patients, thirty males and thirty females, the patient were selected according to the following criteria; 1) aged between 40 and 65 years ,2) the patient were free from any systemic diseases 3) all patients having fully edentulous maxillary ridge and edentulous mandibles were renewed with an implant-supported overdenture (two implants in the canine reigon), 4) the patients with good oral hygiene. The screw-type osseointegrated implants were placed, 5) patient shaving angles class1 ridge relation shape with sufficient interridge space to receive or constriction the overdenture upon the two implant on canine region after surgical operation done sixty patients classified into two groups thirty patients received stud supers traction and thirty patients received magmatic supers traction the cases will be evaluated after 3 m, 6m,9m,12m within the bone level. Comparing the bony level by digital X RAY attached by computer program

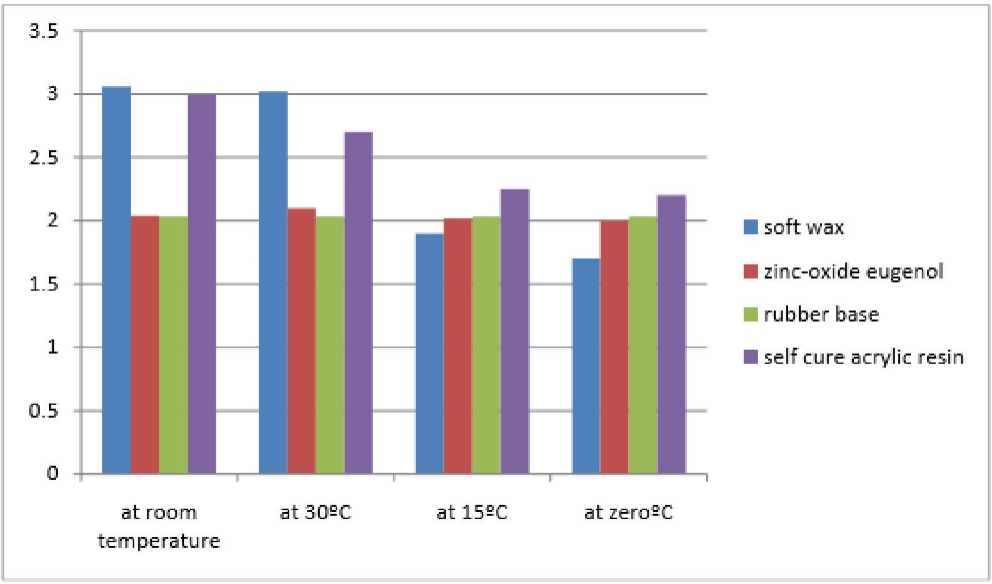
3. Results:

From the table (1), fig (1) significant different in group 1increased by the time after 3m,6m, 9, 12m in group 2 significant different there was no significant different by the time after 3m,6m, 9, 12m .super stricture by the stud in group1high significant different than the super stricture by the magnetic in group2 by the time.

Tabe (1): Clinical evaluation of the bone level for the two groups of the supers traction of the overdenture at the different times.

Bony loss	**Group 1 with the stud superstructure**				p-value
	3M Mean ±SD	6M Mean ±SD	9M Mean ±SD	12M Mean ±SD	0.01
	1.47±0.39	1.47±0.39	1.50±0.40	1.60±0.42	
	Group 2 with the magnetic				p-value
	3M	6M	9M	12M	0.05
	1.63±0.30	1.63±0.30	1.64±0.31	1.65±0.32	

High significantly different at p[o.o1 significantly different at p[o.o5



Fig(1)mean of the bone level for two groups(group(1)stud and group (2) magnatic

4. Discussion:

The present examination was done to study some tissue responses around implants that were set in an edentulous edge which had been enlarged with deproteinized regular ox-like cancellous bone mineral. In 4 male beagle puppies, the premolars in the right half of the mandible were removed and an expansive buccal edge deformity was made by mechanical means. The bone plate at the lingual portion of the inadequacy was left in place. After 5 months, the distal 2/3 of the imperfection range was expanded with Bio-OssA mixed with a fibrin sealer (TisseelA, Immuno AG, Vienna, Austria). After 3months of mending, 3 installations (Astra Tech AB, Mo¨ lndal, Sweden; TiO-impact; 8à3.5mm) were introduced in the mandible; 2 were set in the enlarged bit and 1 was set in the non-increased part of the imperfection. After a recuperating time of 3 months, projection association was performed and a plaque control periodinitiated. After 4 months, the mutts were relinquished and every insert area was analyzed.

The tissue tests were got dried out, inserted in plastic, separated in the bucco-lingual plane and analyzed in the light magnifying lens. It was watched that osseointegration neglected to jump out at insert surfaces inside of an alveolar edge divide beforehand expanded with Bio-OssA. In the increased bit of the peak, the joining particles were isolated from the host tissue and in addition from the embed by a well-defined connective tissue container. In spite of the fact that the lingual part of all installations were in connection with hard tissue at the season of establishment, following 4 months of capacity, a profound vertical bone abandon much of the time had framed at the lingual surface of the inserts (1,4). The present analysis showed that stamped dimensional

alterations had happened in the edentulous edge of canines following 3 months of recuperating after the extraction of the distal base of mandibular premolars. The arrangement of an insert in the new extraction site clearly neglected to keep the re-demonstrating that happened in the dividers of the attachment. The subsequent tallness of the buccal and lingual dividers at 3 months was comparative at inserts and edentulous destinations and the vertical bone level change was more affirmed at the buccal than at the lingual part of the edge. It is proposed that the resorption of the attachment dividers that happens taking after tooth evacuation must be considered in conjunction with insert position in crisp extraction attachments (11,12).

The present study demonstrated that noticeable hard tissue changes happened during healing after tooth extraction and implant installation in a new extraction socket. The borderline gap that was existing between the implant and the walls of the socket at implantation as a result of bone fill and resorption of the crest areas of the hard tissue walls. The modeling in the marginal defect region was attended with marked attenuation of the dimensions of the buccal and lingual bone walls of the implant sites. Thus, implant placement evidently failed to reserve the hard tissue aspect of the ridge after tooth extraction. Size of marginal defect The extraction socket of the distal root of the mandibular third premolars and first molars was selected for implant installation as the size of the teeth and the dimensions of the ridge of the two sites are markedly different .Implants of the same size (diameter 4.1mm and length 8mm) were placed in sockets of varying dimensions. As a result, the width and depth of the marginal defect (gap) between the implant and the walls of the socket were considerably larger in the molar than in the premolar locations. In the biopsy material, it was noted that the smaller (o0.3mm wide) gaps at the premolar sites had been resolved already after 4 weeks of healing while the larger (1–1.3mm) horizontal defects in the molarsites were completely resolved first in the 12-week specimens. These findings are in agreement with data presented by Botticelliet al. (2003a, 2003b) from experiments in the dog. They studied bone apposition in 1mm wide marginal defects prepared around implants placed in a fully healed ridge. The imperfections were halfway mended through appositional bone arrangement after1 and 2 months yet totally determined with legitimate bone fill and issue that has yet to be resolved contact first after 4 months.(14,15,16,17,18) Tooth misfortune (extraction) brought about checked modifications of the edge. The extent of the alveolar procedure was diminished.

The method utilized for tooth extraction – flapless or taking after fold height – evidently did not impact the all the more long haul result of mending (23). The early recuperating of an extraction attachment that had been joined with b-TCP included (i) the development of a coagulum that was (ii) supplanted with granulation tissue and a temporary lattice in which (iii) woven bone could shape. In this procedure the biomaterial was evidently included.nThe alveolar process undergoes pronounced resorption following the loss of teeth (30).

Conclusion:

Bone level loss increase in supers traction contracted by stud implant than the supers traction contracted by the magnetic implant contracted overdenture.

Competing on interest:

I declare that this study is one of my own works. It was not submitted to any other journal. I also declare that I have no competing interests related to this study.

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