

Preprosthetic Surgery And Its Cureent Trends : A Review

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ABSTRACT: -

The aim of pre-prosthetic surgery is to prepare the hard and soft tissues for a befitting prosthesis^[1]. This will help in restoring the function of the jaws, preserve and improve jaw structure and improves the esthetic outcome. Pre-prosthetic surgery must begin with thorough history and examination of the patient^[2], since there are many contraindications in patient with systemic diseases. Attention should be given to the laboratory tests to determine the degree of bone resorption. Every attention should be taken in restoring the hard and soft tissues of denture bearing areas^[2]. The procedures include smoothening and reshaping, removal of excess bones and gums in denture bearing area. The prime determining factor for the success of pre-prosthetic surgery is the condition of denture bearing tissues^[3]. It should be noted that the hard and soft tissue should be in a state that the patient can wear denture without any hindrance^[3]. This article deals about the various pre-prosthetic procedures and its recent advances.

Key Words: Pre prosthetic, Alveoloplasty , Ridge augmentation, Vestibuloplasty

INTRODUCTION: -

Pre prosthetic surgery is defined as the surgical procedure designed to facilitate prosthesis fabrication or to improve denture retention, stability and support^[2]. This aims at eliminating the certain lesions and abnormalities of hard and soft tissue for successful denture placement. The denture bearing bone should be in a uniform shape and size^[1]. However , at times the alveolar bone gets resorbed soon due to prolonged use of an ill-fitting denture, leading to poor retention of denture.

Differences in shape of upper and lower alveolar ridge results in following:-

Reduction in height of residual ridges,

Increase in inter-arch distance,

Prognathic mandible profile and

Progressive resorption results in wider mandible and narrow maxilla.

DISCUSSION:-

CLASSIFICATION OF PREPROSTHETIC SURGERY:-

Respective

Recontouring

Augmentation

INVOLVED AREAS

Osseous tissues

Soft tissues

CATEGORY OF PATIENT

Completely edentulous

Partially edentulous

ALTERATION OF ALVEOLAR BONE

Removing undesirable contours

Bone reductions

Bone repositioning

Bone reshaping/recontouring

Bone grafting

SOFT TISSUE MODIFICATIONS:-

Soft tissue reduction

ALVEOLOPLASTY:-

An alveoloplasty [syn. Alveoplasty] is a surgical procedure which involves smoothing and reshaping the patient's jawbone, where teeth has been extracted or shed off^[1].

The purpose of the procedure is two fold:-

1. When performed before denture construction, it is used to optimize the shape of patient's jaw bone to avoid complications during insertion, stability and retention.
2. If performed in association with tooth extractions, it forms a jawbone shape thereby facilitating healing process.
3. Helps in successful placement of future prosthetic restoration.

Faster healing is important in cancer patients , who are receiving more radiation, which leads to xerosis of salivary glands , reducing the blood flow leading to osteoradionecrosis. Radiation therapy cannot be commenced until the extraction sockets are healed^[1].

Soft tissue excision

Soft tissue repositioning

Soft tissue grafting

OBJECTIVES :-

1. Ridges that are broad and flat with vertical height are parallel and non-undercut bony walls.
2. A firm, resilient mucosal covering with nicely shaped buccal and lingual sulci , un-interrupted by scars, frena or redundant tissue folds.
3. Inter-arch distance of 16-18 mm which allows room for optimal denture placement.

INTRASEPTAL

ALVEOLOPLASTY:-

An alternative to the removal of alveolar ridge irregularities by simple alveoloplasty is the Dean's intraseptal alveoplasty, thereby removing the intraseptal bone and repositioning of labial cortical bone rather than removal of it.

REDUCTION OF GENIAL TUBERCLE:-

The genial tubercle is prominent in case of advanced ridge reduction in anterior mandible^[1]. If genioglossus displaces the denture , the involved tubercle should be removed and muscle should be detached. The tubercles are visible superiorly as a result of extreme resorption of the ridge. If augmentation is suggested, provision should be given for the placement of graft^[2]. Local infiltration and bilateral lingual nerve block provide adequate anaesthesia. Using bur, chisels and roengeurs, the tubercle is reduced and smoothed using bone file^[1].

TORI REMOVAL:-

Torus palatinus is a benign, slow growing, bony projection of palatine process of maxilla and occasionally at horizontal plate of palatine bones. Heredity, superficial trauma and malocclusion are responsible factors of tori^[2]. It is composed of cortical bone, some may also have cancellous bone. The tori is classified into four types, namely flat, spindle, nodular and lobular tori respectively based on their appearance.^[1]

The surgical removal of palatine torus indicated in traumatized overlying mucosa, speech and tongue interferences, prosthodontic reconstruction. Large, lobulated tori with undercuts should be treated, where dentists recommend smooth, broad based tori as insignificant^[3].

**SOFT TISSUE PROCEDURES:-
HYPER MOBILE RIDGE:-**

This results from extensive ridge resorption under ill-fitting denture with unbalanced occlusion^[2]. Seen in anterior part as knife edged mandibular ridge. Results from anterior hyperocclusion of maxillary complete denture against mandibular natural teeth or class 1 removal partial denture. Bony augmentation should be done before excision. The tissues should be preserved^[2]. Reflection of the mucoperiosteal flap should be as minimal as possible to reduce bone resorption post-operatively^[2]. If there is excess of soft tissue in upper molar region, at the tuberosity, removal is facilitated using electrosurgery or sharp dissection.

EPULIS FISSURATUM:-

It is a hyperplasia of the sulcular epithelium due to chronic irritation from an ill-fitting denture^[2] or due to resorption. The hyperplasia is in the

form of 2 folds, namely one inner and another at the outer and ulceration noted in between the sulcus.

PAPILLARY HYPERPLASIA:-

This occurs as a result of ill fitting denture, a low grade infection due to candida or due to palatal relief in the denture^[2]. Appears as intensely red soft polyploid masses of multiple papillary projection. It will resolve on its own, failing to heal, will be removed by surgical means like electrocautery, laser, sharp excision and curettage with large rotary burs.

VESTIBULOPLASTY:-

It is a procedure designed to restore the ridge heights by lowering muscle attachment on buccal, labial and lingual aspects of residual ridge^[2]. It is done to widen the denture bearing area. There are different types of vestibuloplasty, they are:-

KAZANJIAN**VESTIBULOPLASTY:-**

A mucosal flap pedicled from alveolar ridge is elevated from the underlying tissue and sutured to depth of vestibule. The exposed tissue is allowed to heal by secondary epithelization^[1].

CLARK'S VESTIBULOPLASTY:-

In this, the flap was harvested from the lip. Horizontal incision is performed from canine to canine between immobile and mobile gingiva^[1]. The mucosa is sutured to the depth of vestibule. The denuded periosteum heals by secondary epithelization. Healing is very fast.

CORN VESTIBULOPLASTY:-

It is similar to Clarke's vestibuloplasty^[1]. Horizontal incision through soft tissue mucosa and periosteum/mucoperiosteal flap is exposed. It is not used much due to pain and long duration of procedure.

SUBMUCOSAL

VESTIBULOPLASTY:-

It was first described by Obwegeser as a method of choice of soft tissue attachment on or near the alveolar crest of maxilla. This is useful, when the entire ridge is resorbed, but residual bony maxilla is adequate for proper denture support^[3].

CONCLUSION:-

Preprosthetic surgery is a rapidly changing area in dentistry^[2]. Knowledge of the procedure, the structures involved is essential for receiving proper denture insertion. When principles of case selection and treatment plan is properly followed, excellent results and patient satisfaction are attained^[3].

REFERENCES:-

1. Evolution of preprosthetic surgery current trends: A review
Sahil Choudari, V Rakshagan, Ashish R Jain
2. Preprosthetic surgery: A review of literature
Haripriya Chari, Khadar Vali Shaik
3. Preprosthetic surgery: A review of literature
Prachi Madan Rohilla, Manish Kumar, Ulfat Majeed, Akansha Singh