Specialized Dentures: An individualistic approach

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Abstract

Not every case of edentulism, either complete or partial, can be treated with conventional methods of denture fabrication. There is need for slight modification in impression procedure or designing of the prosthesis to achieve best results in case of compromised conditions. This article intends to highlight clinically relevant modifications of removable prosthesis that can be kept in mind, when such cases may be encountered in daily practice.

Key Words: *Special denture*

Introduction

Conventional Complete Dentures is a removable dental Prosthesis that replaces the entire dentition and associated structures of maxillae or mandible - GPT-8. When conventional complete denture does not suit patient's needs, certain modifications are made to meet the patient's requirements. Such dentures can be termed as special or unconventional complete dentures.

It has been the result of clinical work and experiments of many practitioners and researchers that had lead us to various treatment options beyond the conventional and texted methods of practice.

Various types of nonconventional dentures are include : Characterized dentures, Cheek Plumper, Cu-Sil denture, Duplicate Dentures, Flexible denture, Hollow denture, Immediate denture, Internally Weighted dentures, Labeled denture, Liquid Supported Complete denture, Metal-Based denture, dentures by Neutral Zone method, Over denture, Saliva reservoir denture, Sectional Complete denture.

Commonly used special dentures:

1. **Characterized Denture**[1-5]: Glossary of prosthodontics terms defines Denture characterization as modification of the form and color of the denture base and teeth to produce a more lifelike appearance." Fig. 1.

Indications: For patients demanding for enhanced esthetics

- High smile line
- Socially active
- Stage performers

Fig. 1: Characterized Denture

2. **Cheek Plumper**[6-9]: It is basically a denture with fixed or detachable component that is placed in the mid posterior region to improve esthetics by providing support for sunken cheeks. Fig. 2

Indication:

- For patients with sunken cheeks to improve their esthetics.

Fig. 2: Cheek Plumper

3. **Cu-Sil Denture**[10]: These dentures are special dentures with a silicone gasket around abutment teeth to aid in retention by encircling the teeth and maintaining seal. Fig. 3

Indication:

- Patients with few remaining teeth
- Patients contraindicated for overdenture.
- Patient not willing for extraction for complete denture.

Advantages: It minimizes the forces on abutment while giving primary retention. No invasive procedures like endodontic treatment or abutment reduction is required. It is easy to repair and inexpensive.

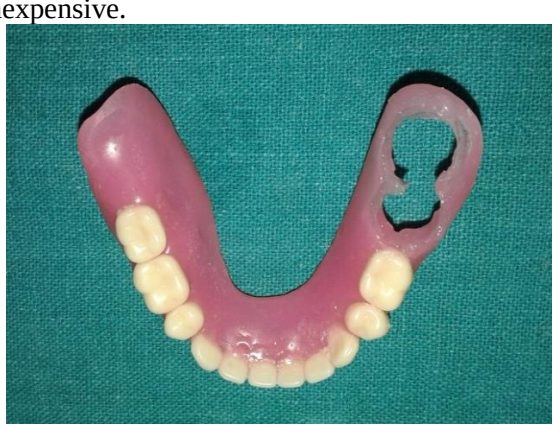

Fig. 3: Cu Sil Denture

4. **Duplicate Dentures**[11-14]: These dentures are made as either exact replica of previous denture or with slight modification in denture of satisfactory service.

Indications:

- Patients asking for a spare set of dentures.
- Patients treated with immediate dentures that require replacement.
- Patients with worn dentition but satisfied with fitting of old denture

5. **Flexible Denture**[15-17]: These dentures are partial or complete dentures fabricated by special material that are not rigid like acrylic dentures and have flexing properties that allows a comfortable fit. Fig. 4

Indications:

- For TMJ splints.
- Bilateral inoperable undercuts.
- For a patient allergic to acrylic monomers.
- Can be used in combination with a metal frame to allow the aesthetic benefit of replacing the buccal arm.

Advantages: More esthetics since metal clasps are eliminated. Flexibility of the material allows to be inserted in undercut areas without providing relief. Need for invasive procedures like shaping of abutment tooth or rest seat preparation is eliminated. For seating the prosthesis can be heated in warm water to be inserted in undercuts.

Fig. 4: Flexible Denture

6. **Hollow Dentures**[18-21]: These are the maxillary dentures that have hollow cavity within their designing in the region between the prosthetic teeth and the denture base just above the ridge to make the denture light weight. Fig. 5

Indications:

- Patients with Increased inter-ridge space because of increased ridge resorption to reduce the weight of maxillary denture.

Advantage: Prevents fall of denture due to its weight under the effect of gravity.

Fig. 5: Hollow Denture

7. **Immediate Dentures**[22-24]: Any removable dental prosthesis fabricated for placement immediately following the removal of a natural tooth/teeth-GPT. A removable partial denture serving as an interim prosthesis to which artificial teeth will be added as natural teeth are lost and that will be replaced after post extraction tissue changes have occurred. A transitional denture may become an interim complete denture when all of the natural teeth have been removed from the dental arch. Fig. 6

Indications:

- For Patient with hopeless condition of teeth
- For Patient who is socially active
- For patients with who can afford multiple visits

Advantages: Patient does not have to suffer through edentulous period. Current esthetics of patient are retained in dentures. Patient adapts rapidly. Patients speech and appearance are retained since there is no edentulous period. Patient does not develop undesirable habits and is more cooperative emotionally. It acts as a bandage to control hemorrhage and promotes rapid healing. It provides for minimum social interruptions and maximum psychological advantages.

Fig. 6: Immediate Denture

8. **Internally Weighted Dentures**[25-28]: These type of dentures are designed with incorporation of some additional components within the body of mandibular denture to increase its weight to aid in its retention and stability. Fig. 7

Indications:

- Patients with highly resorbed mandibular residual alveolar ridge
- To increase stability of lower denture by effect of gravity

Advantage: Improved stability is achieved by added weight to the denture without altering it's the esthetics. It allows for the relining of the dentures if required in future which is not possible in metal base dentures. Also, it is a treatment option in cases where surgery can't be performed to improve foundation for lower denture.

Fig. 7: Internally Weighted Denture

9. **Labeled Dentures**[29-33]: These type of dentures are fabricated with some markings that may be written name of patient, a photograph, barcode or metal strip, a microchip with patient details for purpose of identification. Fig. 8

Indications:

- For forensic purpose and identification of patients in mass disasters or road side accidents when patient is unable to communicate.

Advantages: Easy and quick method for identification. These dentures do not require any expensive materials. They are helpful in identification of dentures where in family there are multiple denture wearers.

Fig. 8: Labelled Denture

10. **Liquid Supported complete Dentures**[34-37]: These dentures have a flexible base which is liquid filled to provide a cushioning effect to the ridge mucosa. They continuously keep on adjusting with the resorbing ridge to keep it well adapted.

Indications:

- Patients with flabby ridge
- Patients with diabetes showing rapid bone resorption
- Patients with xerostomia or atrophied ridges

Advantages: Provides a flexible base on intaglio surface and with rigid support through other surfaces. It is comfortable for the patients with rapid bone resorption. It reduces forces on the residual alveolar ridge in patients with bruxism or clenching habits. It also provides a comfortable soft base in dry mouth conditions to reduce chances of abrasion of mucosa and in superficially placed mental nerves.

11. **Metal-Based Dentures**[38-41]: These dentures have metal base instead of conventional acrylic base.

Indications: Metal denture bases are indicated in

- Patients with opposing natural dentition
- Patients with deep palatal vault or prominent residual ridges
- To increase strength as in overdentures
- Patients with compromised neuromuscular coordination who may drop their dentures
- Patients with high frenal attachment making the labial notch a potential fracture area
- Female patient with menopausal condition with oral manifestations such as oral burning sensation with associated mucosal infections, pain, altered taste perception, and alveolar bone loss
- Patients with thin anterior region in mandibular region with possibility for fracture

Advantages: Metal dentures have better fitting because of stable base and more accurate tissue details replication. It also has reduced incidences of fracture. Patient is much comfortable with the metal base because of a thin base and better thermal perception. Hygiene maintenance is easy hence there are less chances of fungal growth, which is a possibility in conventional dentures.

12. **Dentures by Neutral Zone Method**[42-44]: These dentures are designed according to neutral zone concept, which is the zone of equilibrium where forces from tongue on lingual side are neutralized by force from lips and cheek on buccal side. This helps in stabilizing the denture in cases where residual ridge is not supportive. Fig. 9

Indications:

- Patients with severely atrophic mandibular ridge of Atwood's class V condition
- Patients with highly attached mentalis muscle or lateral spreading of tongue as a result of poor transition from dentate to edentulous state and severe resorption
- Patients with atypical shape or consistency of oral and perioral structures
- Patients planned for implant-supported overdenture to locate position for implant

Fig. 9: Dentures by Neutral Zone Method

13. **Overdentures**[45-48]: A removable partial or complete denture that covers and rests on one or more remaining natural teeth, roots, and/or dental implants; a prosthesis that covers and is partially supported by natural teeth, tooth roots, and/or dental implants. They are also called overlay denture, overlay prosthesis, superimposed, prosthesis. Fig. 10

Indications:

- Indicated for patients with few remaining teeth with good hygiene maintenance
- Patients with the loss of teeth in one arch while the other arch is dentulous
- Patients with unfavorable tongue positions and muscle attachments

Advantages: Since the teeth are preserved, the bone is preserved and the periodontal support is retained, so the patient's propioreception is maintained to have better efficiency in mastication via neuromuscular control.

Fig. 10: Overdenture

14. **Saliva Reservoir Dentures**[49-51]: These special dentures are fabricated with provision for storing artificial salvia or its substitute within the body of the denture as a saliva reservoir most commonly in palatal region or in the body of lower denture with opening on lingual side of denture.

Indications

- Patients with dry mouth /xerostomia

Advantages: Artificial saliva oozing through the dentures helps the patient with xerostomia to wet his/ her mouth to be comfortable while speaking, swallowing, mastication etc.

15. **Sectional Complete Dentures**[52-54]: These denture are specially designed as a two-piece denture joined with hinge, snap fasts, magnets, stud attachments that can be inserted either individually and then connected intraorally or can be folded and the inserted in mouth.

Indications:

- Patients with microstomia
- Patients with limited mouth opening because of scleroderma, cleft lip, trauma, burns or surgery

Advantages: It is difficult for the patients with microstoma to insert a conventional denture of normal size through restricted mouth opening, so a foldable or a two-piece denture aids in serving such patients.

Conclusion

Not all the cases of edentulousness be treated with conventional dentures. Special consideration in treatment of cases with compromised condition should be done. Designing of the denture according to patient's condition and need is important for success of denture. This article presents with an idea of various special dentures that can be made according to the need of the case.

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