Toppersnotes
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NEET - MDS

MASTERS OF DENTAL SURGERY

BY NBE

NATIONAL ELIGIBILITY CUM ENTRANCE TEST

Volume – 7

Prosthodontics and Crown & Bridge

SIERRA INNOVATIONS

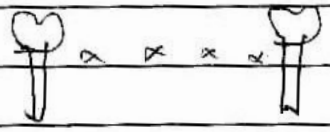
CONTENT

PROSTHODONTICS AND CROWN & BRIDGE

PROSTHO

:- Cast-Partial Denture :- (C.P.D)

Indications of RPD :-

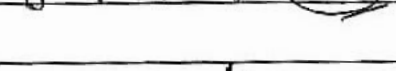


1. Length of edentalous span.
   RPD Preferred for long span edentulous ridges.
2. Distal extension situations.
3. Age factor where FPD is contraindicated that is youth under 17 years who have large pulp chambers & lack of clinical crown length.
4. Week abutment teeth with poor periodontal support which contraindicate FPD
5. Need for cross arch stabilization [major advantage of RPD over FPD].

Aliter

6. Excessive loss of residual alveolar ridge due to trauma or resorption.
7. Immediate teeth replacement.

* [Multiple edentulous spaces go for FPD than RPD].

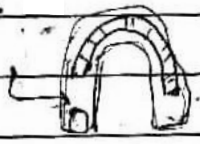


1. Kennedy's classification Most Popular Classification

(1.) Class I- Bilateral edentulous areas located posterior to the remaining natural teeth.
(most prevalent classification in Human race).

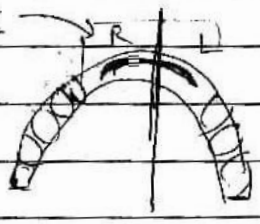
(2) Class II :- unilateral edentulous areas located posterior to the remaining natural teeth.

(3.) Class III :- Unilateral (or) Bilateral edentulous areas with natural teeth anterior & posterior to it.



Class IV :- single bilateral edentulous area located anterior to remaining natural teeth which crosses the midline.

↳ (Least common area)



Main disadvantage of this classification :-

(1) It does not tell you about the periodontal status of abutment. (2) It does not cover all the edentulous situations.

Applegates Rule :-

Rule (1) Classification should follow rather than precede extraction that might alter the original classification.

(2) If the third molar is missing and not to be replaced, it is not considered in the classification.

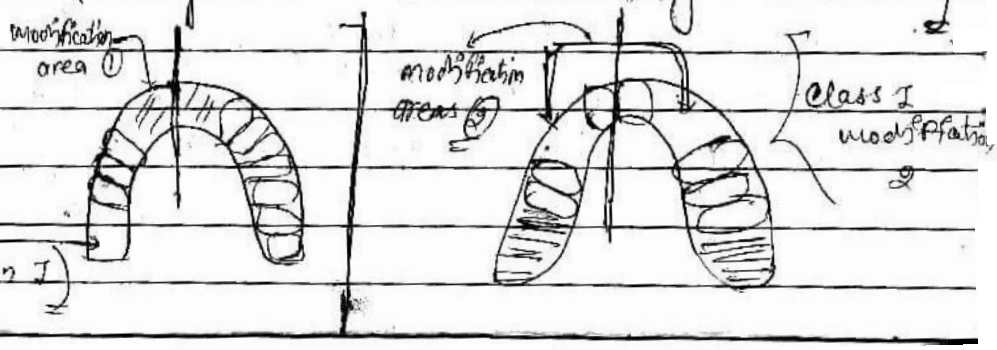
(3) If the third molar is out and to be used as abutment, it is considered in the classification.

(4) If the second molar is missing and is not to be replaced, it is not considered in the classification.

(5) ## Most posterior edentulous area always determine the classification.

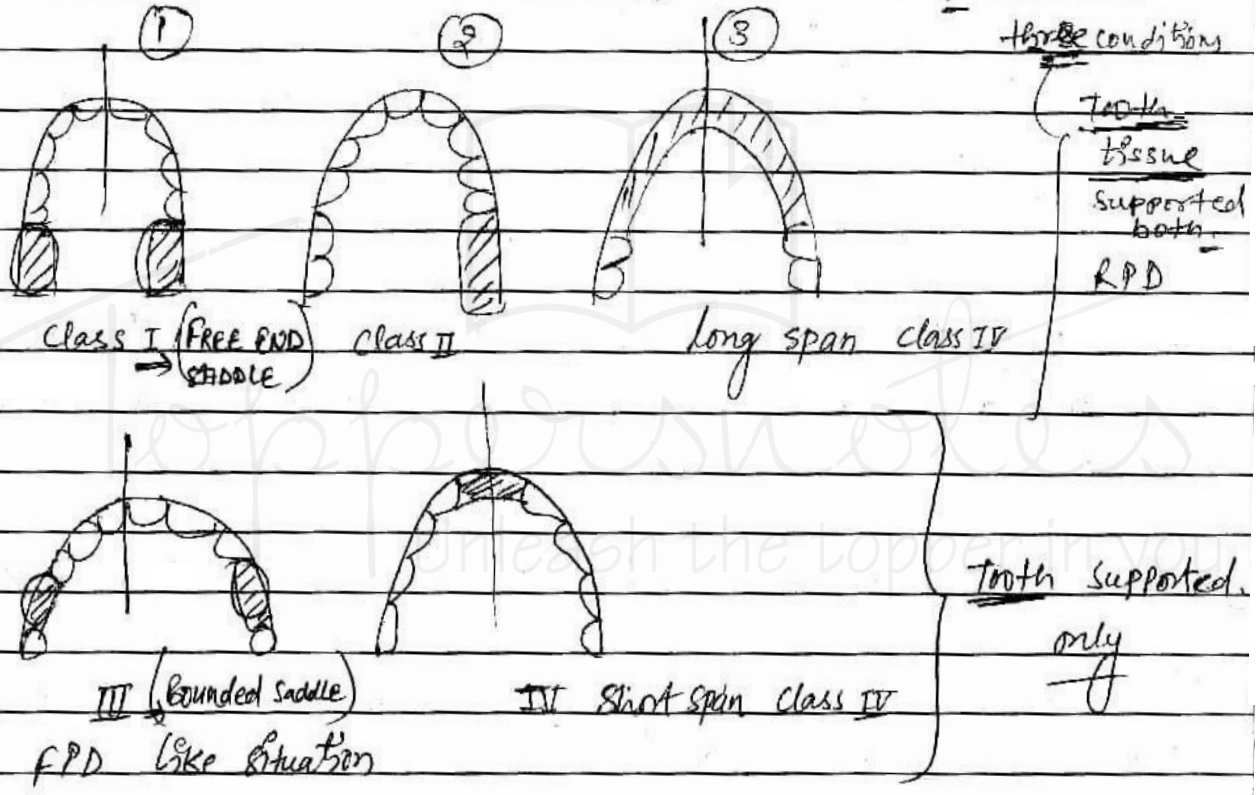
(6) edentulous areas other than those, which determine the classification, are referred to as ## Modification spaces and are designated by their Numbers.

NOTE | Class IV (anndy) cannot have any modification

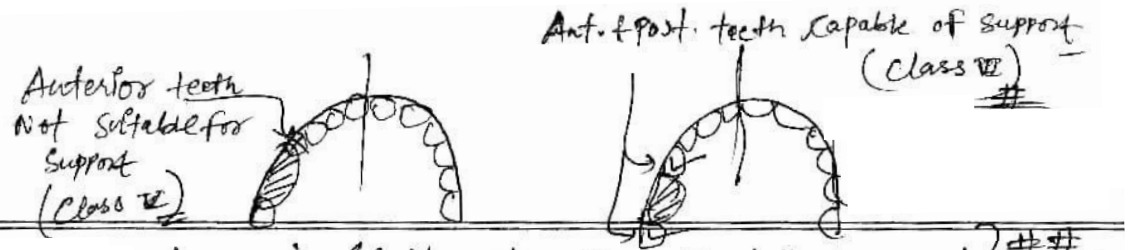


Rule (7) The extent of the modification is not considered, only the No. of additional edentulous area, i.e. the No. of teeth missing in the modification spaces is not considered only the No. of edentulous spaces are considered.

(8) There can be no modification spaces in class IV. Becoz any additional edentulous space will definately be posterior to it and will determine the classification.



⇒ NOTE:-
~~NEVER~~ CONVERTED
ALWAYS TRY TO SAVE THE TERMINAL ABUTMENT IF POSSIBLE.



class V :- Similar to class III but teeth not suitable for support.

class VI :- teeth surrounding edentulous space is capable of total support.

- TERMS :-

INTERIM Partial denture :- used for short period of time for esthetic reasons, mastication or convenience until a more definitive form of treatment can be rendered.

TRANSITIONAL PARTIAL DENTURE :- aids patient in making transition to a complete denture and can be modified to accomodate additional loss of teeth.

TREATMENT DENTURE :- to establish new occlusal relationship

⇒ (It aids in transiting RPD patient to an CD patient.)
Transitional partial denture.

TREATMENT DENTURE :- It treats underlying condition

(1) abused soft tissues.
⇒ Tissue conditioner / Shock absorber
long term
[heat stomatitis]

(2) Collapsed lobe

Components of cast partial removable denture

1. Major Connector
2. minor Connector.
3. Rest → Vertical Support (Prevent tissue ward movement) (If prevent displacement of soft tissues during mastication)
4. Direct Retainer
5. Indirect Retainer (Tissue-tooth support to change)
6. Denture Base
7. Artificial teeth Replacement.

Clasp assembly / Direct Retainer.
- → Extracoronal clasp
- → Attachments (Intracoronal)

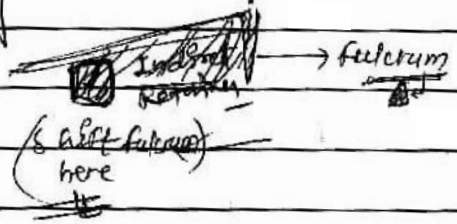
Clasp → to provide Retention.

→ It prevents dislodgement of the denture during mastication.

Q. Can Rest provide Retention ?? Y/N

No. [It provide vertical support]

⇒ # Heel Raising effect prevented by Indirect Retainer



MAJOR CONNECTORS:- According to GPT-8, "major connector is "that part of partial removable dental prosthesis that joins the components on one side of the arch to those on the opposite side"

→ It resists flexing and torquing.
and distributes forces over entire supporting area.

Requirements of a major connector:-

1. It must be (rigid) then only other components will be effective.
   Q. If it is not rigid? [Ans. It will lead to stress concentration at the level of teeth as well as at level of ridge leading to bone resorption around both of them.]
2. Must provide vertical support & protect the soft tissues.
3. Must provide means of obtaining indirect retention where indicated.
4. Must provide an opportunity of positioning denture bases where needed.
5. must maintain Patient Comfort.

Phonetic - mainly affected by major connector.

If Major Connector will fracture ?? / does Not repair.
⇒ then New major connector is made

∴ Major Connector away from free gingival margin & (FGM)

In Mandible → 3mm
In Maxilla → 6mm
} Parallel to Free gingival (FGM) margin.

Major connector construction :-

Steps :- (1) Design of stress Bearing area.
(2) —"— non-stress —"—
(3) marking the outline of the strap line.
(4) Selection of strap type.

Major Connector

Maxillary

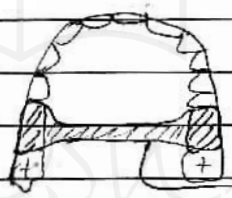
1. single Post. palatal bar
2. ~~Palatal Strap~~
3. Anteroposterior / Double palate bar
4. Horse shoe Shaped Connector (open / U shaped)
5. closed horse Shoe / ~~Shaped~~ anteroposterior palatal strap
6. Complete palate

Mandibular

1. ~~Lingual bar (sublingual)~~
2. Lingual plate
3. Double lingual bar / Kennedy's bar / continuous clasp
4. Labial bar
5. Cingulum bar.

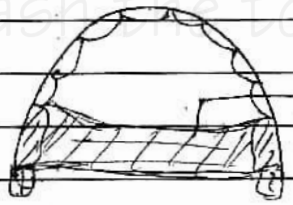
⇒ Designing of major connector - during diagnosis & treatment planning phase then mouth preparation should begin.

1. single Post. palatal bar



4-5mm width ↓ (Bulky) ↑

2. Palatal Strap



8mm width >> Bulk !!

Material used for Cast Partial denture.

→ Gold (earlier)

Nowadays (mainly) Cast chrome alloy (Co-Cr) (cast chrome alloys rigid even in thin section)

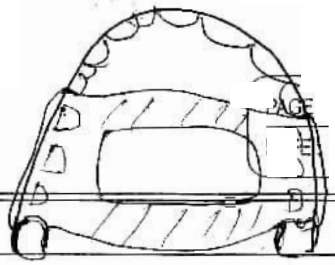
→ Titanium. ↑ modify of ~~elasticity~~

Q. ~~Qmm bar~~ which bar is better 4mm or 6mm ??

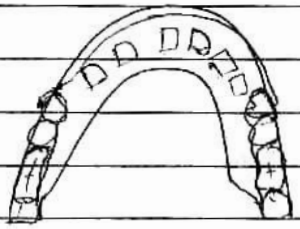
Ans:- 6mm because (width ↑↑ Bulky ↓↓)

↳ less problem in speaking.

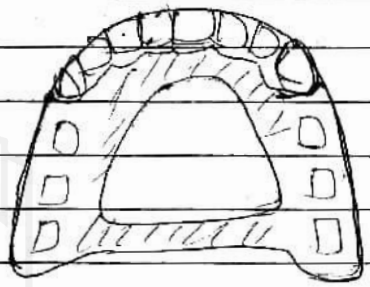
3. Anteroposterior / double palatal bar



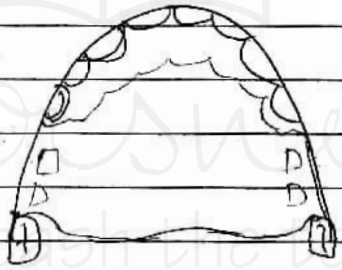
4. Horse shoe shaped / open.



5. Closed horse shoe shaped.



6. Complete palate / Palatal plate



Disadvantages

Single palatal bar :- It was mainly used tooth supported situations or class III modifications. (Used in anterior dentures)

Disadvantages :- provide very less support ; to maintain rigidity it will be bulky, objectionable to tongue.

- If thick difficulty to push bolus backward & swallowing.
- Derives least support from palate.

Single palatal strap :- It is indicated for short span ~~Class III~~ & short span Class II situations.

~~Rigidity~~ Rigidity → (1) material (2) Bent in diff. planes (↑ Russ effect) (L Beam effect)

Advantages :- → less Bulk still rigid more comfortable
→ Provide support & stability for the framework
→ Width Same as edentulous span Tongue.

~~Torus effect~~ & (I-Beam effect) :- framework engages the palatal vault in diff. planes & thus provide stability and some amount of indirect retention.

(3) Anterior-post. Bar / Double palatal bar :-
Anterior bar is flat in cross-section and posterior bar is half oval in cross-section. (at junction of soft & hard palate.

Indications :- In case of bilateral, long edentulous Space with periodontally sound ant. & post. abutment teeth.
→ Presence of (torus palatinus) not to be removed.

Disadvantages- Bulky, least support from palate
→ It contraindicated in High & narrow vault palate # because ant. bar interfere with phonetics.
→ Should not be used until remaining teeth are periodontally strong.

→ Waxing specifications :- ant. bar - 24 to 26 gauge wax
post. bar - 22 to 24 — " —.

# # # #
(4) Anterior-post. Palatal Strap :- (closed horse shoe shaped)
One of the most versatile maxillary major connectors.
→ Structurally strong* and (rigid) # #
(F) open horse shoe (U-shaped) derives (support) from palate # #.
Indication :- # (1) Inoperable large torus. extended to soft & hard palate junction
→ (2) when you are replacing multiple anterior teeth.
- lack rigidity.
Strictly contraindicated in distal extension cases.
→ least preferred maxi. major connector.

* Distal extension RPD receives its support Mostly from residual ridges.

(6)
Complete palate

~~Indication~~ :-
In Kennedy's class I situation condition with severe bone resorption

Advantages :- (1) uniform thickness and anatomical replica of palate provide good comfort for the patient and it does not disturb the speech.
(2) It provide good support and stability becoz of broad coverage.
(3) Provide some amt. of retention becoz of intimate contact.
(4) In case of flat & flabby ridges it provides good stability.
(5) good choice for cleft palate cases.
(6) It also acts as a trainer for complete denture therapy

[Beading of Major Connector]

→ The dimension of Beading is not more than 0.5 mm.
→ The Beading is done to have intimate contact with soft tissues.
→ It prevents engrase of food beneath the denture.

maxilla (mucosa)	mandible (mucosa)
→ firm attached	→ Thin
→ Rough	→ friable
→ more stress Bearable.	→ more prone to trauma.

Beading is contraindicated in mandible.
→ Beading is done in maxilla, & Relief agive in mandible.
Relief wax 20 gauge wax

Mandibular major Connector :-

→ minimal support from the residual ridges so "Indirect retention" is needed to achieve stability.
→ less surface area for the major connector.
→ more movable tissues in the mandibular arch.
→ The shape of the basal bone in the anteroLingual region i.e. Lingual Sulcus area.
→ level of the Lingual frenum & its mobility
→ Relief is frequently required for mandibular arch.
→ Beading is contraIndicated.
→ ~~extra~~

~~free Gingival margin in mandible - 3mm~~

Types :-

(1) Lingual bar :- Half pear shaped in cross-section. (4-5 mm)

→ It requires minimum (8mm (3+4-5mm)) of Lingual vestibular space (deep Lingual Sulcus). tapered → Round

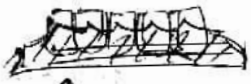
Indirect :- In all situations where Indirect retention is not needed. (tooth supported)

* occlusal contact with oral tissues.
* first Preference for selection of maj. connector.

(2) Sublingual Bar

It is recommended to be used in shallow vestibules (less than 6mm of vestibular depth).

Structral detail :- In case of Sublingual bar anteroposterior width is more in horizontal plane i.e. parallel to the floor of Mouth.



Lingual plate (Linguo plate, Lingual strap, Lingual Apron, Lingual shield).

→ It is a type of the major connector ## most commonly used in case of periodontally compromised remaining teeth.

Indications:- Hige frenal attachment (vestibule < 8mm) # Shallow Sulcus; Highly active floor of Mouth.

→ Presence of lingual tori.

→ when Indirect retention # is needed ('Kennedy's class I)

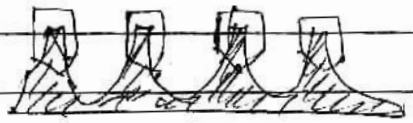
→ Stabilization of ant. & periodontally weakned teeth.

→ future replacement of one or more Incisor teeth.

→ when residual ridges in class I have undergone vertical resorption.

Distal extension with diastema cases :-

⇒ (Step back design of lingual plate.
(Modification of lingual palate.)



#either its lingual plate or its modification it should be supported at each end by rest.

(Double lingual Bar) / Kennedy's bar, ~~split bar~~
Continous lingual Clasp. modification of lingual plate.
→ upper bar 2-3mm high, 1mm thick.

Indications:- It is indicated in case where the wide interproximal areas prevent the use of linguoplate.
→ Indicated primarily when some degree of indirect retention is required, PDL disease has resulted in large interproximal spaces. (Recession of Bone)
→ Horizontal stabilization
* Not Preferred bcoz - Complex design & Inadequate stability

* Cingulum Bar :- *
It is a type of major connector which rests on the cingulum of anterior teeth.

* LABIAL BAR :-*
Indications :- It is indicated in case of lingually tilted anterior and posterior teeth (non-correctable).
→ presence of large tori.

* Swing lock labial bar / Winged Continous labial bar *
→ diagram
→ modification of labial bar.
→ By J. Simmons.
→ Bar labially is not major connector so less bulk. (retention n stabilisation)
→ Hinge at one end, locking at other.
→ Hinging action it is intimately placed against gingival tissues / undercuts.

→ Splinting action → Immobilize (or) restrict motion of a part.

Indications :- Few remaining natural teeth for conventional denture.

→ Remaining teeth too mobile to serve as abutment for conventional rpd.

→ Position of remaining teeth not favourable for conventional rpd.

→ Retention n stabilisation needed for maxillofacial prosthesis eg. obturators.

→ To retain prosthesis who have lost large segments of ridge (or) alveolar ridge through traumatic injury.

MINOR connector :-

Acc. to GPT-8, minor connector is the connecting link b/w the major connector or base of a partial removable dental prosthesis and the other units of the prosthesis, such as the clasp assembly, indirect retainers, occlusal rests, or lingulum rests.

RPD
C.P.D → All should be rigid.
major connector, minor connector → (except approaching arm)
except ← Rest, Reciprocal arm, Retentive arm → (except :- Tip)
(H-shaped)

function :- → Prosthesis to abutment function.
→ Prosthesis to prosthesis function.
→ Provide horizontal stability

→ Rigid
→ forms right angle to major connetor.
→ Abruptly crosses FGM, covering alveolar gingival tissues (free gingival margin)

abrupt

* junction of mandibular minor connector with major connector is Butt-type joint.

1. Joining the clasp assembly to the major connector.
2. Joining the indirect retainers or auxiliary rests to the major
3. Joining the denture base to major connector. connectors.
4. As Approach arm for a vertical projection or bar type clasp.

~~Minor connectors that join the denture base to the major connector.~~

THREE TYPES :-

1. Lattice work construction / loop & ladder design.
2. Mesh construction.
3. Bead wire or nail head minor connector.

1. Lattice work construction :-

→ maxilla covers whole ridge

→ mandible cover anterior 2/3rd.
posterior 1/3rd.


→ Tissue stop because it prevents distortion of framework during packing.

→ It is strongest attachment with acrylic.

• If the ridge can resorb easiest to relining.

Main indication :- Distal extension cases.

2. Mesh construction :

→ main drawback is that it is more difficult to pack acrylic resin dough because more pressure is needed against the resin to force it through the small holes.

→ It also does not provide as strong an attachment for the acrylic denture base as compared to the lattice framework.

* Indicated when multiple teeth are to be replaced.