

Repair of complete denture

One of the advantages of using acrylic resin in denture base , it can be easy to repair , a broken denture which is useless to the patient may be repaired easy so that it is again be useful device.

In the early days repair done with heat cure acrylic resin, today self-curing repair materials, make repair even simpler and prevent warpage which happened in the denture from overheating.

Types of repair:

1-maxillary denture base fracture  all of the parts are available

2-mandibular denture base fracture

3-replacement of the broken or missing tooth or teeth

4-missing labial or lingual border

Clinical and laboratory procedure:

Repairing of fractured denture base:

a-accurate re-assembly of the broken parts , if not the denture will neither fit nor occlude properly

b-applied sticky wax to the fractured line to maintain the two pieces in correct position , do not allow the sticky wax to flow into the fracture lines only cover the fracture line from polished surface

c-the reinforced the denture by attaching one or more wooden stick or (old bur) to the Occlusal surface

d-block any undercut in the tissues side of the denture and apply separating medium

e-a cast is poured into the denture using quick set plaster

f-after setting remove the two piece of denture gently

g-coat the cast with tinfoil substitute (separating medium)set aside to dry

h-the edge of the fractured are beveled toward the polished surface and the polished surface reduced to form a groove of 8-10 mm wide along the fractured line

i-the pieces of the denture are re-assembled on the cast

j-self curing resin repair material is used, an alternate applications of monomer and polymer are made until the area to be repaired is filled the area should be slightly overfilled to allow for finishing

k-porosity in repaired material can be prevented by using pressure curing unit that will produce 30 pounds of pressure will enhance the density of resin as it cures , left in it for a minimum 10 minutes

l-the denture is removed from unit then from cast remove the excess by bur

m-finished and polished in a conventional manner

n- Inserted in patient mouth

Replacement of broken tooth or missing tooth:

There are many techniques but the one which provide good results is:

1-The area lingual to the fractured tooth is reduced using small bur

2- The fractured tooth is then heated using a flame to soften the area surrounding it then pushed out

3-the mold and shade of the tooth is determined and selected

4-remove the denture base material lingual to the socket left which must be large enough to accommodate the tooth without interference, the labial portion of the tooth socket is left intact to aid in repositioning the new tooth

5-placing the new tooth in position

6-the tooth can be fixed labial by sticky wax or a matrix of plaster labially, we do the plaster matrix by applying a layer of plaster on broken tooth this should include one tooth on each side, thin layer of Vaseline can be applied on the teeth before applying the plaster to facilitate removal of matrix

7- Self curing resin is used to attach the tooth to the denture base

8-Alternate application of monomer and polymer are made until the area is overfilled

9-Place the denture in pressure curing unit containing water of 100 degree for 10 minutes

10- Removed finished and polished.

Missing labial or lingual border:

Often piece of a broken denture may be lost or may be impossible to position, for this reason it may be necessary to replace this missing part, small piece broken of the border can be fashioned by placing warmed modeling plastic on the remaining border and then recontouring the missing area by placement in patient's mouth , after proper recounting a cast is poured into the denture, the modeling plastic is removed and self-curing resin is used to fill the area of the missing border , the resin is cured and polished.

If borders are missing from several areas of the denture or if a large piece is missing, it may be necessary to make an impression over the fractured denture, an oversized perforated tray is filled with irreversible hydrocolloid (alginate) and then the denture with the missing part or parts is placed in patient's mouth to make an impression over the denture, a cast is poured in the impression with denture by stone. After the stone became hard and the impression has been removed the cast will reveal the area to be added, self-curing resin is then used to replace these missing areas.

Recently a visible light cured resin can be used in place of conventional denture resin to repair fractured denture, the advantages of VLC resin over conventional resin are:

1-have superior strength and dimensional stability

2-complete polymerization without residual compounds

3-no free monomer

4-ease of manipulation

5-the material is well tolerated by patient

6-need minimum of time and effort