Artificial crowns.

Artificial crowns are used to prevent

further

destruction of the tooth, restoration of its anatomical shape and, accordingly,

functions, as well as for the location of clasps of removable dentures,

orthodontic and maxillofacial devices.

Crown classification:

1. By design: 1). Full

 2). Half crowns

 3). Equatorial

 4). Stump

 5). Telescopic

2. Depending on materials: 1). Metal (from noble alloys

and base metals).

 2). Plastic

 3). Porcelain

4). Combined (m+p)

3. Manufacturing methods: 1) stamped

 2) solid cast

Full artificial crowns are classified as prostheses, most often

used in practical activities

Indications and contraindications for the use of crowns.

Indications for the manufacture of artificial crowns must be clear

determined if we take into account that even a correctly manufactured crown, like

any other prosthesis may have a harmful effect on the periodontium of the teeth and

the body as a whole. The negative impact increases if they

are manufactured without sufficient clinical justification and, moreover, with

violation of requirements.

Indications: - significant destruction of the tooth crown due to caries

or other reasons, provided that defects cannot be replaced

fillings or inlays.

- to normalize the occlusal height when it is reduced

- for fixation of fixed dentures

- in some cases, crowns serve as a support for fixing removable dentures.

- crowns (pp, head, mk,.) are used to eliminate defects in hard tissues

front teeth, changes in color, shape, position.

Crowns are not indicated for carious defects, which may be

sealed, at the insistence of patients, in areas of chronic

inflammation in the periodontium (story).

Requirements for stamped metal crowns.

Crowns must meet the following requirements:

1. The crown should tightly cover the neck of the tooth. If the crown diameter

is smaller than the diameter of the neck of the tooth, then you will not fit it on the tooth. Wide crown

injures the gums with its edges and causes inflammation. In addition, under

saliva and food debris enter the crown - this promotes resorption

cement. Crowns are also a source of sensitization

body and the cause of chronic intoxication.

2. The edge of the crown should slightly extend into the gingival groove

0.1-0.3 mm or reach only to the edge of the gum. If the crown goes deep

under the gum, this causes destruction of the circular ligament of the tooth, inflammation

gums and periodontal pocket formation.

3. The crown must have the correct anatomical shape,

corresponding to the shape of a natural tooth. It is important that the crown has good

the equator was expressed and contact points were created

4. The crown should restore chewing function without disruption

occlusal relationships with antagonist teeth

Clinical and laboratory stages of metal production

stamped crowns.

1. Tooth preparation, taking an impression (cl).

2. Making a crown (lab).

3. Checking and fitting the crown (cl).

4. Grinding, polishing of the crown (lab.)

5. Fixation with cement.

 Features of tooth preparation for metal

 stamped crown.

The task of tooth preparation is to give the crown such

a shape that would allow you to tightly surround the neck. All parts of the tooth

extending beyond its neck must be ground off.

Preparation begins with grinding down the proximal surfaces

diamond discs, then prepared with shaped diamond heads

vestibular and oral surfaces, then prepare the occlusal

surface. A uniform layer of tissue is removed along its entire length,

equal to the thickness of the future crown (0.3 – 0.4 mm), maintaining the configuration

chewing surface. This is necessary in order not to open

tooth cavity. At the end of the tooth preparation, the corners are rounded and

elimination of irregularities. Then, using a probe and a mirror, they check

quality of preparation.

 Preparation of teeth for a half-crown.

A half-crown is a prosthesis that, unlike a full crown, does not

covers the vestibular surface of the tooth. It is an integral part

Magnetic prosthesis and is used in the anterior part of the dentition.

Half-crowns can be cast or stamped. Preparation begins

one-sided separation disc. It is installed so that the gap with

the vestibular side was minimal. From the palatal surface of the anterior

teeth are removed with diamond heads, a layer 0.5 mm thick, i.e. equal

thickness of the cast half-crown. The cutting edge of the tooth is ground down in such a way

so that the edge of the metal half-crown is not visible from the labial side and, in

at the same time, so that it protects the tooth when biting food. The final ones

the moment of preparation is the creation of longitudinal incisors on it

contact surfaces. They are turned using a cone-shaped

diamond bur, retreating from the labial surface by 2-3 mm.

Some authors believe that to strengthen a half-crown, two

grooves Others consider it necessary to connect longitudinal grooves

transverse.

When preparing lateral teeth, make contact surfaces

parallel. A layer of tissue thick is removed from the chewing surface

0.5 mm, then prepare the oral surface, then prepare

cutters on contact surfaces. The impression is obtained in masses that give

exact fingerprint.

 Preparation of teeth for an equatorial crown.

Equatorial crowns cover part of the tooth only up to the equator.

Indications: in the treatment of caries of the occlusal surface, as a support

bridge prosthesis, in splinting devices and prostheses for periodontitis.

They can be stamped or cast. Tooth preparation is carried out

only up to the equator, at the level of the equator a ledge 0.5 mm wide is created for

solid cast and 0.2-0.3 mm for stamped ones. If the equatorial crown

is an integral part of the bridge prosthesis, then the surface of the tooth,

facing the defect, is prepared to a greater extent to increase

places of connection area with the body of the prosthesis. Equator crowns on everything

length should be in contact with the ledge and not protrude beyond it.

Fitting of crowns, half-crowns, equatorial crowns (story).

Solid metal crowns.

Advantages over stamped ones:

- fit more accurately to the teeth in the cervical area

- do not injure gum tissue

- do not create retention points for food

- more accurately restore the anatomical shape of the tooth

- do not wear out

Indications:

- for caries

- shape anomalies

- pathological wear of lateral teeth

- bridge element

 Clinical and laboratory stages:

1. Tooth preparation

2. Model making

3. Determination and fixation of central occlusion

4. Making a crown

5. Crown fitting

6. Grinding, polishing

7. Fixation with cement.

Preparation of teeth.

The thickness of the cast crown should average 0.3-0.5 mm. Solid

tissue is removed to a greater extent than during preparation under

stamped metal crown. Preparation is carried out with

taking into account safety zones. Start with separation of the contact surface

(drawings).

Plastic and porcelain crowns.

 Plastic crowns.

Plastic crowns are widely used in practice. They

aesthetically pleasing, inexpensive, easy to manufacture, but along with these

have advantages and significant disadvantages: low

wear resistance coefficient, porosity, unstable color, large

coefficient of thermal expansion, irritate the mucous membrane

gums.

Indications for them are limited; they are used mainly on the front teeth

and how temporary.

 Porcelain crowns.

They have an advantage over plastic ones: more natural and

stable color, do not swell in the oral cavity, are not permeable to microbes and

do not cause allergic reactions, do not linger on their surface

food deficiencies and the hygienic condition of the oral cavity is not impaired,

the volume of the porcelain crown does not change under the influence of temperature differences.

From a chemical point of view, porcelain is stable and harmless

material, does not affect biochemical processes in the oral cavity.

Indications:

Porcelain crowns are indicated for partial defects of dental crowns,

caused by caries or trauma, wedge-shaped defects, discoloration

crowns, tooth shape anomalies, teeth position anomalies, systemic

lesions of a group of teeth, for replacement of metal ones in the anterior section,

plastic crowns that do not match natural teeth.

Contraindications:

Periodontitis, localized vertical abrasion with deep

bite, lack of space to ensure sufficient crown thickness,

deep bite, deep incisal overlap.

Preparation of teeth for porcelain and plastic crowns.

When making a porcelain crown, a much larger

layer of hard tissue than in the manufacture of metal. It's necessary

To ensure the strength of the crown, its walls must have a thickness of not

less than 1.2-1.5 mm. The tooth stump is given a conical shape. Depending

Depending on the location of the damage to the hard tissues of the tooth, it is prepared differently.

If the cervical part of the tooth is preserved, then the stump is prepared with a ledge. In that

In this case, the edge of the gingival crown does not sink into the gingival pocket. At

damage to the cervical part of the tooth, porcelain crowns cover

completely the tooth pulp and are immersed in the gingival groove by 0.5 mm.

Grind off with a one-sided separating disc

approximal surfaces of the tooth so that in the cervical

area a ledge formed. Then the cutting edge is shortened and, moving away from

cervical area of the tooth by 1-1.5 mm, remove a layer of tissue from the vestibular

and oral surfaces. Having formed a stump in the form of a cone, proceed to

formation of a ledge from the vestibular and oral surfaces. Narrow

Using a diamond cylindrical bur, a layer of tissue is removed, retreating by 1-1.5 mm.

The formed vestibular and oral ledges are connected to

approximal, resulting in a circular ledge.

To prepare a plastic crown, the tooth is prepared in the same way.

Combined crowns.

1). Metal-acrylic.

Teeth are prepared in a similar way to solid teeth, but more tissue is removed

– up to 2 mm (for the thickness of the metal + plastic layer). The plastic is fixed by

counting retention points (funnels, balls).

2). Telescopic crowns

Used as fasteners for removable plastic and biogenic

prostheses.