**ARTIFICIAL TEETH**

To replace lost teeth, artificial teeth are fixed to the bases of removable dentures. They are made of plastic or porcelain. Artificial teeth are distinguished by color, size and shape (style). All types of manufactured teeth are presented in a special album. The color of artificial teeth has a natural transition from a lighter color of the translucent cutting edge to a more intense and dark color of the cervical area.

The following sets of teeth are produced: 6 front teeth of the upper and lower jaws, reinforced with wax on a plastic plate; 8 side teeth and complete sets of 28 teeth. In addition, plastic artificial teeth are produced in cassettes, in separate cells of which teeth of the same color, size and shape are packaged. Such packaging is convenient for their economical use in the manufacture of small removable dentures.

There are three main shapes of front teeth: rectangular, wedge-shaped and oval. The color of the teeth when making removable dentures is selected using a set of plastic teeth of 13 colors - from 28 to 40).

It is necessary to take into account that the domestic industry produces artificial teeth of only one type - for orthognathic bite. In this regard, in the presence of a progenial relationship of edentulous processes, it is necessary to carry out the so-called cross-setting: the chewing teeth of the upper jaw on the right are installed in the prosthesis on the lower jaw on the left and vice versa. At the same time, leading foreign companies have been producing special sets for other types of bite for many years.

***Plastic artificial teeth*** compared to porcelain, have a number of disadvantages. These include increased abrasion of teeth, which not only reduces chewing efficiency, but can also cause various complications: traumatic node, Popov-Godon phenomenon, development of deep incisor overlap with changes in the topographic relationships of both the dental arches and elements of the temporomandibular joints.

*Traumatic node -*This is a formation in one or another area of ​​the dental row of traumatic overload. A traumatic node can occur with complete preservation of the dental rows and with a violation of their integrity. Its main symptom is the displacement of teeth or damage to the supporting apparatus of a group of teeth.

*Popov-Godon Phenomenon*- displacement of teeth in different directions after the formation of a defect in the dental arch, leading to deformations of the occlusal curve.

In case of deep incisor overlap, the front teeth of the upper jaw overlap the antagonist teeth by half the height of the crowns or more without their contact.

The wear resistance of plastic teeth does not meet clinical requirements, so the period of use of removable dentures should not exceed 3-4 years. Otherwise, functional overload of the remaining natural teeth may occur, since the latter wear out much more slowly.

Artificial plastic teeth produced by the domestic and foreign medical industry have a relief of the chewing surface similar to the relief of natural teeth. The use of such teeth in the manufacture of removable dentures leads to the emergence of so-called throwing moments, which cause strong painful shocks that disrupt the fixation and stabilization of the dentures. In order to eliminate these shocks, careful correction of the occlusal surface under the carbon paper is required, which consists of significant grinding of the tubercles of artificial teeth.

In addition, plastic artificial teeth, like any plastic, are capable of absorbing moisture, as a result of which their color changes over time.

The domestic industry has developed sets of teeth called "Estedent", "Estedent-02", "Estedent-03" and "Estedent-D" for prosthetics in children. Due to the introduction of a luminophore into them, "Estedent" teeth have a fluorescent effect, increased resistance to abrasion, cracking and deformation.

The positive properties of artificial plastic teeth are their non-toxicity and simple manufacturing technology. In addition, plastic teeth are easy to polish. Previously, a positive property of such teeth was considered to be their strong chemical connection with the base of the prosthesis (as homogeneous materials), but recent studies have proven that the adhesion of plastic teeth to the plastic base occurs mechanically.

***Porcelain artificial teeth*** with platinum crampons began to be used in the 40s of the last century. Porcelain teeth were invented by the pharmacist Duchateau from France. Later, porcelain teeth began to be manufactured in factories in accordance with not only cosmetic but also functional requirements.

Porcelain teeth are made from medium-sintered silicate masses fired in a vacuum. Domestic porcelain teeth are produced by the St. Petersburg plant "Medpolymer" in the form of sets similar to sets of plastic teeth. Porcelain teeth are distinguished by color, shape and size. Due to the lack of chemical affinity between porcelain and

Plastic artificial porcelain teeth are fixed in a plastic base mechanically. In this regard, the following porcelain tooth designs are distinguished:

a) crampon porcelain teeth are used to eliminate the defect in the frontal section. A distinction is made between button and cylindrical crampons. Button crampons have a thickening at the free end, due to which the tooth is held in the base. Cylindrical crampons are bent, and due to this they are held in the base of the denture. Crampons can be made of platinum, nichrome, stainless steel, silver- and gold-palladium alloys. The best material is platinum, since its coefficient of thermal expansion and porcelain are almost the same, due to which cracks do not form during the firing of teeth during their manufacture. Recently, palladium alloy grade PdSr-20 has been used to make crampons. Crampons can be longitudinal, transverse or diagonally located depending on the size of the lingual side platform. Two crampons are placed on the tooth platform, one crampon is installed in the upper lateral incisors;

b) diatoric (perforated) porcelain teeth are used to eliminate defects in the chewing teeth area. In shape, they repeat the crown part of natural teeth - premolars and molars. These teeth are fixed in the prosthesis due to the presence of an internal mushroom-shaped cavity. Hardened plastic, entering this cavity, reliably fastens the artificial teeth to the base;

c) porcelain teeth "Sazur" (self-sharpening teeth according to I.S. Rubinov) are intended for removable dentures, are hollow bodies with internal bridges located in different directions. In the finished denture, the chewing surface of such teeth has protruding edges of mineral mass bridges with cutting edges and layers of plastic located between them in fissures. As the plastic wears out, conditions are created in the fissures for self-sharpening of the chewing surface.

Porcelain teeth have a number of advantages over plastic ones: 1) having a higher hardness (270-300 kg/cm2), which corresponds to the hardness of tooth enamel, they grind food better, while reducing the pressure on the tissues of the prosthetic bed, due to which the processes of their atrophy slow down;

2) perfectly imitate natural teeth, do not change color;

3) have biological indifference;

4) in functional terms, removable dentures with porcelain teeth are more durable than those with plastic teeth; the chewing surface of such teeth practically does not wear out even after 10 years.

Negative properties of porcelain teeth:

1) labor-intensive manufacturing process;

2) mechanical fastening to the prosthesis base;

3) fragility;

4) difficulties with grinding;

5) patients complain about "knocking" of teeth. Contraindications to the use of porcelain teeth:

1) insufficient interalveolar space in the position of the central jaw relationship;

2) significant discrepancy in the sizes of the alveolar arches. When making dentures with porcelain teeth, it is necessary

accuracy and precision in work at all clinical and laboratory stages. Particular attention should be paid to the precise determination of the central relationship of the jaws so that the occlusal surface of the teeth on the finished prostheses is not corrected to avoid their breakage.

Rubinov's chewing tests showed that the chewing efficiency of dentures with porcelain teeth is higher than that of dentures with plastic teeth.

Based on the results of the comparative assessment, it can be concluded that porcelain and plastic teeth do not exclude, but complement each other and are the materials of choice in each specific case.

**Rules for selecting artificial teeth.** The color, size and style of artificial teeth are selected by the doctor, based on the patient's age, gender, profession, skin color, eyes, hair, remaining teeth and jaw shape, the degree of atrophy of the toothless alveolar processes (parts), the size of the upper lip and the defect of the dentition. For elderly patients who drink strong tea and smoke a lot, the color of artificial teeth should have a yellow tint, and vice versa, for blondes, blue-eyed young people and women, artificial teeth are selected in light shades.

The longitudinal and transverse size of artificial teeth, their style are determined by the shape of the face in full face and in profile, the size of the defect and the alveolar part (process). In case of weak atrophy of the alveolar process, artificial teeth are selected with a flat neck and, conversely, in case of significant atrophy - with a more convex one.

When determining the height of artificial crowns in the anterior section, the degree of atrophy of the alveolar part (process) is assessed and purely aesthetic goals are pursued. With a smooth, low alveolar part in the anterior section, artificial teeth should be widened in the cervical area and have slightly beveled surfaces on the inner side. If the alveolar part in the anterior section is high and thin, then teeth should be selected that are narrowed in the cervical part and significantly beveled on the inner side.

When selecting front porcelain teeth, it is necessary to take into account the depth of the incisal overlap. In case of deep overlap, teeth with transversely located crampons are selected, closer to the neck. In this case, the strength of the porcelain tooth attachment to the prosthesis base will not be violated. If the overlap is significant, then plated teeth with metal protection or plastic teeth are installed. In case of small defects of the dental arch, narrowed due to the displacement of teeth limiting the defect, porcelain teeth are selected with longitudinally located crampons.

Lateral porcelain teeth are selected based on the size of the defect, the degree of expression of the alveolar parts (processes) and their relationships in the transverse and sagittal planes, since when their non-working surface is sharpened, the size of the canals and cavity decreases, which worsens the conditions for their fixation in the prosthesis base. At the same time, a distance of at least 2 mm must be left between the artificial teeth and the model for the prosthesis base.

***Plated teeth*** are not currently used. They were used to replace a defect in the frontal area with deep incisor overlap, if the teeth of the lower jaw "knock out" the artificial teeth from the upper jaw denture. A plated tooth is a crampon porcelain tooth with a metal palatal protective plate soldered to the crampons, which has a long anchor part that is attached to the denture base.

TYPES OF PLACING ARTIFICIAL TEETH

Artificial teeth in the basis of the prosthesis, depending on the specific clinical picture, can be placed on the “joint” and artificial gum.

The upper front teeth are installed on the "grinding" with a well-defined alveolar process, a shortened upper lip, biprognathic and prognathic bite. For cosmetic reasons, with minor atrophy of the alveolar process, the first premolars in the denture for the upper jaw can also be ground to the gum. The process of this type of installation is quite labor-intensive. Grinding is done so that each artificial tooth fits tightly with its cervical part to the gingival edge of the alveolar process. This type of installation of artificial teeth provides a good cosmetic effect. To fix the dentures with this type of installation, gingival clasps or pads are used.

In case of significant atrophy of the alveolar process, frontal artificial teeth are installed on artificial gum, which is much simpler, since there is no need to grind the artificial tooth to the alveolar ridge. Artificial teeth inin the lateral section in all cases they are placed on artificial gum. This helps to properly distribute chewing pressure and achieve greater stability of the prosthesis during chewing or speech.

An artificial gum is a base plate located between the artificial teeth and the alveolar process. Such a plate can restore bone loss in a deformed jaw. In case of uneven atrophy of the alveolar process, some of the artificial teeth can be placed on the ridge, and some can be installed on the artificial gum.

RULES FOR GRINDING ARTIFICIAL TEETH

Before starting to grind the artificial tooth to the model, it is important to orient it. In this case, its length, width and relationship with the antagonists are determined. The selection and arrangement of artificial teeth is carried out according to the landmarks applied by the doctor on the vestibular surface of the occlusal roller. The adjustment of the artificial tooth to the model is carried out on a grinding motor with carborundum wheels of various shapes and sizes.

When processing a tooth, first it is given the necessary width, then its gum part is adjusted, then the relationship with the antagonists is clarified. Places that interfere with the closure of the dental arches are ground down. The ground tooth should have the correct anatomical shape or, better yet, the shape of a symmetrical tooth. Grinding plastic teeth is much easier than porcelain teeth, due to the characteristics of the material, the absence of crampons and canals. Plastic teeth do not have the same restrictions as porcelain teeth.

Porcelain teeth must be filed very carefully so that the crampons are not ground off and their attachment does not weaken. In addition, to avoid overheating the tooth and the formation of microcracks in it, it is necessary to constantly moisten its surface and avoid strong pressure on the grinding wheel.

The fastening of porcelain teeth with button crampons in the denture base is quite strong. It is advisable to pre-flatten cylindrical crampons and bend them downwards in order to better fix them in the denture base. It should be remembered that between

The surface of the tooth and the alveolar process must be covered by a layer of base material of at least 2-3 mm.