Complete Absence (Destruction) of Crowns of Teeth Indications for the Use of Pin Structures

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ABSTRACT

The Purpose of the study to improve the quality of orthopedic treatment of patients with low and destroyed clinical crowns of teeth by improving the designs of the stump pin inlay and artificial crown.

Keywords:

Topicality.

Analysis of domestic and foreign literature shows that by the time of the beginning of our research, the task of prosthetics of patients with low and destroyed clinical crowns of teeth has not yet been finally solved. A destroyed and low clinical crown of a tooth is a complex and difficult to treat case that cannot provide a full fixation of a fixative prosthesis [Dyatlenko K.A. et al., 2012; Zervatto T.I., 2014; Nesterov A.M., 2016]. In the scientific literature, patients with low and destroyed clinical crowns of teeth are quite common, in terms of prevalence, low and destroyed clinical crowns make up 16.7% [Liman A.A., 2010; Lebedenko I.Yu. et al., 2012], and according to foreign authors 12% [Etman M.K., 2013; Woolford M.J. et al., 2015]. One of the directions in solving this problem is to improve the methods of manufacturing stump pin inlays and artificial crowns used for prosthetics of defects of natural crowns [Bagmutov V.P., 2012; Zervatto T.I., 2014]. For this purpose, all kinds of metal stump pin inlays and artificial crowns can be successfully used, which are fixed on the roots with the help of one or more pins and on the stump of the tooth [Lebedenko I.Yu. et al., 2012; Pybak V.A. et al., 2013; Sochnev V.L. et al., 2013; Khrynin S.A. et al., 2013; Verstakov D.V. et al., 2014; Zholudev S.E. et al., 2014; Ibragimov T.I. et al., 2014; Onopa E.N. et al., 2014]. These structures should replace the lost structure of the crown of the tooth, reliably fix the artificial crown on the stump and, consequently, ensure the stability of the restoration due to the redistribution of chewing forces during functional and parafunctional loads [Sochnikov V.L. et al., 2013; Nikonov A.Yu., 2014; Klemin V.A. et al., 2016; Semen S. et al., 2016]. Despite the use in everyday practice of modern technologies for prosthetics of patients with low and destroyed clinical 4 crowns of the tooth, it should be noted that the complication rate when using cast stump pin tabs and artificial crowns remains quite high to 16% [Sahakyan Sh.Kh. et al., 2011; Arutyunov S.D. et al., 2013; Ryakhovsky A.N. et al., 2013; Byakova S.F.,

2014; Sabeeva I.A. et al., 2016]. The most common complications (9.1%) include the decementation of an artificial crown from a tooth stump and a stump pin inlay, the cause of which may be insufficient height of the stump, as well as the lack of additional retention points [Arutyunov S.D. et al., 2013; Zhulev E.N. et al., 2014; Motorkina T.V. et al., 2015]. A promising direction in solving this problem is the further improvement of the classical designs of the cult pin inlay and artificial crown. Finding the optimal shape of the stump, taking into account the anatomical features of a particular group of teeth, will increase the reliability of fixation and prolongation of the service life of artificial crowns on teeth with severely destroyed and low clinical crowns. The degree of development of the research topic. Recently, there has been a large number of studies on the orthopedic treatment of patients with low and destroyed clinical crowns. Many scientific solutions have been undertaken to improve the orthopedic treatment of patients with low and destroyed clinical crowns to reduce the percentage of all kinds of complications, errors and shortcomings of known methods of prosthetics. However, given the large percentage of complications that occur during the traditional orthopedic treatment of patients with low and destroyed clinical crowns, it proves that to date there are no effective methods of orthopedic treatment of patients with this pathology. These aspects determined the purpose and objectives of the study. Solid stump inlays are made, as a rule, when restoring single-root and limited in multi-root teeth with the complete destruction of the natural crowns of the teeth as a result of the carious process or the breakage of the crown part due to injury. When restoring multiroot teeth, where it is required to make a pin in each root canal, it is impossible to make a monolithic stump tab due to the non-parallelity of the root canals. This situation is solved by creating a composite (collapsible) cast stump inlay

The Purpose of The Study: to improve the quality of orthopedic treatment of patients with low and destroyed clinical crowns of teeth by improving the designs of the stump pin inlay and artificial crown.

Methods:

1. Modeling of the cult tab on phantoms.
2. Analysis of 5 radiographs.
3. Clinical reception of 5 patients.

Materials: impression material, plaster, modeling wax, models, modeling tools, ash-free pins, sweeps, radiographs, KHS alloys.

Outcomes. Before starting work in the clinic, we worked out the manufacture of stump pin inserts on phantoms in the educational dental laboratory. We took into account the main clinical requirements for the root, which include: stability in the hole (intact circular ligament), the absence of a pathological process, sufficient thickness (at least 1.5-2 mm), sufficient obturation with filling material (at least 1/3 of the apical opening). The root canal was opened and expanded in the usual way with the help of special endodontic instruments and sweeps. At the end of the procedure, the walls had a regular conical shape, and the cavity was box-shaped. Making stump inlays, we used a two-layer one-time impression, using silicone masses (basic and corrective). The channel was pre-dried with special paper pins. Standard spoons were used, but you can also make an individual one. We store ash-free pins without touching each other on the entire prepared part of the tooth. According to the obtained impressions, a collapsible plaster model (for multi-rooted teeth) was made in the laboratory, displaying the inner surface of the formed root canals. After receiving the model, the technician modeled the tabs of the necessary design. Next, the stump tab was processed. Cast from KHS alloy, then checked the design in the oral cavity. Fixed the finished pin tab in the root.

In the process of work, studying X-rays, we were faced with complications such as perforation and root breakage. After analyzing these complications, we were convinced of the importance of strict adherence to the clinical requirements for the root.

Conclusion. Frequent breaks in the restoration of the crown part of the tooth with anchor and

fiberglass pins make the use of the stump inlay the most effective and optimal method for microprosthetics.

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