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STUDYING THE PROPERTIES OF EQUIA VERSUS AMALGAM

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ABOUT ARTICLE

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Abstract: Surgical intervention is inevitable when the demineralization of the hard tissues of the tooth has reached an irreversible stage and caries cannot be prevented, or when caries has already formed and bacteria have gained access to deeper layers of tooth tissues.

INTRODUCTION

Surgical intervention is inevitable when the demineralization of the hard tissues of the tooth has reached an irreversible stage and caries cannot be prevented, or when caries has already formed and bacteria have gained access to deeper layers of tooth tissues (1). However, even if a decision is made on surgical intervention, the preventive component of treatment should not be overlooked. The principles of minimally invasive treatment underlie both the preparation of the cavity and the selection of restoration materials. When choosing materials for the restoration of hard tissues of a lost tooth, first of all, pay attention to the characteristics of the restoration material. In accordance with the principles of minimally invasive dentistry, preference is given to biocompatible and bioactive materials with excellent strength characteristics, chemical adhesion and high retention in the tooth structure. In other words, materials that preserve the hard tissues of the tooth as much as possible: amalgam is a material that has been traditionally used to restore chewing teeth since the 19th century. Amalgam is also

recommended for use as a restorative material in accordance with the classical principle of Black's macroretension. However, amalgam restorations have the following disadvantages and weaknesses (2)

The need to prepare the retention space at the expense of healthy tooth tissues;

The integrity of the crown ridge is violated, which reduces the strength of the tooth;

Increased risk of cracks in the remaining teeth (mainly buccal and lingual) due to the shape of the prepared cavity;

Insufficient adhesion of amalgam to tooth tissues; reduced aesthetics.

In addition, amalgam restorations can have adverse local and systemic effects on the body (3). Locally, amalgam can cause erythematous lesions of adjacent soft tissues of the oral cavity, and exposure to free mercury in amalgam can manifest itself systemically in the form of hypersensitivity reactions (3). Although amalgam demonstrates good durability in a wide range of restorations that withstand high loads, many amalgam restorations require replacement after a while due to the physical and chemical effects of the oral environment to which the amalgam is exposed (4). The main reason for the loss of functionality of amalgam restorations is secondary caries (5). For these reasons, amalgam fillings need to be replaced and will be replaced with new materials that are currently available on the market. The significantly improved properties of glass ionomer materials are the reason that they are becoming increasingly popular as a material for the manufacture of permanent restorations in the field of crowns EQUIA (GC, Japan) consists of two components: Fuji IX GP Extra cement and G-Coat Plus protective coating, According to the manufacturer's specification, this is the first glass ionomer material that can be It can be used for the manufacture of permanent restorations of chewing teeth, including occlusal surfaces that experience the greatest loads. EQUIA is available in eight shades, which allows you to choose the most suitable material for a particular case. This restoration material is not sensitive to moisture and chemically combines with tooth tissues, which makes restoration very easy. The application is also simple and fast, as the mixed material is injected into the cavity in single portions from the capsule. Fuji GP IX Extra contains special glass filler particles that guarantee a highly aesthetic finish. The material has all the advantages of glass ionomers, including bioactivity and chemical adhesion to tooth tissues. Preparing the cavity for restoration with EQUIA does not require the removal of healthy hard tooth tissues. Before installing the restoration into the cavity, it can be conditioned with a dentin conditioner.

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