

## Invasive Treatment of Caries with General Anesthesia – A Case Report

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### Abstract

**Background:** Despite an overall caries decline in children, still 50-60% of carious primary teeth of 6-year-olds remain untreated, in 3-year-olds 13%. There are an increasing number of poli-caries patients with insufficiently treated primary teeth. Therefore, early treatment is fundamental. The goal is to treat caries and inflammation of the dental pulp in one visit to the day's surgery of the child by applying analgesia with general and local anesthesia.

**Case Report:** A child, a boy of 5 years complains of severe periodic toothache 65 was brought by his parents for examination and treatment at the University Medical Dental Center of the Faculty of Dental Medicine, Varna, Bulgaria. The child suffers from systemic medical condition Bronchial asthma. It is directed for pediatric dentistry treatment by a pediatrician from the University Hospital "St. Marina", Varna. The treatment was conducted on general anesthesia with nasotracheal intubation and sedation of the child in the operation of the University Medical Dental Center at the Faculty of Dental Medicine, Varna.

**Conclusion:** The operative technique for cavitated lesions of temporary teeth is minimally invasive cavity preparation. The fillings must be of modern adhesive restorative dental materials.

**Keywords:** caries, cavitated lesions, general anesthesia, invasive treatment

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### I. Introduction

The diagnosis of caries disease develops in two main areas - detect the earliest changes in the enamel and the detection of the factors leading to the development process itself [1]. Preventative non-operative treatment at the initial initiation of caries applies to the first two stages. For the restoration of reversible changes in tooth structure of enamel at initial no cavitated carious lesions with the possibilities to stimulate the regenerative capacity of the hard dental tissues for remineralization [2]. Despite an overall caries decline in children, still 50-60% of carious primary teeth of 6-year-olds remain untreated, in 3-year-olds 13%. There are an increasing number of poli-caries patients with insufficiently treated primary teeth. Therefore, early treatment is fundamental [3]. The goal is to treat caries and inflammation of the dental pulp in one visit to the day's surgery of the child by applying analgesia with general and local anesthesia.

### II. Case Report

A child, a boy of 5 years complains of severe periodic toothache 65 was brought by his parents for examination and treatment at the University Medical Dental Center of the Faculty of Dental Medicine, Varna, Bulgaria. The child suffers from systemic medical condition Bronchial asthma. It is directed for pediatric dentistry treatment by a pediatrician from the University Hospital "St. Marina", Varna. The treatment was conducted on general anesthesia with nasotracheal intubation and sedation of the child in the operation of the University Medical Dental Center at the Faculty of Dental Medicine, Varna.

#### Caries status

**Methodology:** A dental status is assessed and registered by the WHO criteria.

Units of observation: deciduous teeth and surfaces with/without carious lesions, active carious lesions at the level of a diagnostic threshold level d1b.

- Diagnostic Scale – codes:
  - d1b - white enamel lesions visible without drying

- d2 - white enamel cavitated lesion
- d3+d4 - dentin lesion with and without affecting the pulp
- A - active (d1b, d2)
- NA - inactive (d1b, d2)
- Reversible carious lesions - (d1a, d1b, d2)
- Irreversible carious lesions - d3 and d4

Diagnostic Scale – codes: d1b - white enamel lesions visible without drying. d2 - white enamel cavitated lesion. d3-d4 - dentin lesion with and without affecting the pulp. A - active (d1b, d2). NA - inactive (d1b, d2). Reversible carious lesions - (d1b, d2). Irreversible carious lesions - d3 and d4. We found out from the review the presence of caries lesions d3 of the teeth 55, 64, 84, 85 and pulpitis chronica ulcerosa 65. After placement of local anesthesia for each of the treated teeth with a local anesthetic without corigens, we switched to surgical treatment of caries teeth. Cavities affected by caries were treated with minimally invasive preparation techniques. After disinfection treatment, were filled with a compomer/Dyract<sup>R</sup> XP/ for recovery, Figures 1,2,3,4 and 5. On the non-cariou pit and fissures and wells we placed a sealants to achieve preventive obturation techniques and results. Tooth 65 with a diagnosis of pulpitis chronica ulcerosa treated with the vital pulpotomy method. After the pulpotomy, the treatment of the tooth 65 was completed with a complicated obturation to restore the integrity and anatomy of the tooth with Dyract<sup>R</sup> XP, Figure 2. We have prescribed five days of antibiotic treatment with a broad-spectrum antibiotic by weight and polyvitamins and an analgesic child's syrup. For the normalization of the intestinal flora, we prescribed a probiotic for five days.

### **III. Discussion**

An important point in the diagnosis, determining the need for treatment, the selection of a treatment method and means to define the nature of the carious process and to distinguish the active stationed and regressed carious lesions [1]. When you have established control over risk factors can proceed to the remineralization of available primary lesions and successfully stationing and / or regression of carious process [7]. Based on the high clinical success rates, compomers with self-etch adhesives can be recommended for restorative therapy in anterior and posterior primary teeth [4,5,6]. Severe inflammatory infections of pulp and periodontal disease are necessarily treated with antibiotic treatment [8,9].

### **IV. Conclusion**

1. The operative technique for cavitated lesions of temporary teeth is minimally invasive cavity preparation.
2. The fillings must be of modern adhesive restorative dental materials.

**Figure legend**



**Figure 1.** Intraoral inspection of caries approximalis and occlusalis d3 of tooth 55



**Figure 2.** Intraoral inspection of caries occlusalis d3 of tooth 64 and d4/pulpitis chronica ulcerosa/ of tooth 65



**Figure 3.** Intraoral inspection of caries occlusalis d3 of tooth 64 and d4 of tooth 65. Completing treatment with obturating with Dyract<sup>R</sup> XP



**Figure 4.** Intraoral inspection of caries occlusalis d3 of tooth 84 and d3 of tooth 85



**Figure 5.** Intraoral inspection of caries occlusalis d3 of tooth 84 and d3 of tooth 85. Completing treatment with obturating with Dyract<sup>R</sup> XP

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