

# «COLLOST» IN THE SURGICAL TREATMENT OF RADICULAR CYSTS IN MAXILLA

E.V. MAKSIMOVITCH, A.A. RACHKOV

BELARUSIAN STATE MEDICAL UNIVERSITY  
\*E-MAIL: IP-C@YANDEX.RU

[ENGINEERING OF BIOMATERIALS 138 (2016) 17]

## Introduction

Radicular cysts of the jaw bones are from 7 to 12% of all diseases in the maxillofacial region [1]. The outpatient surgical dentistry radicular cysts account for 78-96% of the total number of cysts. Among the operations performed by the dental surgeons as an outpatient procedure, surgery for radicular cysts of the jaws occupies second place after a tooth extraction. Cysts originating from the front upper jaw teeth constitute, according to the literature from 30 to 47% [2].

The main task of the radicular cysts surgical treatment of the jaws is to save the teeth located in the area of the cyst, and the restoration of their functions. Many authors believe that, the main method of surgical treatments cystectomy with simultaneous root resection of the causal tooth without replacement of the bone defect or with bone defect replacement of osteoplastic material. This operation should be performed in the case of existing the tooth root in cyst cavity is not more than 1/3 of its length. A deeper immersion of the root in cyst cavity makes such teeth functionally useless and leads to their early loss.

To prevent the early complications of cystectomy surgeons began to fill bone cavity after removing the cyst with biocomposite materials. Due to the fact that in the case of the standard surgical operation there is a reduction of a blood clot, and this often leads to infection of the bone cavity and following complications.

«Collost» is sterile bioplastic collagen material. It is made of bovine collagen and fully preserving its fibrous structure. «Collost» is a matrix for guided tissue regeneration. «Collost» is collagen absorbable material, it creates transition matrix, which stimulates the body's immune system, activation of granulocytes, macrophages and fibroblasts, the introduction of «Collost» produced new collagen fibers, filling the cavity in the area of implantation, then the implant is gradually resorbed and replaced by autologous tissue. In applying the product «Collost», which acts as a matrix for guided bone regeneration, there is an acceleration of movement of osteoblasts and moving them to a greater distance.

The aim of trial is to study the possibility of applying the material «Collost» at the outpatient dental surgery at carrying out of cystectomy.

## Materials and Methods

We used the material «Collost» in the replacement of the jaw bone defects in 5 out patients in 5 outpatient clinic in Minsk, Belarus. These patients were undergone cystectomy surgery of the apex root resection because of radicular cysts in the anterior region of the upper jaw made by a standard protocol.

## Results and Discussion

Patients were observed during the postoperative period until the sutures removal for 7 days, 3 months after the surgery. There were carried out the control X-ray examinations to see the bone recovery. Anti-inflammatory therapy during the postoperative period was prescribed as standard.

There were observed no postoperative inflammatory complications in all the patients. During the postoperative period there was absent expressed postoperative soft tissue swelling in patients. The pain in the operated area was preserved no more than 1-2 days; patients did not take analgesics more than 1-2 times during the first 3 days. The increasing of the body temperature has not been observed.

There were no observed cases of «Collost» rejection in the patients, and this is indicating good biocompatibility of the material.

## Conclusions

The filling of the jaw bone postoperative defects by collagen absorbable material «Collost» is a method of prevention of postoperative complications in surgical treatment of the upper jaw radicular cysts in the anterior region.

## References

- [1] Yu. A. Medvedev et al.: Optimization of surgical treatment of patients with fractures of the lower jaw within the dentition and bone defects using the material «Collost». Russian Dental Journal 4 (2013) 44-47.
- [2] S. Y. Ivanov et al.: The development of biomaterials for osteoplasty on the basis of bone collagen. Institute of Dentistry 4 (2005) 1-3.