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Variant For Prevention And Treatment Of Odontogenic Upper Jaw's Sinusitis.

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ABSTRACT

Closure of perforations of the maxillary sinus is not fully resolved problem due to individual anatomical features of the interrelation between the teeth of the upper jaw and maxillary sinus, the frequent development of destructive periapical infectious foci, and the absence of the only optimal method of treatment, as well as the possibility of development of odontogenic perforated maxillary sinusitis without timely diagnosis and treatment of perforation of the maxillary sinus.

Keywords: prevention, gingival matrix, maxillary sinus perforation, membrane duplication, directed tissue regeneration, parachute suture.

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INTRODUCTION

Prevention and treatment of patients with odontogenic perforated maxillary sinusitis are urgent problems of surgical dentistry. Patients with perforated maxillary sinusitis account for more than 50% of the total number of patients with maxillary sinus pathology of odontogenic etiology.

Modern surgical dentistry and maxillofacial surgery have in their arsenal a sufficient number of methods and techniques for closing perforations, messages, joints and fistulas of the maxillary sinus of odontogenic etiology. However, a critical review of known techniques and methods for closing odontogenic perforations of the maxillary sinus suggests that orthopedic rehabilitation of this category of patients is significantly hampered by the lack of sufficient and quality bone tissue of the alveolar process of the maxilla and significant changes in the architectonics of the mucous membrane of the gum.

The complexity of orthopedic rehabilitation of patients after treatment of odontogenic perforated maxillary sinusitis consists in a small number, and sometimes even a complete absence of bone tissue of the alveolar process of the upper jaw, a significant reduction in the area of the attached, keratinized gingiva. These problems are especially acute when using the method of dental implantation in complex orthopedic rehabilitation - the most modern and promising technique. In 10% of cases, orthopedic rehabilitation is not possible even with the use of removable plate prostheses.

Thus, despite the variety of existing methods, the frequency of postoperative relapse remains high and amounts to 14 to 24% according to the literature data, therefore the problem of prevention and treatment of odontogenic perforations of the maxillary sinus bottom is urgent and requires the development of more effective methods of complex treatment.

Goal. The purpose of this study is to develop and implement the method for closing odontogenic perforations of the maxillary sinus by the method of membrane duplication by the gingival matrix.

MATERIALS AND METHODS

The gingival matrix is a membrane based on porcine collagen I and III types without cross-links, which consists of two layers: dense layer stable materials under conditions of open healing, and a spongy layer ensure the stabilization of the blood clot, and cell growth. Advantages of the gingival matrix in comparison with the conventional collagen membrane are the following: the possibility of open-wound management, high strength and stability, early vascularization and integration with surrounding tissues, low microbial contamination of the surface of the dense layer, resulting in a high resistance to infection.

As the gingival matrix in this study, the material "Mucograft" from "Geistlich Pharma AG" (Switzerland) was used.

26 patients with a diagnosis of chronic periodontitis of premolars and molars of the upper jaw with the presence of pronounced foci of periapical destruction in the region of the bottom of the maxillary sinus with radiographic evidence of a violation of the latter's integrity were observed. In all patients, chronic periodontitis was diagnosed in the remission phase, and there were no significant pathological changes in the maxillary sinus. There were also no clinical manifestations of maxillary sinusitis. The treatment of patients was as follows: under the infiltration anesthesia, tooth extraction was performed (in the case of multi-rooted teeth, the extraction was fragmentary). After carrying out haemostatic measures, the presence of a direct communication between the socket of the extracted tooth and the cavity of the maxillary sinus was diagnosed visually and by probing with a blunt probe - perforation of the latter. After a thorough revision of the socket of the removed tooth, which consisted in removal of pathological granulations, remains of the cyst shell and bone destruction sites, the absence of purulent exudate in the sinus cavity (through the perforation) was checked. The operating field was treated three times with an antiseptic. At the bottom of the socket of the removed tooth, the gingival matrix "Mucograft Seal" was placed in the side of the perforation with a dense side to the sine, closing the perforation. If the perforation was significant (more than 3 mm), the gingival matrix was fixed with a suture. The cavity of the socket was densely filled with osteoplastic material with collagen to the level of the alveolar bone. Above the osteoplastic material, the second gingival matrix was placed in a dense side into the oral cavity. Matrix was fixed by nodal sutures with a 5/0 thread in a circle.

Sutures were removed for tenth - twelfth day. On the first - the second day, the wound surface was covered with a fibrinous coating of whitish color, which gradually was rejected and by the tenth - twelfth day it took the form of surrounding soft tissues. After 12 weeks, a control X-ray study was performed, and in the case of a sufficient amount of bone tissue, implant treatment was performed according to a conventional technique.

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RESULTS

The result of performed treatment of patients with perforation of the maxillary sinus of the odontogenic etiology using the above described technique was the preservation of the bone tissue of the alveolar process and the absence of violations of the soft tissue architecture allowing a full orthopedic rehabilitation. Most patients 19 patients (73.1%) underwent dental implantation as the most modern method of orthopedic rehabilitation. In 9 (47.4%) cases, a two-stage implantation procedure was used in 7 (36.8%), one-stage in three cases (15.8%), an immediate orthopedic load was applied. The remaining 7 (26.9%) patients underwent orthopedic rehabilitation using non-removable bridges or removable clasp prosthesis. However, in this case, the absence of deformation of bone and soft tissues promoted full-fledged orthopedic rehabilitation. Thus, the application of the method of perforation plastic surgery of the maxillary sinus by the membrane duplication by the gingival matrix is the prevention of the development of odontogenic maxillary sinusitis.

DISCUSSION

The advantages of this technique are:

- Reliability of the closure of perforations of the maxillary sinus;
- the absence of additional incisions of the mucous gum, mobilization and movement of the flap, which allows to preserve the individual architectonics of tissues in the region of the extracted tooth;
- the absence of the second operating field (there is no need to take donor tissues);
- the relative technical simplicity of the proposed method of surgical treatment.

CONCLUSION

Thus, the proposed method for closing odontogenic perforations of the bottom of the maxillary sinus in the complex treatment of odontogenic perforated maxillary sinusitis is effective, easily reproducible and can be considered a method of choice among similar techniques.

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