IJIMM, Volume 2, Issue 6, 2024 ISSN: 2995-5319
http://medicaljournals.eu/index.php/IJIMM/issue/view/3
INTERNATIONAL JOURNAL OF INTEGRATIVE AND MODERN MEDICINE

New Methods for Treating Inflamed Dental Alveoli and Characteristics of Osteoplastic Materials Used for Treatment

Samadova Shaxzoda Isokovna

Until now, many researchers have been and are engaged in the development of techniques that can reduce the resorption of bone tissue of the molar part after tooth extraction surgery.

The tasks of the researchers are developing in several directions: some use various methods of acting on the processes of bone regeneration using physiotherapeutic methods, another group of researchers considers it important to reduce the atrophic processes of the jaws after tooth extraction with timely prosthetics, the third group pays special attention to filling the holes with various transplantation materials, which contributes to the preservation a sufficiently high alveolar ridge, optimal conditions are created for reparative regeneration in the area of the sockets of extracted teeth.

Physiotherapy as a method of treating alveolitis has found application in complex therapy, which has shortened the healing time of infected tooth sockets.

Many authors have successfully used various physiotherapeutic methods in the complex treatment of alveolitis.

Fluctuarization is used, which has an analgesic effect, accelerates the course of reparative processes, and stimulates regeneration. Laser therapy is also used to treat this disease. Helium-neon laser radiation has shown that it has an anti-inflammatory effect, normalizes microcirculation, reduces vascular permeability, has a pronounced analgesic effect, stimulates tissue regeneration, etc. Irradiation parameters: power density 100-200 2 mW/cm, exposure - 2 min.

M.Yu. Gerasimenko et al. (2000) recommend the use of supra-tonal frequency current (ultratonotherapy) for the treatment of alveolitis. These currents cause dilation of blood and lymphatic vessels, improve metabolic processes, tissue trophism, and have an analgesic and local anti-inflammatory effect.

Materials based on hydroxyapatite (biogenic and synthetic) occupy an intermediate position between grafts of tissue origin (human and animal tissue) and implants of technical (industrial) origin. It is known that bone consists of 3 components - protein - 30%, salt - 60% and water - 10% and is an active tissue system, which is characterized by continuous renewal of its constituent components.

1. There are 4 main mechanisms of the effect of a graft or implant on bone regeneration processes, based on the fundamental theoretical principles of osteohistology (R. von Wersen, 1993).
2. Osteoblastic osteogenesis, optimized by transplantation of determined osteogenic prodromal cells (DOPC), which have their own bone formation potential. This mechanism is known in connection with the implantation of autologous cancellous substance.
3. Osteoconductive osteogenesis (osteoconduction). This is a method of passively optimizing the functioning of the DPK using semi-synthetic and synthetic bone substitutes, as well as using allogeneic bone grafts.
4. Osteoinductive osteogenesis (osteoinduction) is realized through the “phenotypic” transformation of osteoprodromal cells under the influence of mythical substances. Recently, it has been proven that the osteoconductive effect can be supplemented by the osteoinductive effect of bone morphogenetic protein, which is sorbed by implant particles, in particular hydroxyapatite (Bezrukov V.M., Grigoryan A.S., 1996)
5. Stimulated osteogenesis (osteostimulation) is the influence of personal factors that contribute to the

enhancement of already ongoing osteogenesis processes, i.e. optimize them (for example, growth factor).

However, L.T. Volova (1997, 2001) successfully uses allogeneic demineralized bone matrices and spongy osteoplastic materials obtained using new technology to enhance bone regeneration. The use of human fetal bones (brefobones) for plastic purposes has reduced the risk of an immune conflict between the graft material and the recipient's body, which is associated with the simplified antigenic structure of embryonic tissue (Mirsaeva F.Z., 1989; Andriasyan L.G., 1989; Bogatov A.I. ., 1994; Volova L.T., 1997, 2001; Chand S.C. et al., 2003).

N.F. Guzerova, N.N. Chernenko (2001), in the complex treatment of alveolitis, focal ultraviolet irradiation was successfully used at the first stage, and microwave therapy at the second stage.

A.I. Parshin (2002) in his dissertation work proved the advantage of using currents of supranatal frequency in the complex treatment of alveolitis over other methods. The authors in their studies showed that physiotherapeutic methods promote reliable hemostasis and reduce the intensity of the inflammatory reaction. However, the influence of physical procedures on the process of osteogenesis was not revealed.

A.A. Rybolovleva, V.N. Belekhov (1999), “Alvozhil” and “Neoconus” were used to prevent inflammation. These drugs provide painless healing of the socket in the shortest possible time, but do not restore the volume of bone tissue.

The problem of using osteoplastic materials is relevant not only in traumatology and general surgery, but also in surgical dentistry and maxillofacial surgery. Today, there are a large number of different materials used to initiate, correct and accelerate reparative regeneration processes in living tissues. There are several classifications of osteoplastic materials. In 1981, Saga S. and Adams D. divided the materials depending on the sources into:

1. Autogenous - the source of the material is the patient himself.
2. Allogeneic - the donor is another person.
3. Xenogeneic - the donor is an animal.
4. Alloplastic (explants) - synthetic materials, including those obtained from natural sources, for example, corals.

According to the classification proposed by Edward Cohen (1988), osteoplastic materials are divided into 4 groups:

1. Osteoinductive - materials that induce bone growth.

- autogenous bone material (ilium, rib).
- allogeneic bone material (lyophilized or demineralized lyophilized bone). Osteoconductive materials play a passive role, used as a matrix through which new bone tissue formation and differentiation occur.
- porous hydroxyapatite, bioactive glass, NTR polymer, calcium sulfate.

2. Osteoneutral materials are inert, capable only of filling bone spaces.

- durapatite is non-porous.Материалы для направленной тканевой регенерации (НТР).

In dental surgery, xenografts taken from various animals are often used. Two sources of interest are ox bone and natural coral. Both sources make it possible to technologically obtain from them products that are biocompatible and structurally close to human bone.

The SegaMea company (USA) produces a number of osteoplastic materials, of which OsteoGraf/N, a natural inorganic bovine microporous hydroxyapatite, belongs to the xenogeneic group. It undergoes cellular resorption in the bone and is replaced by the patient's own bone.

Coral calcium carbonate "Biocryl" (France) is obtained from natural coral of the genus Porites. It consists of aragonite (>9.8%-CaCO). “Biocryl” is absorbable and does not require transformation of the surface into the carbonate phase (Artyushkevich A.S., Trofimova E.K., Latysheva SV., 2002). The most common drugs nowadays are Osteograft and Bio-Oss (Geistlich, Switzerland). They are used to fill bone cavities, periodontal pockets, and increase the height of the alveolar process of the jaws. Bio-Oss also turned out to be an osteoinducer and showed a high degree of osseointegration (Grudyanov A.I. et al., 2001).

The success of restorative surgical treatment ultimately largely depends on the creation of optimal conditions, in the choice of antimicrobial drug and osteoplastic material, which determine the processes of reparative regeneration of bone tissue in the area of the patient’s surgical intervention (Ayvazyan V.P., 2000; Bezrukov V.N., 2002 ; Iordanishvili A.K., 2002).

Literature.

1. **Артюшкевич А.С.** Клиническая период онтология / А.С. Артюшкевич, Е.К. Трофимова, С.В. Латышева // Практ. пособие. Мн.: Ураджай. - 2002. - 303 с.
2. **Грудянов А.И.** Применение клеток линии М-22 для лечения воспалительных заболеваний пародонта / А.И. Грудянов, А.С. Григорян // Цитология. - 2002.- Т.43.- № 9. - С.853-854.
3. **Грудянов А.И.** Клиническая эффективность остеопластического материала «Алломатрикс-Имплант» при хирургическом лечении воспалительных заболеваний пародонта / А.И. Грудянов, С.Ф. Бякова // ЦНИИ стоматологии - 40 лет: История развития и перспективы. - М., 2002.-G.60-61.
4. **Гузерова Н.Ф.** Комплексное лечение альвеолитов челюстей / Н.Ф. Гузерова, Н.Н. Черненко //Мед.новости. - 2001. - № 5-6. - С.16-11.
5. **Рыболовлева А.А.** Применение препаратов фирмы Specialities Septodont для профилактики и лечения осложнений после операции удаления зуба / А.А. Рыболовлева, В.Н. Белехов // Бюл.Вост-Сиб.науч.центра Сиб. Отд- ния Рос.акад.мед.наук. - 1999. -№ 2. - С.134-136.
6. **Мирсаева Ф.С.** Профилактика атрофических процессов челюстей после операции удаления одонтогенных кист и зубов / Ф.С. Мирсаева // Автореф. дисс.... канд. мед. наук. - М, 1989.
7. **Неверов А.Н.** Лазерная терапия у больных с альвеолитами / А.Н. . Неверов, М.Ю. Герасименко, Е.В. Кравченко // IV Четвёртая Всероссийская научно-практическая конференция по квантовой терапии. Москва, 8-11 дек. 1997г.: Сб.науч.тр. // -М., 1998. - С. 107.
8. **Волова Л. Т.** Аллогенные деминерализованные костные матриксы в регуляции остеогенеза / Л. Т. Волова //Автореф. дисс. ...докт.мед.наук. - М, 1997.-33 с.
9. **Волова Л.Т.** Аллогенные деминерализованные костные матриксы и регуляция остеогенеза / Л.Т. Волова // Автореф. дисс... .д.м.н. - М., 1997. **11.Безруков В.М.** Оперативное лечение кист челюстей с использованием гидроксиапатита ультравысокой дисперсности / В.М. 33 с. ,
10. **Богатов А.И.** Деминерализованные костные трансплантаты в восстановительной хирургии челюстно-лицевой области: Методические рекомендации / А.И. Богатов. - Самара, 1994. - 19 с.
11. **Паршин А.И.** Применение токов надтональной частоты в комплексном лечении альвеолита / А.И. Паршин // Автореф.дис. ...канд.мед.наук. - М., 2002.
12. **Паршин А.И.** Реабилитация больных с альвеолитом / А.И. Паршин, М.Ю. Герасименко, Л.М. Мустафина, Е.В. Филатова *И* Новые направления в клинической медицине: Всерос.конф., 15-16 июня 2000г. Ленинский-Кузнецкий, 2000. - С.389.

13. **Беланов Г.Н**. Комплексное лечение больных альвеолитами с спользованием биогенных материалов с антимикробным эффектом. /Беланов Г.Н . // Дисс. ...канд..мед. наук.Самара, 2005.