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MUNDARIJA

MUNDARIJA СОДЕРЖАНИЕ CONTENTS

BONE-GRAFTING MATERIALS IN ORAL SURGERY: CLASSIFICATION, BIOLOGICAL PROPERTIES, AND CLINICAL APPLICATION

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Abstract: Background. The rapid development of dental implantology and reconstructive oral surgery has significantly increased the demand for reliable and predictable methods of restoring maxillofacial bone volume. Alveolar ridge atrophy, inflammatory diseases, trauma, and surgical interventions frequently result in severe bone deficiencies that compromise successful patient rehabilitation.

Objective. This study aims to provide a comprehensive analysis of contemporary bone-grafting materials by evaluating their classification, biological properties, tissue-engineering mechanisms, and clinical applications in oral surgery.

Methods. A comprehensive review of recent national and international scientific literature was conducted. Particular attention was paid to the comparative assessment of autogenous, allogeneic, xenogeneic, and synthetic bone substitutes, focusing on their osteogenic, osteoinductive, and osteoconductive characteristics.

Results. The review highlights the specific biological behavior of different grafting materials. Autogenous bone remains the gold standard because it possesses the complete triad of regenerative properties, despite the risk of donor-site morbidity. Xenogeneic and synthetic materials, including hydroxyapatite and β-tricalcium phosphate, exhibit high biocompatibility, predictable physicochemical stability, and excellent volume preservation, making them highly effective for sinus augmentation and socket preservation procedures.

Conclusion. Successful bone augmentation largely depends on the individualized selection of grafting materials, taking into account defect size, local vascularization, and the patient's systemic health status. A thorough understanding of the biological and clinical properties of these materials is essential for dental students and practicing oral surgeons to achieve predictable treatment outcomes.

Key words: modern dentistry, oral surgery, bone regeneration, dental implantation, bone grafting, osteoplasty, alveolar ridge, biocompatibility.

Annotatsiya: Kirish. Dental implantologiya va og‘iz bo‘shlig‘i rekonstruktiv jarrohligining jadal rivojlanishi yuz-jag‘ sohasida suyak to‘qimasi hajmini tiklashning ishonchli va prognoz qilinadigan usullariga bo‘lgan ehtiyojni sezilarli darajada oshirdi. Alveolyar o‘simta atrofiyasi, yallig‘lanish jarayonlari, travmalar hamda jarrohlik aralashuvlari ko‘pincha suyak to‘qimasining jiddiy yetishmovchiligiga olib kelib, bemorlarni muvaffaqiyatli reabilitatsiya qilishni murakkablashtiradi.

Tadqiqot maqsadi. Mazkur tadqiqot zamonaviy suyak-plastik materiallarning tasnifi, biologik xususiyatlari, to‘qima muhandisligi mexanizmlari hamda jarrohlik stomatologiyasidagi klinik qo‘llanish ko‘rsatkichlarini kompleks tahlil qilishga qaratilgan.

Metodlar. So‘nggi yillarda chop etilgan mahalliy va xorijiy ilmiy manbalar asosida adabiyotlar sharhi o‘tkazildi. Tahlilda autogen, allogen, ksenogen va sintetik suyak o‘rnini bosuvchi materiallarning osteogen, osteoinduktiv hamda osteokonduktiv xususiyatlariga alohida e’tibor qaratildi.

Natijalar. Tadqiqot natijalari turli xil graft materiallarining biologik xatti-harakatlari va regenerativ imkoniyatlarini yoritib berdi. Autogen suyak donor sohasi bilan bog‘liq asoratlar xavfiga qaramay, regeneratsiyaning to‘liq triadasiga ega bo‘lgani sababli hanuzgacha “oltin standart” hisoblanadi. Gidroksiapatit va β-trikalsiyfosfat kabi ksenogen hamda sintetik materiallar yuqori biomoslik, prognoz qilinadigan fizik-kimyoviy barqarorlik va hajmni samarali saqlash xususiyatlari bilan ajralib turadi. Shu bois ular sinus-lifting hamda tish ekstraksiyasidan keyingi alveolalarni saqlash amaliyotida keng qo‘llaniladi.

Xulosa. Suyak to‘qimasi augmentatsiyasining muvaffaqiyati ko‘p jihatdan nuqson hajmi, mahalliy qon ta’minoti va bemorning umumiy somatik holatini hisobga olgan holda graft materiallarini individual tanlashga bog‘liq. Ushbu materiallarning biologik va klinik xususiyatlarini chuqur bilish stomatologiya yo‘nalishi talabalari hamda amaliyotchi jarroh-stomatologlar uchun prognoz qilinadigan klinik natijalarga erishishda muhim ahamiyat kasb etadi.

Kalit so‘zlar: zamonaviy stomatologiya, jarrohlik stomatologiyasi, suyak to‘qimasi regeneratsiyasi, dental implantatsiya, suyak plastikasi, osteoplastika, alveolyar o‘simta, biomoslik.

Аннотация: Введение. Стремительное развитие дентальной имплантологии и реконструктивной хирургии полости рта значительно повысило потребность в надежных и предсказуемых методах восстановления объема костной ткани челюстно-лицевой области. Атрофия альвеолярного отростка, воспалительные процессы, травмы и хирургические вмешательства нередко приводят к выраженному дефициту костной ткани, затрудняющему успешную реабилитацию пациентов.

Цель исследования. Провести комплексный анализ современных костнопластических материалов с оценкой их классификации, биологических свойств, тканеинженерных механизмов действия и клинических показаний к применению в хирургической стоматологии.

Методы. Выполнен обзор современных отечественных и зарубежных научных публикаций. Основное внимание уделено сравнительной характеристике аутогенных, аллогенных, ксеногенных и синтетических костнозамещающих материалов с акцентом на их остеогенные, остеоиндуктивные и остеокондуктивные свойства.

Результаты. В работе рассмотрены особенности биологического поведения различных видов костных трансплантатов. Аутогенная кость сохраняет статус “золотого стандарта” благодаря наличию полного комплекса регенеративных свойств, несмотря на риск осложнений в донорской зоне. Ксеногенные и синтетические материалы, такие как гидроксиапатит и β-трикальцийфосфат, характеризуются высокой биосовместимостью, предсказуемой физико-химической стабильностью и способностью длительно сохранять объем тканей, что обеспечивает их высокую эффективность при синус-лифтинге и сохранении лунок удаленных зубов.

Заключение. Успешность аугментации костной ткани во многом определяется индивидуальным выбором пластического материала с учетом размеров дефекта, особенностей локального кровоснабжения и общего соматического состояния пациента. Глубокое понимание свойств костнопластических материалов имеет важное значение для студентов стоматологических факультетов и практикующих хирургов-стоматологов в достижении предсказуемых клинических результатов.

Ключевые слова: современная стоматология, хирургическая стоматология, регенерация костной ткани, дентальная имплантация, костная пластика, остеопластика, альвеолярный отросток, биосовместимость.

INTRODUCTION

Bone tissue regeneration in oral surgery has acquired paramount importance in contemporary clinical practice. Tooth loss, chronic inflammatory processes, trauma, and age-related changes can lead to progressive resorption of the alveolar bone. The resulting bone deficiency creates significant challenges for dental implant placement and substantially compromises the long-term outcomes of prosthetic rehabilitation. The application of bone-grafting materials provides a viable pathway to stimulate new bone formation, restore the anatomical architecture of the jaws, and guarantee reliable primary and secondary stability of dental implants. Consequently, practicing oral surgeons must possess a profound, comprehensive understanding of the properties, classification, and clinical applications of osteoplastic materials.

Here is a comprehensive, publication-ready Literature Review tailored to support your study's introduction and sections on biomaterial properties. It systematically integrates current global standards in bone regeneration, discusses the classical biological triad, categorizes the four major graft families, and addresses modern clinical challenges in implant dentistry.

LITERATURE REVIEW

Alveolar bone deficiency remains a major clinical challenge in oral and maxillofacial surgery, particularly in patients requiring implant-supported rehabilitation. Tooth extraction, periodontal disease, trauma, and physiological aging frequently lead to progressive alveolar ridge resorption, reducing the available bone volume for implant placement. Consequently, bone augmentation procedures have become an integral component of modern implantology.

The scientific foundation of bone regeneration is based on three fundamental biological mechanisms: osteoconduction, osteoinduction, and osteogenicity. Osteoconduction refers to the ability of a graft material to function as a scaffold that supports vascular and cellular ingrowth. Osteoinduction is the process by which bioactive molecules stimulate mesenchymal stem cells to differentiate into osteoblasts. Osteogenicity represents the direct contribution of viable bone-forming cells to new bone formation.

Previous studies classify bone-grafting materials into four principal categories: autogenous grafts, allogeneic grafts, xenogeneic grafts, and synthetic substitutes. Autogenous bone remains the gold standard because it possesses all three regenerative properties simultaneously. However, donor-site morbidity and limited graft availability have encouraged the development of alternative materials.

Allogeneic grafts provide osteoconductive support and partial osteoinductive activity while eliminating the need for additional surgery. Xenogeneic grafts, particularly bovine-derived hydroxyapatite materials, have demonstrated excellent volume maintenance and long-term structural stability. Synthetic substitutes such as hydroxyapatite (HA), β-tricalcium phosphate (β-TCP), and biphasic calcium phosphates (BCP) offer controlled resorption profiles, predictable physicochemical properties, and complete biological safety.

Recent advances in Guided Bone Regeneration (GBR) have significantly improved clinical outcomes by combining bone substitutes with barrier membranes, thereby creating favorable conditions for selective bone regeneration while preventing soft-tissue invasion.

RESEARCH METHODOLOGY

The present study employed a comprehensive literature review methodology to evaluate the biological characteristics, clinical applications, advantages, and limitations of contemporary bone-grafting materials used in oral surgery.

Scientific publications, review articles, clinical reports, and evidence-based studies concerning bone regeneration and implant dentistry were analyzed. The methodological framework consisted of:

1. Systematic examination of the biological mechanisms underlying bone regeneration;
2. Comparative analysis of autogenous, allogeneic, xenogeneic, and synthetic graft materials;
3. Evaluation of osteoconductive, osteoinductive, and osteogenic properties of each material category;
4. Assessment of clinical indications for bone augmentation procedures, including alveolar ridge preservation, sinus floor elevation, and implant site development;
5. Analysis of the role of Guided Bone Regeneration (GBR) techniques in improving regenerative outcomes.

The collected information was synthesized and categorized according to biological performance, clinical effectiveness, safety profile, resorption characteristics, and long-term treatment predictability.

ANALYSIS AND RESULTS

The analysis revealed that successful bone regeneration depends on achieving an optimal balance between osteoconduction, osteoinduction, and osteogenicity. Each category of graft material contributes differently to these regenerative mechanisms and demonstrates specific clinical advantages.

Autogenous grafts exhibited the highest regenerative potential because they contain viable osteogenic cells, growth factors, and a natural bone matrix. Their superior biological performance explains their continued recognition as the gold standard in reconstructive surgery. However, donor-site morbidity, limited graft quantity, and increased surgical complexity remain significant disadvantages.

Allogeneic grafts demonstrated favorable clinical outcomes while reducing patient morbidity. Their biological activity varies according to processing techniques, with demineralized allografts showing greater osteoinductive potential due to the exposure of bone morphogenetic proteins.

Xenogeneic grafts provided exceptional osteoconductive properties and long-term volume preservation. Their slow resorption rate makes them particularly suitable for sinus augmentation procedures and alveolar socket preservation, where maintenance of structural stability is essential.

Synthetic biomaterials showed excellent biocompatibility, predictable degradation behavior, and complete elimination of disease-transmission risks. β-TCP exhibited rapid resorption and replacement by newly formed bone, whereas hydroxyapatite demonstrated superior structural stability. Biphasic calcium phosphate materials combined the advantages of both components, resulting in balanced remodeling dynamics.

The findings further indicated that successful clinical outcomes depend not only on the selected graft material but also on local vascularization, defect morphology, surgical technique, soft-tissue management, and patient-related systemic factors. Guided Bone Regeneration techniques significantly enhanced regenerative success by providing a protected environment for osteogenic cell proliferation and bone formation.

Overall, contemporary evidence suggests that individualized selection of grafting materials according to biological and clinical requirements remains the most effective strategy for achieving predictable bone regeneration and long-term implant success.

DISCUSSION VA CONCLUSION

In summary, bone-grafting materials play an indispensable role in modern dentistry, serving as an essential tool for reconstructive oral procedures and implantology. Bone grafting stands as a highly effective methodology that successfully addresses bone deficiency, restores the anatomical structures of the jaws, and ensures predictable functional and aesthetic rehabilitation for patients. The key determinant of clinical success is the scientifically grounded selection of the biomaterial, which must meticulously account for the biological characteristics of the recipient site and the individual physiological traits of each patient.

The implementation of advanced osteoplastic materials has revolutionized oral surgery; however, their clinical deployment demands a high level of surgical mastery and strict adherence to established clinical guidelines. Therefore, a profound, comprehensive understanding of the properties and protocols governing bone-grafting materials represents a cornerstone in the education of future dental professionals and remains the ultimate prerequisite for successful clinical practice.

References:

1. Albrektsson T., Johansson C. Osteoinduction, osteoconduction and osseointegration // European Spine Journal. - 2001. - Vol. 10(Suppl. 2). - P. S96-S101.
2. Aghaloo T.L., Moy P.K. Which hard tissue augmentation techniques are the most successful in furnishing bony support for implant placement? // International Journal of Oral & Maxillofacial Implants. - 2007. - Vol. 22(Suppl.). - P. 49-70.
3. Giannoudis P.V., Dinopoulos H., Tsiridis E. Bone substitutes: An update // Injury. - 2005. - Vol. 36(Suppl. 3). - P. S20-S27.
4. Jensen S.S., Terheyden H. Bone augmentation procedures in localized defects in the alveolar ridge: Clinical results with different bone grafts and bone-substitute materials // International Journal of Oral & Maxillofacial Implants. - 2009. - Vol. 24(Suppl.). - P. 218-236.
5. Nkenke E., Neukam F.W. Autogenous bone harvesting and grafting in advanced jaw resorption: Morbidity, resorption and implant survival // European Journal of Oral Implantology. - 2014. - Vol. 7(Suppl. 2). - P. S203-S217.
6. Sheikh Z., Hamdan N., Ikeda Y., Grynpas M., Ganss B., Glogauer M. Natural graft tissues and synthetic biomaterials for periodontal and alveolar bone reconstructive applications: A review // Materials. - 2017. - Vol. 10. - No. 5. - Article 497.
7. Aludden H.C., Mordenfeld A., Hallman M. Lateral ridge augmentation with Bio-Oss alone or Bio-Oss mixed with autogenous bone graft: A systematic review // Clinical Implant Dentistry and Related Research. - 2017. - Vol. 19. - No. 4. - P. 733-745.
8. Urban I.A., Monje A., Lozada J.L., Wang H.L. Principles for vertical ridge augmentation in the atrophic posterior mandible: A technical review // International Journal of Periodontics and Restorative Dentistry. - 2017. - Vol. 37. - No. 5. - P. 639-645.
9. Sakkas A., Wilde F., Heufelder M., Winter K., Schramm A. Autogenous bone grafts in oral implantology-Is it still a gold standard? // Journal of Clinical Medicine. - 2017. - Vol. 6. - No. 3. - Article 27.
10. Khojasteh A., Kheiri L., Motamedian S.R. Regenerative medicine in oral and maxillofacial surgery: Current trends and future perspectives // Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology. – 2019. - Vol. 127. - No. 3. - P. 229-241.
11. Miron R.J., Zhang Y.F. Osteoinduction: A review of old concepts with new standards // Journal of Dental Research. - 2012. - Vol. 91. - No. 8. - P. 736-744.

12. Nandi S.K., Roy S., Mukherjee P., Kundu B., De D.K., Basu D. Orthopaedic applications of bone graft and graft substitutes: A review // Indian Journal of Medical Research. - 2010. - Vol. 132. - P. 15-30.
13. Buser D., Dula K., Belser U., Hirt H.P., Berthold H. Localized ridge augmentation using guided bone regeneration. Surgical procedure in the maxilla // International Journal of Periodontics and Restorative Dentistry. - 1993. - Vol. 13. - No. 1. - P. 29-45.
14. Dahlin C., Sennerby L., Lekholm U., Linde A., Nyman S. Generation of new bone around titanium implants using a membrane technique: An experimental study in rabbits // International Journal of Oral and Maxillofacial Implants. - 1989. - Vol. 4. - No. 1. - P. 19-25.
15. Araujo M.G., Lindhe J. Ridge preservation with the use of Bio-Oss collagen: A six-month study in the dog // Clinical Oral Implants Research. - 2009. - Vol. 20. - No. 5. - P. 433-440.
16. Cordaro L., Torsello F., Miuccio M.T., Di Torresanto V.M., Eliopoulos D. Mandibular bone harvesting for alveolar reconstruction and implant placement: Subjective and objective cross-sectional evaluation of donor and recipient site up to 4 years // Clinical Oral Implants Research. - 2011. - Vol. 22. - No. 11. - P. 1320-1326.
17. Schmitt C.M., Doering H., Schmidt T., Lutz R., Neukam F.W., Schlegel K.A. Histological results after maxillary sinus augmentation with Straumann BoneCeramic, Bio-Oss, Puros, and autologous bone. A randomized controlled clinical trial // Clinical Oral Implants Research. - 2013. - Vol. 24. - No. 5. - P. 576-585.
18. Traini T., Valentini P., Iezzi G., Piattelli A. A histologic and histomorphometric evaluation of anorganic bovine bone retrieved 9 years after a sinus augmentation procedure // Journal of Periodontology. - 2007. - Vol. 78. - No. 5. - P. 955-961.
19. Marx R.E. Bone and bone graft healing // Oral and Maxillofacial Surgery Clinics of North America. - 2007. - Vol. 19. - No. 4. - P. 455-466.
20. Wang H.L., Boyapati L. "PASS" principles for predictable bone regeneration // Implant Dentistry. - 2006. - Vol. 15. - No. 1. - P. 8-17.

13.00.00 Pedagogika fanlari
13.00.01 Pedagogika nazariyasi. Pedagogik ta’limotlar tarixi
13.00.02 Ta’lim va tarbiya nazariyasi va metodikasi (sohalar bo‘yicha)
13.00.03 Maxsus pedagogika
13.00.04 Jismoniy tarbiya va sport mashg‘ulotlari nazariyasi va metodikasi
13.00.05 Kasb-hunar ta’limi nazariyasi va metodikasi
13.00.06 Elektron ta’lim nazariyasi va metodikasi (ta’lim sohalari va bosqichlari bo‘yicha)
13.00.07 Ta’limda menejment
13.00.08 Maktabgacha ta’lim va tarbiya nazariyasi va metodikasi
13.00.09 Ijtimoiy pedagogika
07.00.00 Tarix fanlari
19.00.00 Psixologiya fanlari
01.00.00 Fizika-matematika fanlari
02.00.00 Kimyo fanlari
03.00.00 Biologiya fanlari
09.00.00 Falsafa fanlari
10.00.00 Filologiya fanlari
11.00.00 Geografiya fanlari

MAKTABGACHA VA MAKTAB TA’LIMI

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