EUROPEAN INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND MANAGEMENT STUDIES

TYPE Original Research
PAGE NO. 20-24
DOI 10.55640/eijmrms-05-12-05

Check for updates

Single-Stage Implant Surgery: A Contemporary Approach To Dental Implantology

Aslamov Akbarjon Akobirovich

Clinic Resident of the Department of Orthopedic Dentistry, Samarkand State Medical University, Samarkand, Uzbekistan

Akhmedov Alisher Astanovich

Associate professor of the department Department of orthopedic dentistry,DSC, Samarkand State Medical University, Samarkand, Uzbekistan

OPEN ACCESS

SUBMITED 20 October 2025
ACCEPTED 12 November 2025
PUBLISHED 17 December 2025
VOLUME Vol.05 Issue12 2025

Abstract: Single-stage implant surgery represents a modern and minimally invasive approach in dental implantology, characterized by the placement of a dental implant with a transmucosal healing abutment in a single surgical intervention. This technique eliminates the need for a second surgical stage, thereby reducing overall treatment time, patient discomfort, and postoperative complications. Advances in implant surface technology, surgical protocols, and diagnostic imaging have significantly improved the predictability and success rates of single-stage implant procedures. This approach is particularly indicated in cases with sufficient bone volume, favorable soft tissue conditions, and adequate primary implant stability. The present overview highlights the clinical indications, advantages, limitations, and outcomes of single-stage implant surgery, emphasizing its role as an effective and patient-centered alternative to conventional two-stage implant protocols.

Keywords: Single-stage implant surgery; Dental implantology; Immediate healing abutment; Minimally invasive dentistry; Implant stability; Contemporary dental techniques.

Introduction: If the implant and the abutment are installed during the same operation, this is a one-stage dental implantation.

- What is single-stage implantation?
- Advantages of single-stage implantation

• How is the immediate implantation performed

• After single-stage implant placement

The term "implant" comes from the Latin words "in plantare", which literally means "to plant" or "implant" something. Implants are used to replace or restore a lost part or the entire organ. In dentistry, an organ is understood as teeth. Accordingly, when one tooth is lost, various types of dentures, i.e. dental implants, are used.

The fixation of a titanium intraosseous prosthesis, a substitute for the root system of a tooth, can be carried out in 1 day, or rather on the day of removal of a non-viable or damaged tooth. This technique is called immediate implantation.If the implant is immediately covered with a temporary or permanent crown, then in this case it is said that dental implantation has been performed with an immediate load.

If the implant and the abutment are installed during the same operation, this is a one-stage dental implantation. This is the main difference from the two-stage procedure, when at least 2.5-3 months must pass from the moment of implantation of the endoprosthesis to the moment of installation of the supra-gingival structures.

Advantages of single-stage implantation

• Preservation of physiological features – the chewing load is correctly distributed, as a result of which the bite does not change.

• Long service life. If hygiene is observed, the service life of the prosthesis can exceed fifteen to twenty-five years.

• No special care required. It is enough for the patient to follow the standard rules of oral hygiene.

Aesthetics – dentures are no different from natural teeth and do not violate the overall aesthetics.

• Unlike removable structures, a number of restrictions are not imposed on the patient (the maximum that is required is an annual dental appointment).

How is simultaneous implantation performed?

The single-stage installation of the implant is as follows:

1. A tooth compromised by injury or dental disease is carefully removed. Moreover, the doctor strives to do this in the least traumatic way, so that all the walls of the alveolar cavity and the soft tissues surrounding the tooth remain intact.

2. Curettage of the well is performed in order to remove necrotic tissues and bone fragments that may have remained after extraction.

3. Based on the X-ray data taken immediately before the operation, the doctor fixes the implant in the hole of the extracted tooth, and osteoplastic material is placed around it, activating the repair processes in the jaw bone.

4. An abutment is screwed on top of the intraosseous prosthesis, which is necessary to form the gingival bed for an artificial crown. In addition, the abutment mimics the tooth stump, therefore it serves as a support for the crown.

5. A single-layer impression is removed, according to which the doctor will immediately make a temporary crown. This is usually necessary if simultaneous implantation is combined with immediate loading with a prosthesis. Dental crowns are made for several purposes – closing a cosmetic defect; restoring chewing and phonetic functions; creating moderate loads on the bone to accelerate the processes of osseointegration of the implant.

6. Removal of two-layer impressions of the upper and lower jaws for the manufacture of permanent orthopedic structures. This stage may be delayed somewhat in time.

After fixing the provisional crown or crowns, the patient is released home. In the future, he is invited several

more times for follow-up examinations, X-ray examinations, as well as for fitting permanent prostheses.

This is a subspecies of single-stage implantation. It involves removing teeth and replacing them with a crown on an implant in one visit to the clinic. Alternative names for the technology: rapid implantation or implantation with immediate (instant) loading.

The technique is minimally invasive. The implant is inserted into the recess of the extracted tooth. There is no need to cut the gum, prepare the bone bed for the implant and apply stitches.

Types of single-stage implantation

Depending on the condition of the jawbone and the complexity of the clinical situation, the doctor can offer 1 of 3 options for rapid implantation.:

• With immediate loading. Simultaneously with the implantation of the implant (or after 3-7 days), a temporary crown is fixed. This approach allows you to quickly restore the aesthetics of a smile. Permanent prosthetics are performed after complete engraftment (osseointegration) of the implant into the bone.

• With the installation of a gum shaper. A temporary gum shaper is installed along with the implant. The element promotes the formation and support of an aesthetic, natural contour of the gum in the implantation area up to the prosthetics stage after 3-6 months. Before installing a permanent prosthesis, the gum shaper is removed.

• With delayed loading. The tooth is removed, an implant is installed, and the gum is sutured until the artificial root is fully implanted. Prosthetics are performed after complete osseointegration of the implant.

Advantages.

Accelerated restoration of aesthetic smile and chewing function

With simultaneous implantation, two surgical procedures are performed in 1 day — tooth extraction + implant placement. Thus, anesthesia is performed only once instead of twice, oral tissues are manipulated, stitches are applied, and one course of medication is prescribed. The healing process of the hole and the implant goes on simultaneously. This significantly reduces the period of treatment and rehabilitation.

Treatment without bone grafting.

The implant is installed immediately after the tooth has been removed. The hole does not have time to dissolve, which means that the normal volume of bone tissue remains. This helps to avoid bone buildup, which requires additional surgical procedures and expenses.

High implant survival rate – more than 98%

Careful diagnosis of the patient and his preparation for rapid implantation allows our doctors to achieve the same implant survival rate as with the classical protocol.

Disadvantages.

More pronounced postoperative events (not always)

This is possible due to the combination of several procedures in one visit. For example, the swelling of the tissues may be slightly greater.

More contraindications than classical implantation

First of all, this is due to the fact that the condition of bone and soft tissues is important for high-quality implant installation according to a single-stage protocol.

REFERENCES

1. Asrorovna, X. N., Baxriddinovich, T. A., Bustanovna, I. N., Valijon O'g'li, D. S., & Qizi, T. K. F. (2021). Clinical Application Of Dental Photography By A Dentist. The American Journal of Medical Sciences and Pharmaceutical Research, 3(09), 10-13.
2. Ugli, A. A. A., & Bustanovna, I. N. (2024). STUDY OF THE CONDITION OF PARODONT IN PERIODONTITIS IN FETAL WOMEN. European International Journal of Multidisciplinary Research and Management Studies, 4(05), 149-156.
3. Kizi, J. O. A., & Bustanovna, I. N. (2024). FAMILIARIZATION WITH THE HYGIENIC ASSESSMENT OF THE CONDITION OF THE ORAL MUCOSA IN ORTHOPEDIC TREATMENT. European International Journal of Multidisciplinary Research and Management Studies, 4(05), 89-96.
4. Bustanovna, I. N. (2024). Determination of the Effectiveness of Dental Measures for the Prevention of Periodontal Dental Diseases in Workers of the Production of Metal Structures. International Journal of Scientific Trends, 3(5), 108-114.
5. Bustanovna, I. N. (2022). Assessment of clinical and morphological changes in the oral organs and tissues in post-menopause women. Thematics Journal of Education, 7(3).
6. Bustanovna, I. N., & Berdiqulovich, N. A. (2022). ПРОФИЛАКТИКА И ЛЕЧЕНИЯ КАРИЕСА У ПОСТОЯННЫХ ЗУБОВ. JOURNAL OF BIOMEDICINE AND PRACTICE, 7(1).
7. Bustanovna, I. N. (2024). PATHOGENESIS OF PERIODONTAL DISEASE IN ELDERLY WOMEN. Лучшие интеллектуальные исследования, 21(3), 25-29.
8. Bustanovna, I. N. (2024). TO STUDY THE HYGIENIC ASSESSMENT OF THE CONDITION OF THE ORAL MUCOSA DURING ORTHOPEDIC TREATMENT. Лучшие интеллектуальные исследования, 21(1), 9-15.
9. Bustanovna, I. N. (2024). CLINICAL AND LABORATORY CHANGES IN PERIODONTITIS. Journal of new century innovations, 51(2), 58-65.
10. Bustanovna, I. N. (2024). Morphological Changes in Oral Organs and Tissues in Women after Menopause and their Analysis. International Journal of Scientific Trends, 3(3), 87-93.
11. Bustanovna, I. N. (2024). Hygienic Assessment of The Condition of The Oral Mucosa After Orthopedic Treatment. International Journal of Scientific Trends, 3(3), 56-61.
12. Bustanovna, P. I. N. (2024). Further Research the Features of the Use of Metal-Ceramic Structures in Anomalies of Development and Position of Teeth. International Journal of Scientific Trends, 3(3), 67-71.
13. Bustanovna, I. N. (2024). The Effectiveness of the Use of the Drug" Proroot MTA" in the Therapeutic and Surgical Treatment of Periodontitis. International Journal of Scientific Trends, 3(3), 72-75.
14. Bustanovna, P. I. N. (2024). Research of the Structure of Somatic Pathology in Patients with Aphthous Stomatitis. International Journal of Scientific Trends, 3(3), 51-55.
15. Bustanovna, I. N., & Abdusattor o'g, A. A. A. (2024). Analysis of Errors and Complications in the Use of Endocal Structures Used in Dentistry. International Journal of Scientific Trends, 3(3), 82-86.
16. Bustanovna, I. N. (2024). Complications Arising in the Oral Cavity after Polychemotherapy in Patients with Hemablastoses. International Journal of Scientific Trends, 3(3), 62-66.
17. Bustanovna, I. N., & Sharipovna, N. N. (2023). Research cases in women after menopause clinical and morphological changes in oral organs and their analysis. Journal of biomedicine and practice, 8(3).
18. Bustonovna, I. N., & Sharipovna, N. N. (2023). Essential Factors Of Etiopathogenesis In The Development Of Parodontal Diseases In Post-Menopasis Women. Eurasian Medical Research Periodical, 20, 64-69.
19. Fakhriddin, C. H. A. K. K. A. N. O. V., Shokhruh, S. A. M. A. D. O. V., & Nilufar, I. S. L. A. M. O. V. A. (2022). ENDOKANAL PIN-KONSTRUKSIYALARNI ISHLATISHDA ASORATLAR VA XATOLAR TAHLILI. JOURNAL OF BIOMEDICINE AND PRACTICE, 7(1).
20. Очилов, Х. У., & Исламова, Н. Б. (2024). Особенности артикуляции и окклюзии зубных рядов у пациентов с генерализованной формой повышенного стирания. SAMARALI TA'LIM VA

BARQAROR INNOVATSIYALAR JURNALI, 2(4), 422-430.

21. Ortikova, N., & Rizaev, J. (2021, May). The Prevalence And Reasons Of Stomatophobia In Children. In E-Conference Globe (pp. 339-341).

22. Ortikova, N. (2023). ANALYSISOF ANESTHESIA METHODS FOR DENTAL FEAR AND ANXIETY. Центральноазиатский журнал академических исследований, 1(1), 8-12.

23. Ortikova, N. K. (2023). DENTAL ANXIETY AS A SPECIAL PLACE IN SCIENTIFIC KNOWLEDGE. SCHOLAR, 1(29), 104-112.

24. Исламова, Н. Б. (2024). ПАРОДОНТ КАСАЛЛИКЛАРИДА ОРГАНИЗМДАГИ УМУМИЙ ЎЗГАРИШЛАРНИ ТАҲЛИЛИ ВА ДАВОЛАШ САМАРАДОРЛИГИНИ ТАКОМИЛЛАШТИРИШ. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 43(7), 18-22.

25. Islamova, N. B., & Chakkonov, F. K. (2021). Changes in the tissues and organs of the mouth