LOADING OF DENTAL IMPLANTS

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**Introduction:** Loading protocols of dental implants have been a central focus of discussion of field since of osseointegration. Implant supported-prosthesis treatment has important place in dentistry, which has a major contribution in enhancing quality of life by restoring the affected functions of the stomatognathic system [1,2,3,4,5]. Different types of placement of an implant supported-prosthesis were defined in 2002 (the World Congress of Spain):

- Immediate loading within 48 h with occlusion;
- Immediate restoration within 48 h without occlusal contact;
- Early loading 1-3 month;
- Delayed loading 3-6 month;
- Conventional loading 6-8 month [6,7].

In the last decade implant therapy was developed as a result of revolutionizing of the biomaterials and fundamental researches on the phenomenon of osseointegration of dental implants, evidence based data of the treated patients. Implant supported-prosthesis treatment has important place in dentistry, both in terms of morpho-functional and aesthetic, which has major contribution in enhancing quality of life by restoring the affected functions of the stomatognathic system [8,9,10]. It was studied that osseointegration depends on four factors:

1. Material selected for dental implants (titanium or calcium-phosphate ceramics).
2. State of the bone site where dental implant is expected to be inserted.
3. Surgical techniques, which minimize traumatic thermal and mechanical damage. It was proved that temperature over 47°C can damage osteocytes.
4. Healing phase lasts is from 6 to 8 months before functional loading with a permanent prosthetic replacement is considered optimal [11,12,13,14,15].

The purpose of the study was to study effectiveness of the treatment of partial edentia with implant supported-restorations.
**Materials and Methods:** The study was retrospective cohort. 20 patients (12 women, 8 men) aged between 22 and 60 years were included in the research from 22 January 2016 to 28 June 2017. All enrolled patients were divided into 2 groups: the study and the control group.

The main inclusion criteria were:
- Partial edentia class I, II, III and IV by Kennedy
- ≤ 18 years of age
- Adequate oral hygiene
- Sufficient horizontal and vertical bone quantity to insert a dental implant
- Periotest value -4 and -7
- Insertion torque 40-45 Ncm
- Revers torque 30-35 Ncm

Exclusion criteria are:
- Pregnant or lactating female
- Smoking people
- Psychiatric disease
- Decompensated general diseases (ex. Diabetes melittus)
- Type IV bone quality (very soft bone)

39 endosseous dental implants Alpha-Bio type were inserted into the upper and lower jaw. Their sizes varied from 11.5 to16 mm and diameters - from 3.75 to5mm. Dental implants in the study group were solved by temporary implant supported-prosthesis without occlusal contact (non-occlusal) and the control group was applied standard method (without using provisional crowns), after that were changed with porcelain fused to metal crowns in both groups. Following indices were studied: the thickness of keratinized gingiva after healing, stability endosseous dental implants (secondary). Statistical analysis was performed by the mean value and standard error indications and Student’s t test Mann Whitney test (p <0.05).

**Results:** All implants were successfully integrated. The thick of the gingiva (phenotype) was 5.95 ± 0.28mm in the study group and 3.74 ± 0.27mm in the control group (p> 0.05). Results of the study showed negative correlation between the thickness of the lining and mucosal recession and subsequently established radiographic bone resorption. The average values of Periotest were -5.9 ± 0.32 (in the study group), and -6.6 ± 0.16 (in the contro
(p > 0.05). Indices of Mann Whitney test and paired Student t-test showed no statistical difference between groups.

**Discussion:** Occlusal design for implant–supported prostheses is an essential for the planning of treatment. Risk of implant overload can be minimized by limiting the width of the occlusal table of the implant-supported and flattening the cusp angles[16, 17, 18, 19]. The biomechanical effects of the implant-supported crowns should be controlled by limiting and distributing of the occlusion contact; limiting effects of cantilevers and off-axis loading; splinting implants together where possible; removing all excursive contacts from the provisional restorations, should remain in place during the healing[20, 21, 22, 23].

**Conclusion:**

Among benefits of the implant supported-prosthesis treatment the next can be defined: restoration of the integrity of dental arches and masticatory activity in a short time, stop of the dental migration in vertical and in horizontal plane, preservation of the crestal bone and interdental papillae, absence of the risk of dental caries on dental implant.

**References:**


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