

# Termosurgical Technology and Equipment on Prosthetics in Implants for the Elderly People

Victor Ponomarenko, Rafik Kamalov, Igor Khudetsky

**Abstract** – The report presents the results of experimental studies that focus on features of prosthetic implants in the elderly.

**Keywords** – Dental implant, Orthopedics construction, dental termosurgical technology.

## I. INTRODUCTION

Increasing the number of elderly in the population of Ukraine forms one of the important issues - Gerontological direction of modern dentistry. In old age create certain conditions for the development of diseases that do not allow the use of traditional surgical techniques in prosthetics. We have proposed the use of new termosurgical technology to address prosthesis on implants.

## II. RESULTS AND DISCUSSION

Analyze the possibility of using dental lasers, dental hydrolaser, piezoskalera, electrocauter, high frequency and non-contact coagulator for solving a number of surgical procedures in non-removable prosthesis on implant beam system.

Prosthetic problems in the elderly are associated with destructive changes in the soft tissues and alveolar bone, the lack of sufficient bone in the area of implantation, presence of periodontal disease.

Often require pre-prosthetic surgical implant readjustment zone such as tooth extraction, granulation and granuloma, etc.

Prosthetic rehabilitation area with traditional dental technology sufficiently traumatic for a prolonged period of healing, often associated with the risk of recurrence.

The use of dental laser and hydrolaser largely solves a number of issues associated to the prevention of complications of prosthetic rehabilitation zone.

Together with the lack of antimicrobial activity does not prevent chronic infectious processes in the wound.

Is of great importance the high cost of equipment (20 000), materials and safety equipment. Problems associated with servicing. Piezoskalera qualitatively carry out preparation of bone and soft tissues, especially in the maxillary sinuses.

Price piezoskalera which is offered in the market for about 5,000-10,000 euro, so its use is limited.

Electrocauter application has some advantages over

traditional surgical techniques. He used to remove the granuloma, bleeding from small vessels.

Application of high frequency and proximity thermocoagulators that are designed to E. O. Paton Electric Welding Institute of the NAS of Ukraine, in most cases can prevent complications of prosthetic rehabilitation in the zone on the implants.

Has the greatest potential hybrid devices, which in one device combines high-frequency and convection-infrared coagulation (Table 1)

Table 1

**Major surgical manipulations for prosthetics on the implants in the elderly**

<i>surgical manipulations</i>	<i>traditional surgical technique</i>	<i>hybrid termosurgical mechanism "Patonmed"</i>
as tooth extraction	in full	not applicable
hemostasis in the hole	tamponade 20-30 minutes	treatment for 1-2 min
disinfection of the wound surface	not applicable	treatment for 1-2 min
prevention of infectious complications for festering wounds	antibiotic treatment	treatment for 1-2 min
incision	in full	limited use
prevention of bleeding	not applicable	possibly

Necessary to clarify that the use of convection-infrared flux is simultaneous hemostasis and wound disinfection. Such treatment is effective in purulent wounds with the long process. Pretreatment of tissue can produce a bloodless incision..

## III. CONCLUSION

Thus the use of hybrid apparatus "PATONMED" allows us to apply the majority of surgical procedures that are associated with hemostasis, prevention of infections in septic wounds in rehabilitation areas for prosthetic implants with non-removable bridge beam structures

## REFERENCES

- [1] Алимский А.В. Геронтостоматология: настоящее и перспективы // Стоматология для всех. – 1999. - №1. – С. 29 – 31.
- [2] Байриков И.М. Способ профилактики атрофии тканей протезного ложа при полном отсутствии зубов у пожилых // Самарский медицинский журнал. – 2001. - №4. – С.45.
- [3] Грудянов А.И. Состояние тканей зубов и пародонта у лиц пожилого и старческого возраста в зависимости от доступности стоматологической помощи / Грудянов А.И., Найговзина Н.Б., Овсянников В.А. // Пародонтология. – 2007. - № 4. – С. 71-75.

---

Viktor Ponomarenko: Ukrainian military medical academia, 13 Kurska str Kyiv 03049 Ukraine. E-mail:zub\_ua@ukr.net Rafik Kamalov: E-mail:kamalov@.kiev.ua  
Igor Khudetsky : E. O. Paton Electric Welding Institute of the NAS of Ukraine 11 Bozhenko str. Kyiv 03680 Ukraine E-mail:igorkh@paton.kiev.ua