

MINIMALLY INVASIVE PERIODONTAL SURGICAL THERAPY IN A KIDNEY TRANSPLANTED PATIENT. A CASE REPORT

Ionuț Luchian^{1*}, Ioana Mârțu¹, Mihaela Cujbă², Monica Tatarciuc¹, Cosmin Popa¹,
Silvia Mârțu³

1 "Grigore T. Popa" University of Medicine and Pharmacy - Iași, Romania, Faculty of Dentistry, Department of Prosthesis Technology

2 "Grigore T. Popa" University of Medicine and Pharmacy - Iași, Romania, Faculty of Dentistry, Department of Oro-dental Diagnosis

3 "Grigore T. Popa" University of Medicine and Pharmacy - Iași, Romania, Faculty of Dentistry, Department of Periodontology

*Corresponding author: Ionuț Luchian, DMD, MSc, PhD student
"Grigore T. Popa" University of Medicine and Pharmacy
- Iași, Romania;
e-mail: ionut_luchian@yahoo.com

ABSTRACT

Introduction After Cota et Al. gingival overgrowth in renal transplanted patients varies in accordance with the type of the immunosuppressive treatment that's why the integration between the medical and the dental team may be an important approach in the post-transplant maintenance routine. **Case report** A female patient N.C., 45 years old, retired for medical reasons, with renal transplant and diabetes, was referred in March 2013 by the general dentist for a gingival overgrowth at the level of the anterior mandibular arch. The periodontal treatment plan included: super and subgingival scaling and root planning, laser assisted surgical removal of the gingival overgrowth and splinting of the teeth from tooth 3.3 to tooth 4.3. Taking into account the very special general status of the patient we decided to perform the periodontal surgery as minimally invasive as possible that's why we used a 940 nm wavelength diode laser instead the conventional technique. **Results and discussions** The final result of our case was a positive one because we succeeded in surgically removing the overgrowth using a nonconventional technique and in the same time we conserved the affected teeth on the arch. **Conclusions** This technique may be considered as an election technique for the periodontal surgeries performed in patients with highly significant systemic diseases.

Keywords: kidney transplant, diode laser, splinting

INTRODUCTION

It is widely accepted the statement of Wilczyńska-Borawska M et Al that elimination of odontogenic centers of inflammation in patients before kidney transplantation should be the goal of a precisely planned multi-specialist treatment [1].

After da Silva et Al. in order to prevent

rejection of kidney transplants, patients must be kept in immunosuppressive therapy for a long time, which includes the use of drugs such as cyclosporine, azathioprine, cyclophosphamide, and prednisone. The action of these drugs reduces the general immune response of transplant patients and thus increases their susceptibility to infections. Moreover, these drugs increase the

potential of developing lesions. The same authors claim that oral hygiene in kidney transplant recipients contributes to maintenance of the transplanted organ and its function [2]. Gingival overgrowth is one of the most frequent alteration at the oral level of the kidney transplanted patients [2].

After Cota et Al. gingival overgrowth in renal transplanted patients varies in accordance with the type of the immunosuppressive treatment that's why the



Figure 1A. Initial aspect – buccal view

Anamnesis about the general condition put into evidence that the patient has been diagnosed with type 1 diabetes at the age of 10 and since then she is under daily insulin treatment. (Fig.2) The early debut of diabetes



Figure 2. Medical letter - Diabetes Dep.

In October 2010 the patient received a

integration between the medical and the dental team may be an important approach in the post-transplant maintenance routine [3].

CASE REPORT

A female patient N.C., 45 years old, retired for medical reasons was referred in March 2013 by the general dentist for a gingival overgrowth at the level of the anterior mandibular arch. (fig. 1A and fig. 1B).



Figure 1B. Initial aspect – incisal view

affected the renal function and determined the diabetic nephropathy that required dialysis. From the medical records we can find out that the patient is also allergic to ciprofloxacin.



Figure 3. Medical letter – Transplant center

kidney transplant in the right iliac fossa from

a compatible donor in cerebral death. The intervention was successful and the patient is under periodic supervision in the Clinical Institute of Urology and Renal Transplantation from Cluj-Napoca. Romania (fig. 3).

The clinical dental exam correlated with dental OPG and serial periapical x-rays put into evidence that the oral status was significantly affected by the systemic disease and the patient and a large number of teeth were lost due to periodontal disease. The patient was prosthodontically treated through a removable maxillary denture.

The periodontal diagnostic was advanced generalized chronic periodontitis and localized gingival overgrowth at the level of teeth 4.1 and 4.2. A high rate (2nd – 3rd degree) of dental mobility was recorded at the

level of the teeth 3.2, 3.1, 4.2, 4.1 and a medium dental mobility rate the level of teeth 3.3, 3.4, 3.4, 4.3, 4.4, 4.5

The periodontal treatment plan included: super and subgingival scaling and root planning, laser assisted surgical removal of the gingival overgrowth and splinting of the teeth from tooth 3.3 to tooth 4.3.

Our presumptive diagnosis for the overgrowth was epulis but the certitude diagnosis we can establish only after we have had received the pathological anatomy result.

After Carranza et Al. epulis is a generic term used clinically to designate all discrete tumors and tumorlike masses of the gingiva. It serves to locate the tumor rather but not to describe it. Most lesions we refer as “epulis” are inflammatory rather than neoplastic [4].



Figure 4A. Aspect during surgery



Figure 4B. Aspect immediate post-op

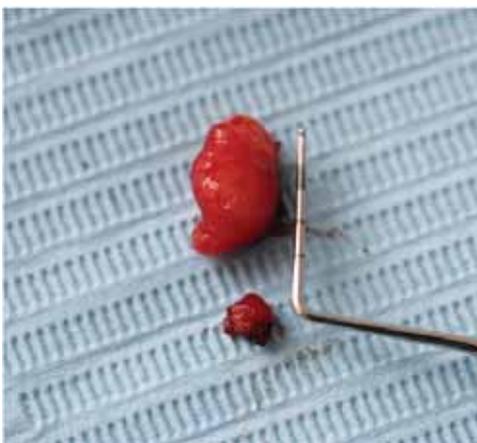


Figure 5A. Excised epulis



Figure 5B. Medical letter – Pathological Anatomy

After initial periodontal therapy the patient was scheduled for surgery in order to remove the OG. Taking into account the very special

general status of the patient we decided to perform the periodontal surgery as minimally invasive as possible that’s why we used a 940

nm wavelength diode laser instead the conventional technique.

The laser was set at 1.5 W power in continuous mode and the assistant irrigated the tissue continuously in order to avoid the overheating due to the photo thermic effect. The surgery was much faster and more precise than if we would have done it using the scalpel and the bleeding was nearly absent throughout the entire procedure. This provided better visibility for the operator in order to remove efficiently the entire quantity of overgrowing soft tissue (fig. 4A and fig. 4B).

The removed tissue sample was sent to the Pathologic Anatomy Department for the



Figure 6A. Post-op aspect – buccal view



Figure 7A. Splinting – buccal view

histological exam (fig. 5A and fig. 5B).

The patient didn't report any postoperative discomfort and the healing process was very fast.

After 7 days from the surgery we applied a fiberglass splinting device from tooth 3.3 to tooth 4.3 in order to conserve the periodontal status of the affected teeth. Due to bone loss tooth 4.1 migrated and we decided to reduce its' cervical-incisal dimension in order to avoid any supplemental occlusal stress.

The splinting device was applied in such a way that will allow the patient to make an efficient cleaning of the interproximal spaces. (fig. 7A and fig. 7B).



Figure 6B. Post-op aspect –lingual view



Figure 7B. Splinting – lingual view

RESULTS AND DISCUSSIONS

The final result of our case was a positive one because we succeeded in surgically removing the overgrowth using a nonconventional technique and in the same time we conserved the affected teeth on the arch (fig. 8).

The histological result confirmed our presumptive diagnosis of granulomatous

epulis and the patient was informed about that (fig. 5B).

Although epulis surgical removal has a high rate of recurrence our one year follow-up of this case was a successful one (fig. 9A and fig. 9B). The clinical advantages provided by laser-assisted periodontal surgery include mainly reduction of bleeding, absence of oedema, a higher comfort for the

patient and a much more rapid healing (by a faster tissular repair) [5].

The absence of discomfort and the faster healing after the laser assisted surgeries were proved by fundamental research. After Martu

et. al the morphological differences identified at the gingival epithelium level and subjacent lamina propria support the value of laser therapy, stimulating an improved healing of the damaged tissues [6].

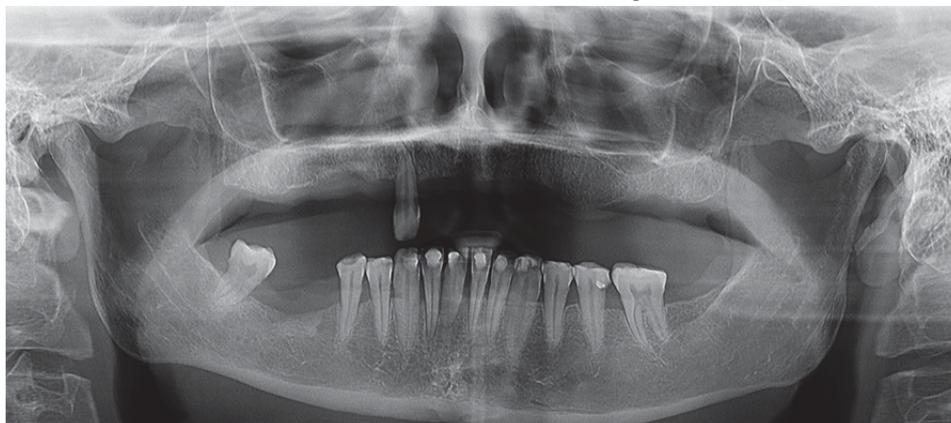


Figure 8. OPG -3 months follow-up



Figure 9A. 1 year follow-up (buccal)



Figure 9B. 1 year follow-up (lingual)

CONCLUSIONS

6. In our case the laser assisted periodontal surgery technique proved to be minimally invasive, efficient and predictable for a successful result.

7. This technique may be considered as an election technique for the periodontal surgeries performed in patients with highly significant systemic diseases.

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