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Giant crestal defect of traumatic origin treated by autologous chin graft block and TCP. A case report.

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Authors:
Assist. Prof. Dr. Dr. Stefan Ioan Stratul,
Dr.Adrian Dinca, Assist. Prof. Dr. Rodica Jianu, Prof. Dr.Sanda Enache, Assist. Prof.Dr.Anca Vilceanu
Victor Babes Medical University of Timisoara, Romania

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Introduction

Sport accidents sometimes lead to delayed losses of the upper incisors, by mean of inflammatory extensive resorptions of the buccal cortical bone. The aesthetic involvement of such losses can be dramatic and chances for implant-supported restorations are severely diminished. Chin graft blocks of autologous bone have been used as onlays for vertical augmentations of alveolar crests (Proussaefs - 2005; Pappalardo et al. - 2004).

Material and Methods

This is a case report of a 26-y.o. female patient with a history of sport accident which caused in time, by mean of recurrent misdiagnosed and neglected apical infections, the loss of the upper left lateral incisor and of the correspondent buccal cortical plate. The loss resulted in an impressive inesthetic alveolar bone defect of cca 20x15x10 mm covered by a mucous cleft-like scar, that discouraged any prosthodontic attempt to restore the edentation of 22 (Fig.1, Fig.2). Intraoral radiographs showed both the complete lack of the buccal cortical plate and an extended circular lacuna of the palatal cortical plate, which turned the apparent buccal defect into an extended trough-and-trough crestal defect (Fig.8). A buccal and a palatal flap were raised, the absence of the buccal plate and the circular lacuna of the palatal plate were confirmed (Fig.3). A rectangular cortical block was harvested from the chin (Fig.4), adapted and fixed to the thin palatal bony bridge by mean of a special suture loop (Fig.5). The graft was completed with a combination of autologous bone chips and α-TriCalciumPhosphate (BioBase® α-pore, Biovision GmbH, Ilmenau, Germany) (Fig.6, Fig.9) and the flap were repositioned. Postsurgical care consisted in 0.2% CHX rinses twice a day for the next four weeks.

Fig.1 Preoperative frontal view

Fig.2 Preoperative occlusal view

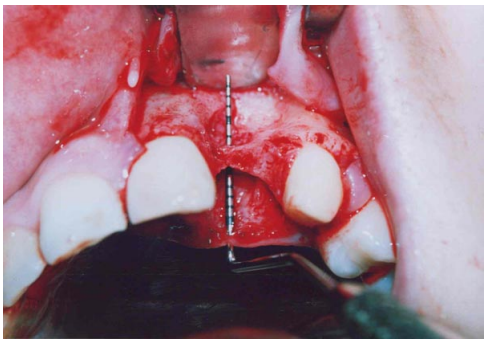

Fig.3 The trough-and-trough bone defect

Fig.4 The chin block ready to be harvested

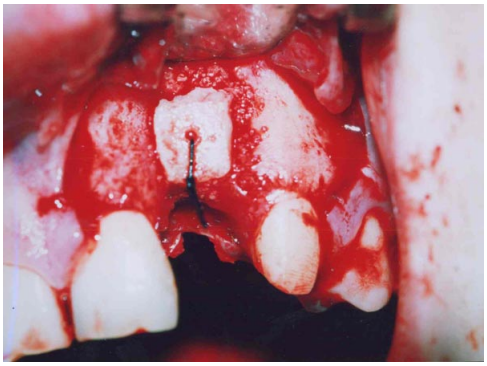

Fig.5 The graft in place and the suture loop fixation

Fig.6 The graft covered by the mixture autologous bone chips + α-TCP

Fig.7 Frontal view of the alveolar process at 6 months postoperatively

Fig.8 Preoperative radiograph of regio 22

Fig.9 Immediate postoperative radiograph of regio 22

Fig.10 Radiograph of regio 22 at 6 months postoperatively

Results

At 6 months after the surgery, the reconstructed alveolar crest showed a good dimensional stability and a satisfactory esthetic appearance (Fig.7). The radiographic examination displayed a slight resorbtion of the graft (Fig.10).

Conclusions

It could be concluded that
1) misdiagnosed traumatic events of the upper incisors can lead to extended trough-and trough crestal defects.
2) the treatment by bone grafting with autologous cortical chin blocks can be a predictable alternative to the guided bone regeneration with reinforced membranes.
3) in particular cases, bioresorbable suture loops can replace the fixation of the onlay with titanium screws, eliminating the need for a second surgery.

Abbreviations

TCP - TriCalciumPhosphate

This Poster was submitted by Assist. Prof. Dr. Dr. Stefan Ioan Stratul

Correspondence address:
Assist. Prof. Dr. Dr. Stefan Ioan Stratul
Victor Babes Medical University of Timisoara
Str. Em.Gojdu, no.5
300176 Timisoara
Romania.

Poster Faksimile:

Giant crestal defect of traumatic origin treated by autologous chin graft block and TCP. A case report.

Stratul S-I, Dinca A., Jianu R., Enache S., Vilceanu A. – Victor Babes Medical University of Timisoara, Romania

Victor Babes University of Medicine and Pharmacy Timisoara

ABSTRACT

This is a case report of a 26-y.o. female patient with history of sport accident which caused in time, by recurrent misdiagnosed apical infections, the loss of tooth 22 and its buccal cortical plate. Loss resulted in impressive inesthetic alveolar defect (cca. 20x15 mm) that discouraged prosthodontic attempts to restore the edentation. Radiographs showed complete lack of the buccal cortical plate and extended circular lacuna of the palatal cortical plate, which turned the apparent buccal defect into an extended trough-and-trough crestal defect. Buccal and palatal flaps were raised, the lack of the buccal plate and the circular lacuna of the palatal plate were confirmed. A rectangular cortical block was harvested from the chin, adapted and fixed to the thin palatal bony bridge by mean of special suture loop. Graft was completed with a combination of autologous bone chips and TriCalciumPhosphate, flaps were repositioned. 4 months after, alveolar crest showed good dimensional stability and satisfactory esthetic appearance. Radiographs displayed slight resorbtion of the graft. Conclusions: 1) misdiagnosed traumatic events of upper incisors can lead to extended trough-and trough crestal defects. 2) treatment by bone grafting with autologous cortical chin blocks can be a predictable alternative to the GBR with reinforced membranes.

INTRODUCTION

Sport accidents sometimes lead to delayed losses of the upper incisors, caused by inflammatory extensive resorptions of the buccal cortical bone. The aesthetic involvement of such losses can be dramatic and chances for implant-supported restorations are severely diminished. Chin graft blocks of autologous bone have been used as onlays for vertical augmentations of alveolar crests (*Proussaefs 2005, Pappalardo et al. 2004*).

CASE REPORT

This is a case report of a 26-y.o. female patient with a history of sport accident which caused in time, by mean of recurrent misdiagnosed and neglected apical infections, the loss of the upper left lateral incisor and of the correspondent buccal cortical plate. The loss resulted in an impressive inesthetic alveolar bone defect of cca 20x15x10 mm covered by a mucous cleft-like scar, that discouraged any prosthodontic attempt to restore the edentation of 22 (Fig. 1, Fig 2). Intraoral radiographs showed both the complete lack of the buccal cortical plate and an extended circular lacuna of the palatal cortical plate, which turned the apparent buccal defect into an extended trough-and-trough crestal defect (Fig.8). A buccal and a palatal flap were raised, the absence of the buccal plate and the circular lacuna of the palatal plate were confirmed (Fig.3). A rectangular cortical block was harvested from the chin (Fig.4), adapted and fixed to the thin palatal bony bridge by mean of a special suture loop (Fig.5). The graft was completed with a combination of autologous bone chips and α-TriCalciumPhosphate (BioBase® α-pore, Biovision GmbH, Ilmenau, Germany) (Fig.6, Fig.9) and the flap were repositioned. Postsurgical care consisted in 0.2% CHX rinses twice a day for the next four weeks.

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Fig.2 Preoperative occlusal view

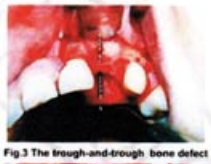
Contact the authors

Dr. Dr. Stefan-Ioan Stratul, DMD, PhD, MD+, Medicus Primarius, ResAssoc. (Johannes Gutenberg University of Mainz, Germany), Assist Prof. (Victor Babes University of Medicine Timisoara, Romania)

sbs@online.ro

EVOLUTION

At 6 months after the surgery, the reconstructed alveolar crest showed a good dimensional stability and a satisfactory esthetic appearance (Fig.7). The radiographic examination displayed a slight resorbtion of the graft (Fig.10).



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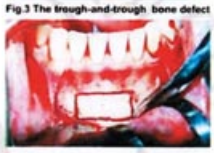

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CONCLUSIONS

It could be concluded that 1) misdiagnosed traumatic events of the upper incisors can lead to extended trough-and trough crestal defects. 2) the treatment by bone grafting with autologous cortical chin blocks can be a predictable alternative to the guided bone regeneration with reinforced membranes. 3) in particular cases, bioresorbable suture loops can replace the fixation of the onlay with titanium screws, eliminating the need for a second surgery.