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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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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 a-TriCalciumPhosphate (BioBase® a-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

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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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ABSTRACT

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Fig 1 Preoperative frontal view



Fig 2 Preoperative occlusal view

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EVOLUTION

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Fig.6 The graft covered with the mixture



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Fig.8 Preoperation radiograph



Fig.9 Immediate postoperative



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CONCLUSIONS

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