



INTRODUCTION

Dental loss affects the bone structure of the alveolar ridge. When a tooth is extracted, the bone in that area undergoes resorption, causing functional and aesthetic complications. To prevent this resorption, different bone regeneration materials are used, each with its own cost and size limitations. In recent years, Autologous dentin, a composite of hydroxyapatite, collagen fibers, and water, has been studied as an alternative material for bone regeneration. This research aims to determine the effectiveness of using autologous dentin as a graft material to preserve the walls of the post-extraction dental alveolus.

MATERIAL AND METHODS

For this study, 20 dental socket of incisor teeth from 7 patients were selected. All patients were treated at the School of Dentistry at Federico Henríquez y Carvajal University.

GROUPS

The patients were divided into two groups:

Study group: 10 socket treated with particulated autogenous dentin graft.

Control group: 10 socket which did not receive any biomaterial.

SELECTION CRITERIA

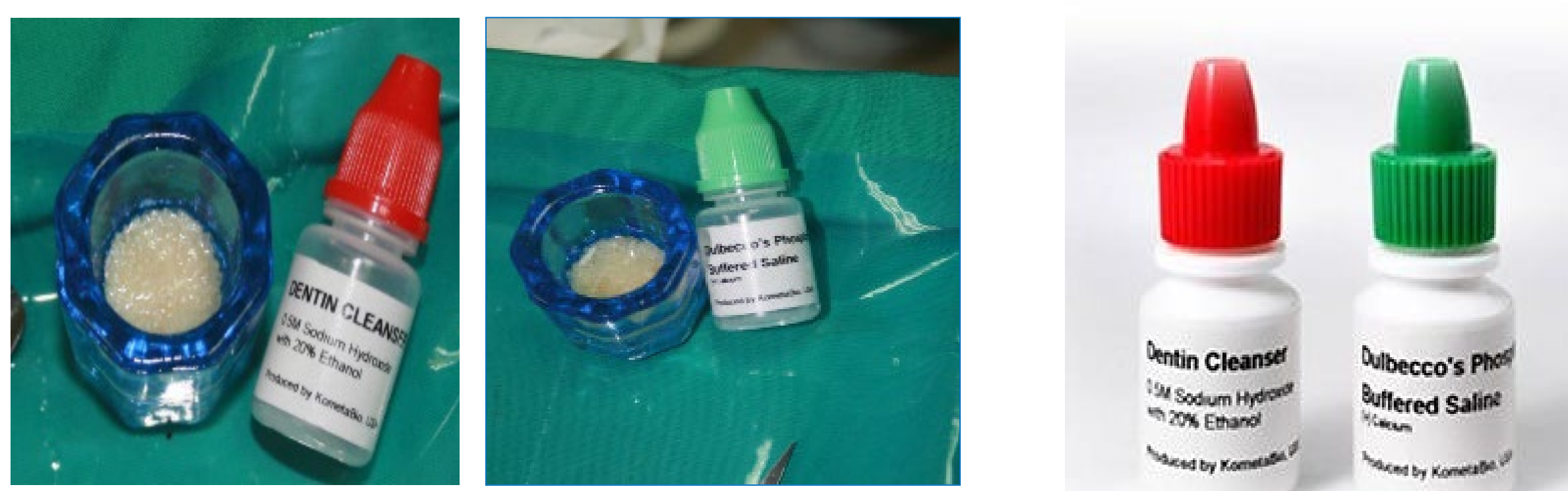
18 years-old patients needing a dental extraction in incisor teeth and without collapse of the alveolar walls. Those with significant bone defects were excluded. *Each patient underwent computer tomography to measure vertical and horizontal dimensions in each alveolus.*

SURGICAL PHASE

First, atraumatic extractions of the all dental pieces was performed. Second, every tooth was cleaned from of all caries, soft tissue, and guta-percha. Finally, all teeth were particulated and sieved in the CometaBio Smart Dental Grinder Machine.



Fig. 1 Particulated Dentin graft post atraumatic extraction



(a)

(b)

Fig. 2 (a) The dentin particles were immersed in Basic alcohol [0.5 Mol NaOH and 30% alcohol (v/v)] for 10 min to dissolve all organic debris, bacteria, and toxins of the. **(b)** For washing the dentin particulate, phosphate buffered saline (PBS) for about 2 to 3 min.

Finally, the particulated dentin was placed inside each alveolus followed by the placement of a membrane and suturing of the wound as seen in Fig. 3. In Fig. 4, a tomography of the treated area is shown.

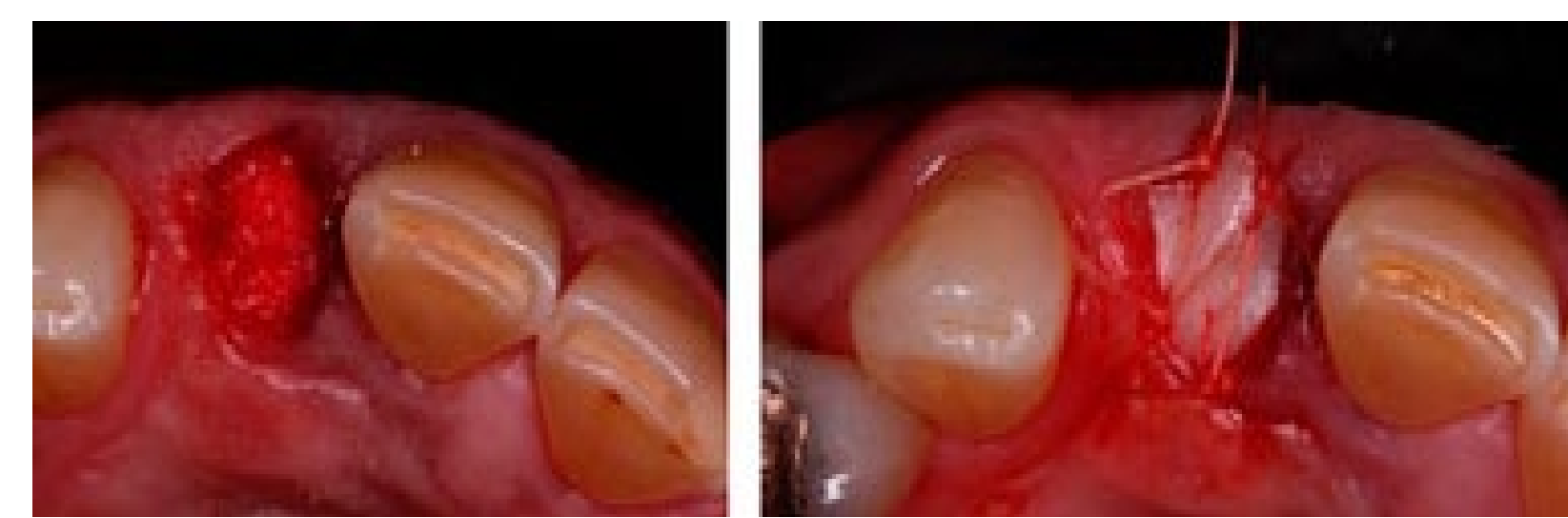
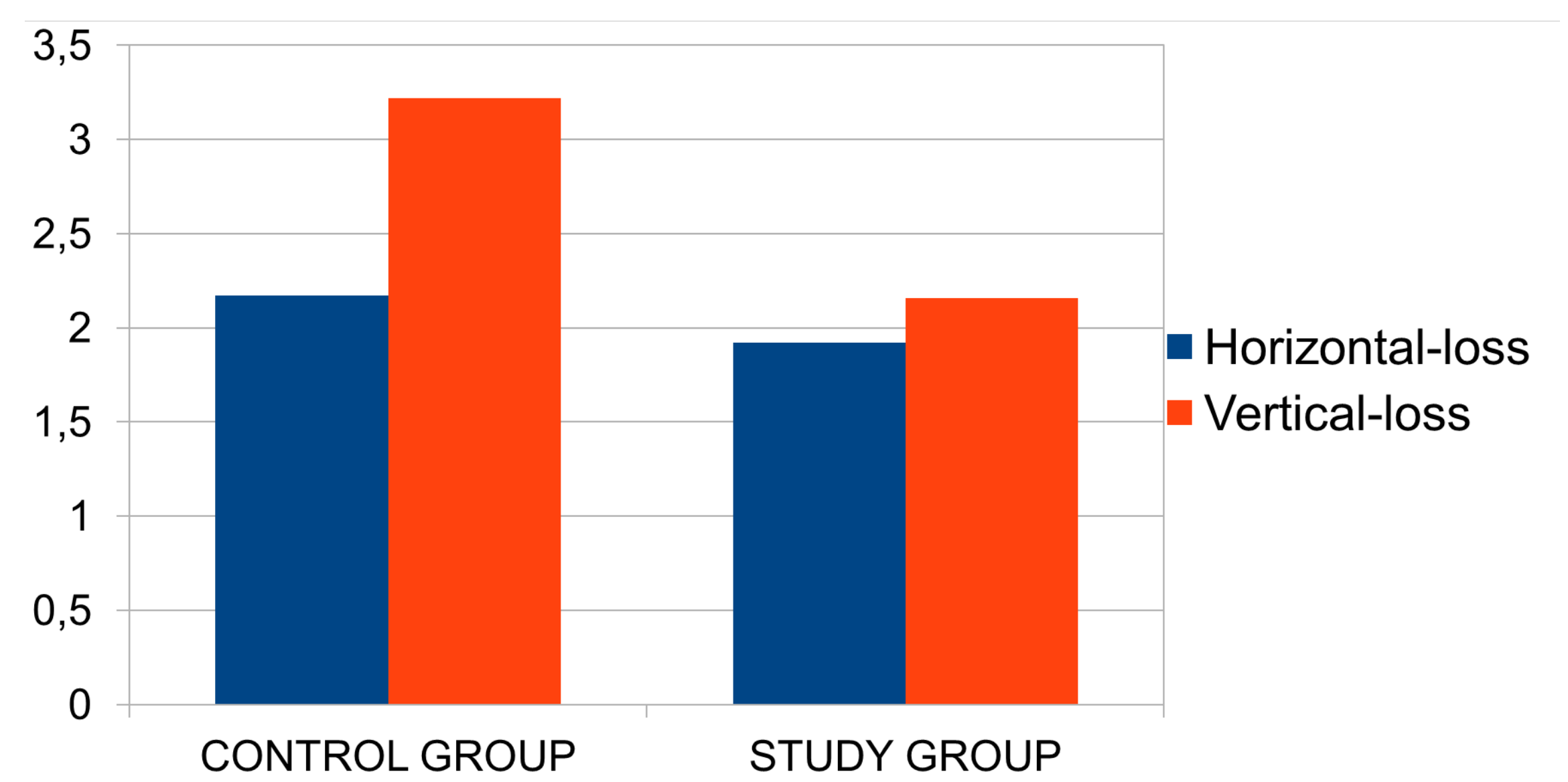


Fig. 3 Dentin graft placed and sutured wound



Fig. 4 Final tomography

RESULTS



Graphic 1. Results after 16 weeks

CONCLUSIONS

The dimensional reduction after extraction in the dentin group was lower than the control group at 16 weeks post-surgery, both vertically and horizontally. Therefore, it can be concluded that autologous dentin is a promising material for use in alveolar preservation techniques. We recommend further studies to continue this line of research for more accurate results.

BIBLIOGRAPHY

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