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OBJECTIVES
To describe a case report of a reconstruction of a severe horizontal bone defect previous to the implant placement using exclusively biomaterials without the use of autologous bone graft, showing the histological findings and volumetric changes 12 months after the intervention.

METHODS
A systemically healthy, female patient requiring for an horizontal bone reconstruction at the anterior maxilla is presented. Once an accurate clinical and radiological analysis was done, the patient was selected for the intervention. After the elevation of the full-thickness flap, due to the extension and severity of the bony defect, two blocks of bovine bone xenograft (BBBX) (Cerabone Block-Bottiss® Biomaterials) fixed with osteosynthesis screws (Maxil®) were used. The blocks were isolated and covered with a non-resorbable (d-PTFE) membrane (Permanem-Botiss® Biomaterials), that was secured to the remnant bone with fixation pins (Klockner®) following a guided bone regeneration (GBR) procedure. Finally, the flap was advanced coronally and stabilized with sutures without tension, allowing primary closure of the wound.

RESULTS
After 11 months of healing without complications, re-entry was performed and a sample of bone tissue from the implant bed was extracted with a trephine. Implant placement was performed without the need for additional regeneration of the treated area. Three months after the placement of the implants, the provisionalization phase was carried out, lasting a period of at least 3 months. The radiological analysis revealed and augmentation of 3.8mm, 4.4mm and 5.3mm for the No. 12, No 21 and No 22, respectively. The volumetric gain obtained by comparing pre-treatment and post-treatment STL models in area 21-22 showed a gain of 189mm³. The histological analysis of the sample obtained in the implant bed revealed the presence of a dense connective tissue with lacunae of bone formation and the presence of xenograft remains.

CONCLUSIONS
Lateral bone augmentation using exclusively biomaterials can be a suitable alternative to the use of an autologous bone graft, avoiding problems associated with the autologous blocks, thus solving complex cases of severe bone loss. This procedure obtained satisfactory clinical results regarding the bone availability that allowed a proper three-dimensional implant placement as well as a volumetric gain measured both with CBCT and with intraoral scanner. However, the histological findings showed the limited ability of the bone front to completely colonize the outer part of the blocks. More studies are needed to evaluate the long-term clinical behaviour of this procedure.

BIBLIOGRAPHY