VERTICAL GUIDED BONE REGENERATION (GBR) WITH TITANIUM-REINFORCED D-PTFE MEMBRANE AND PREHYDRATED CORTICOCANCELLOUS BONE GRAFT: A CASE REPORT.

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INTRODUCTION
An appropriate bone volume is a key factor for long-term result of implant therapy. Loss of teeth often results in horizontal and vertical alveolar ridge defects; as consequence, bone augmentation techniques are often required, i.e. GBR. This kind of technique established the use of a combination 50% of autologous bone and 50% of heterologous bone. The aim of this case report is to show the result of GBR technique using a d-PTFE membrane in association with 100% of heterologous bone graft.

CASE PRESENTATION
A 55-year-old male patient with a non-contributory medical history, presented to our observation to improve masticatory ability in the lower right side of the mouth. A comprehensive examination was done to determine periodontal status of adiacent teeth and overall oral health of the patient. Clinical and radiographic examination revealed that #47 and #46 teeth were lost many years ago and a severe vertical defect resulted in the area. Treatment planning included a GBR surgery with simultaneous implant surgery. After local anesthesia, a midcrestal fullthickness incision was performed in keratinized tissue; surgical flap was then elevated and mental nerve was isolated. The passivity of buccal flap was obtained with a horizontal realesse periostal incision, while lingual flap was realased removing the mylohyoid muscle insertion. Implant site was performed and a 5-mm wide and 11.5-mm long implant (BT-konic, BTK implants, Biotec, Italy) was placed with its platform on the ideal line situated 2mm under cement-enamel junction of adiacent teeth. A non-resorbable d-PTFE titanium-reinforced membrane (Cytoplast Ti-250, Deore materials, Osteohealth, USA) was fixed with mini-screw and periimplant bone defect was filled with 100% of corticocancellous porcine bone graft prehydrated with collagen gel (MP3, Osteobiol, Tecnoss Dental, Italy). A primary closure was obtained to have an optimal soft tissues healing to avoid early or late exposure of non-resorbable membrane. After nine months, the re-opening surgery was accomplished to remove menbrane, to check the implant osseointegration and to evaluate bone volume around implant. After 15 days of soft tissues healing, a previously-established prosthetic protocol was followed to realize the definitive restoration with a single crown. One year later, clinical examintation showed soft tissue contours with no significant changes and radiographic examination revealed stable bone levels around implant, without significant periimplant bone loss.

RESULTS
The healing period was uneventful, as reccomended in GBR protocol and no exposure of membrane was observed. At re-opening surgery, implant appeared stable and submerged by newly formed tissue that was similar to surrounnded bone. The histological analysis revealed presence of well-structured bone tissue and particles of grafted material that appeared perfectly osseointegrated without fibrous tissue interposition. The healed bone was able to support the functional loading of implant and was perfectly stable after 18months of follow-up.

DISCUSSION AND CONCLUSION
The findings from this case report could support the use of a heterologous biomaterial alone for vertical ridge augmentation by means of GBR techniques. The regenerated bone may lead to proper osseointegration of a dental implant simultaneously inserted at the time of the regenerative procedure. Nevertheless, long-term clinical studies are needed to confirm the positive effect of prehydrated corticocancellous porcine bone graft in enhancing the lasting stability of the vertically augmented bone.
REFERENCES