

Ridge Augmentation with simultaneous Implant placement using Bone Ring Allograft

MohamedTarek A. Omran, B.D.S, M.S; Katherine Hanser, DMD; Bret Gruender, D.M.D; Robert L. Blackwell, D.D.S
Southern Illinois University – School of Dental Medicine

Introduction:

Dental Implant treatment usually needs bone augmentation to have a better surgical and restorative outcome. Guided bone regeneration (GBR) is a surgical procedure used to help in the regrowth of lost hard and soft tissues with the help of the barrier membrane. GBR often performed in two surgeries. The drawback of this procedure is that patient has to do 2 surgeries and treatment time is increased. This case report will show a less invasive technique by simultaneously doing GBR and implant placement using an allograft bone ring. The bone ring will be fixed by preparing the deficient site and the bone ring and using the implant apical threads to stabilize the implant.

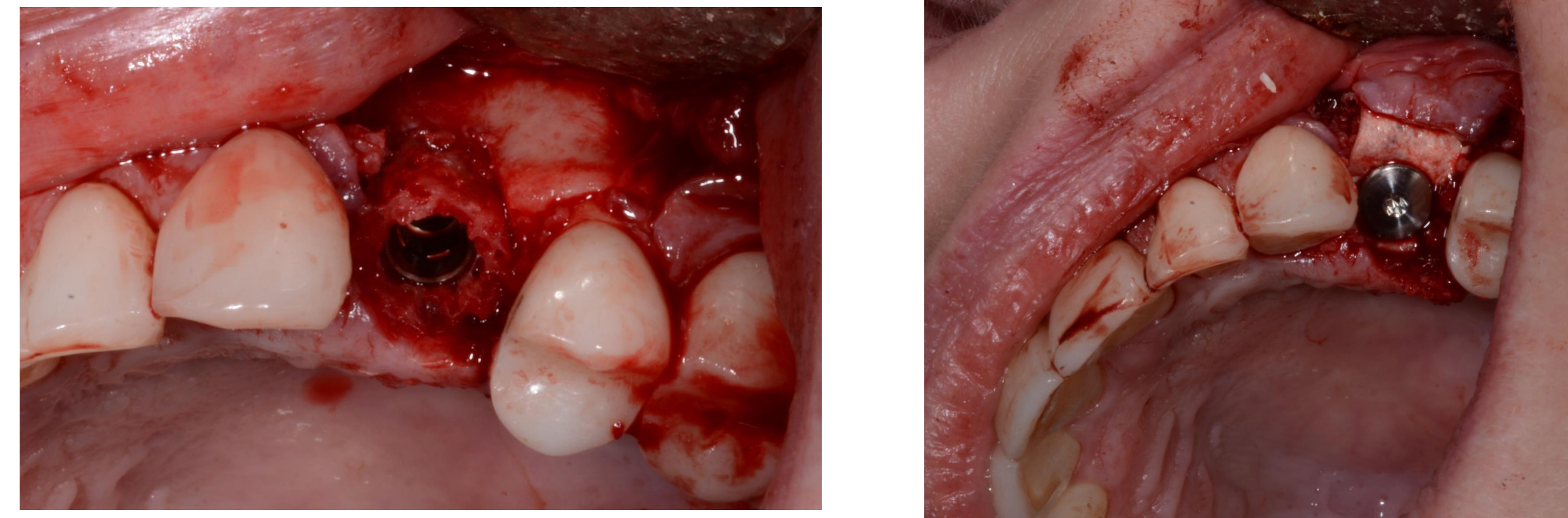


Surgical Treatment:

The surgical treatment was performed under local anesthesia. Mid crestal flap from the mesial of tooth # 11 to the distal of tooth # 13. the osteotomy was done on tooth # 12 using the planing drill. The bone ring was adjusted to the correct width of the osteotomy and then verified the stability for the ring. The implant used in this case was a 4x10mm implant and was placed 1-2mm subcrestal of the bone ring. Cover screw placed and Freeze-Dried bone allograft used to graft around the bone ring. The barrier membrane adjusted and adapted to the grafted site. Fixation cap placed to stabilize the membrane. The flap was sutured and primary closure was achieved. The patient was seen regularly for follow up. The un-covery surgery was performed after 6 months from the implant placement.



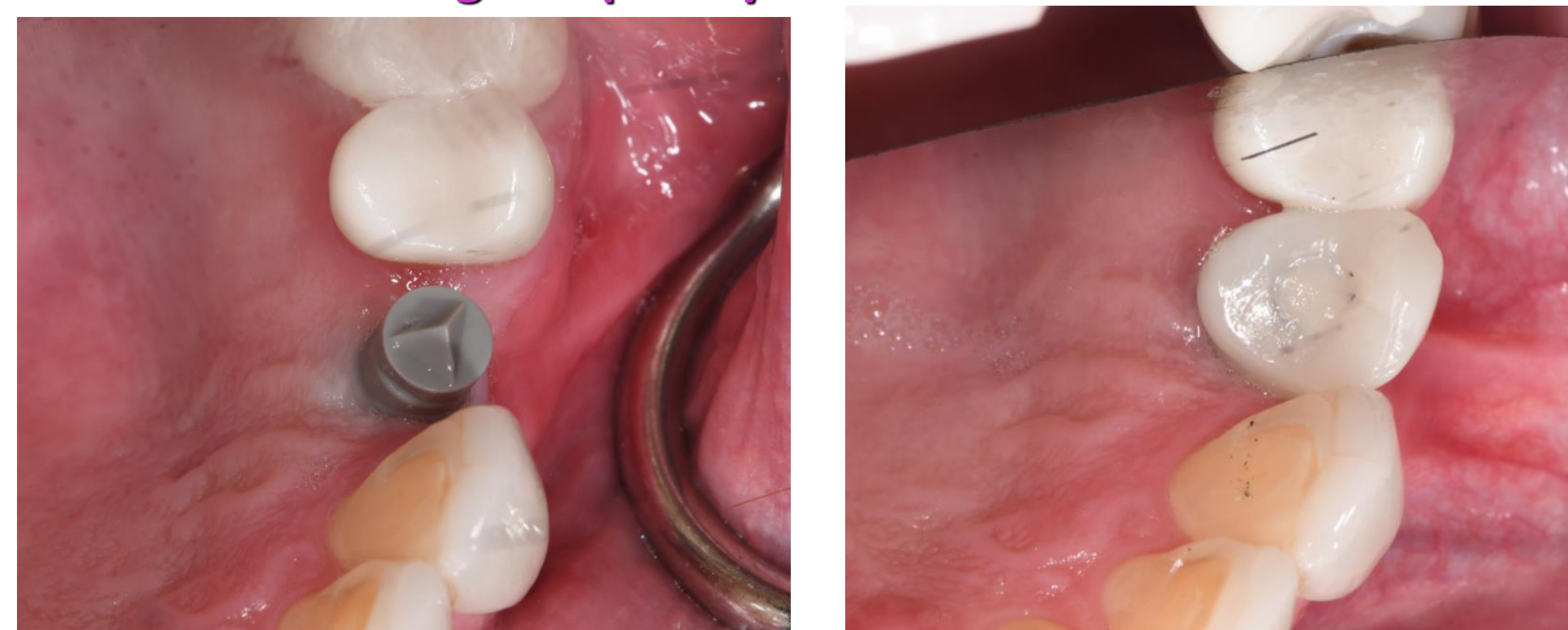
The implant used in this case was a 4x10mm implant and was placed 1-2mm subcrestal of the bone ring. Cover screw placed and Freeze-Dried bone allograft used to graft around the bone ring. The barrier membrane adjusted and adapted to the grafted site. Fixation cap placed to stabilize the membrane. The flap was sutured and primary closure was achieved. The patient was seen regularly for follow up. The un-covery surgery was performed after 6 months from the implant placement.



Prosthetic treatment:

The patient came back for a follow-up and Osseointegration check. No mobility nor pain detected when the healing abutment removed and placed back. The digital impression was done by using CEREC Omnicam unite to scan the scanning body. Screw retained crown milled. Crown polished, verified fit, interproximal contact, contour, occlusion, and esthetic.

Immediate loading Temporary crown



Results

1 premolar was treated in this report. The mean insertion torque values for the implant was 40 Ncm. The definitive restoration was a screw-retained crown. Short-term survival rate (13 months) was 100% for the implant placed



Conclusion:

The allograft ring can be used to repair both horizontal and vertical ridge defects. This case study shows how the technique is safe and predictable. The use of bone ring graft with simultaneous implant placement saved the patient from doing a second surgery to place the implant. Also, the technique helped saving treatment time and achieved higher patient satisfaction.

