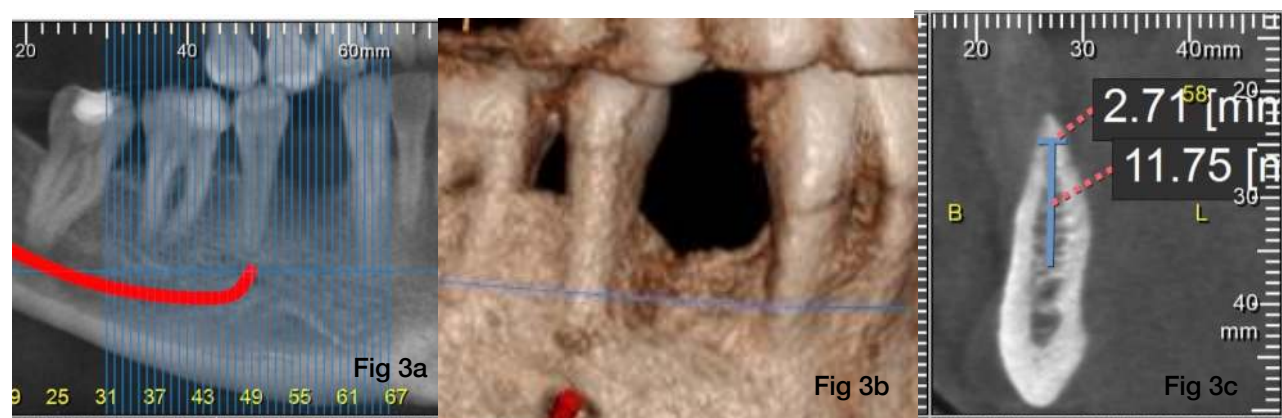
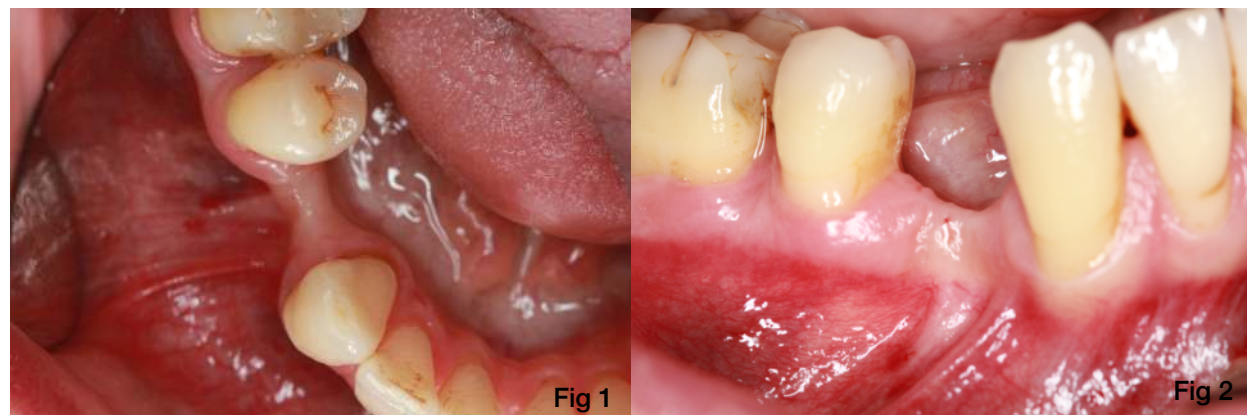


# TREATMENT OF A HORIZONTAL BONE DEFICIENCY WITH AUTOLOGOUS BONE AUGMENTATION PRIOR TO IMPLANT PLACEMENT

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## Abstract

32 year old male patient came to Istanbul University Faculty of Dentistry Department of Periodontology with a missing teeth complaint. He had lost his right lower first premolar due to localized hard tissue loss 2 years ago. (Fig 1) (Fig 2) He was a healthy non-smoker and did not use any medication. Following periodontal rehabilitation, patient were examined and evaluated for decision making for the edentulous area. He rejected the fixed partial prosthesis treatment choice.

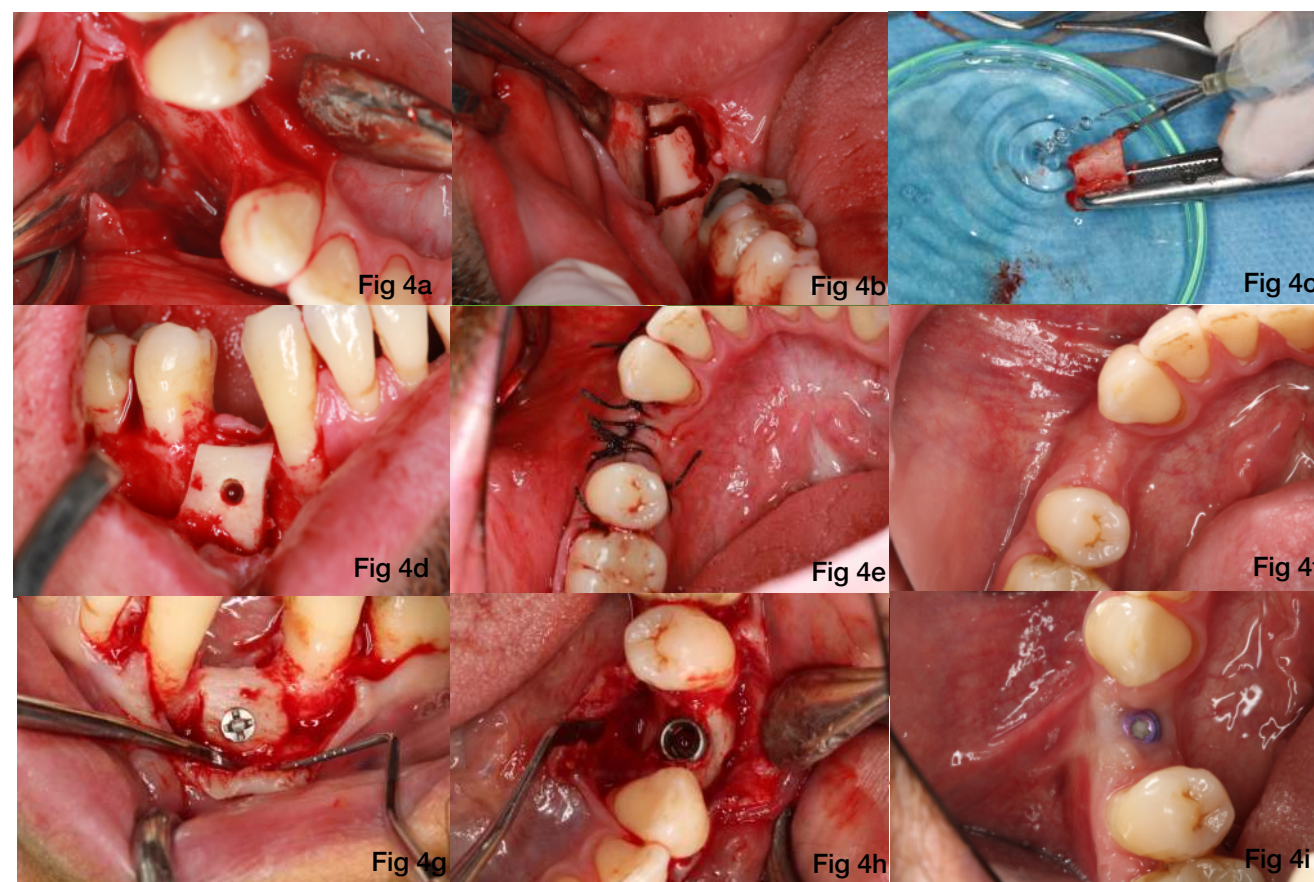


Following clinical and radiographic evaluation(Fig 3a, 3b,3c), alveolar crest in the edentulous area have been found to be horizontally extremely thin (3 mm) for the implant placement. The patient was informed that bone grafting was necessary prior to implant placement. A standard two-stage surgical protocol was planned. Autogenous bone block graft was suggested to the patient in order to augment the edentulous area because of its superior characteristics (osteoinductive, osteoconductive and nonimmunogenic material) compared to the alternatives. The bone block has been decided to harvest from the retromolar region (ramus mandibularis) on the same (right) side of the jaw. (Fig 4b)(Fig 4c)

The excessive bone loss usually prohibits the placement of dental implants in the ideal prosthetic position and compromises the protection of peri-implant health. Various techniques and materials have been developed for augmentation of the resorbed alveolar ridge.(1) In cases with insufficient amount of alveolar bone for primary stability of an implant, the alveolar ridge has to be augmented prior to implantation. The defected area has been shown to be treated either with xenografts supported with different type of membranes, with autogenous bone blocks or with the mix of autogenous and xenografts. (2) Among these, autogenous bone still remains as the "gold standard" because of its osteoinductive characteristics. (3) (4)

## Results

First operation was designed to increase the amount of the horizontal bone and at the end of the surgeries healing process was unproblematic.(Fig 4a) The amount of bone before was 3 mm and it increased to 7 mm at the end of 6 month healing time.(Fig 4d) (Fig 4f)

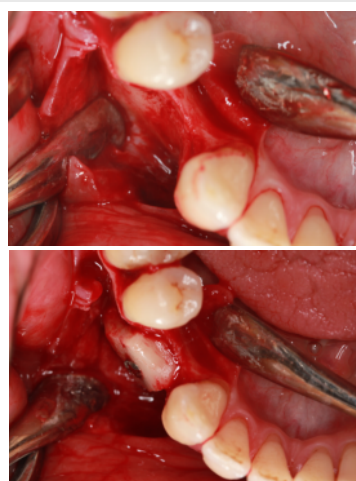


The second procedure was the implant surgery. The healing process showed there was no contraindication for an implant.(Fig 4f) After the removal of the screw the part in the newly formed bone was bleeding, which showed the liveliness of the newly formed bone. Since the outcome was above expectations implantation process was again unproblematic. (Fig 4h)

Healing process showed no complications and the patient was happy with the results(Fig 4i). It is still in the osseointegration phase of the implants so we are expecting the final results.

## Background and Aim

The aim of this case presentation is to show the short-term clinical outcomes of the implant placement in an edentulous area where augmented with autologous bone graft harvested from the mandibular ramus.



## Conclusion

Horizontally defected alveolar ridge is a common problem after a tooth loss and it might be a contraindication for implant placement. Autogenous bone still remains as the "gold standard" for bone augmentation procedures because of its osteoinductive, osteoconductive and nonimmunogenic characteristics. These type of defects may be treated with augmentation procedures with appropriate methods and materials usage and become recipient areas to be able to allow implant placement.

## Methods and Materials

On the operation day, following the local anesthesia, a bone block graft harvested from the retromolar region was fixed with screws (titanium alloy) to the recipient site as onlay graft. After fixation of the graft flaps were fixed with the sutures in both operation areas. There was no need for bone chips around the block graft. Patient has been prescribed antibiotics (amoxicillin+clavulanic acid 1 gr i.m. twice daily during a week), non-steroid anti-inflammatory drug (every 6 hours during first 2 days) chlorhexidine mouthwash and corticosteroid (40mg i.m once on the operation day) postoperatively. Sutures were removed 1 week later.

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