



INTRODUCTION

Maxillary sinus augmentation is a common and predictable procedure utilized to gain vertical alveolar bone height to allow for successful placement of dental implants in the deficient posterior maxilla. The surgical techniques, however, may be associated with intraoperative complications, the most common of which is Schneiderian membrane perforation and, less commonly, bleeding and the loss of an implant into the sinus cavity.

CASE PRESENTATION

In the current report, we present two cases with unique complications. A large perforation which was discovered after the graft material had been placed was successfully managed by carefully removing the graft material from both sides of the perforation and sealing the perforation with a resorbable membrane and a tack fixation. The second case involved a patient who presented with an implant that had migrated into the sinus during an unsuccessful transcrestal sinus lift. The case was successfully treated by locating and removing the implant through an intentional membrane perforation, repairing the perforation, and placing a new implant with simultaneous grafting.

FIRST PATIENT

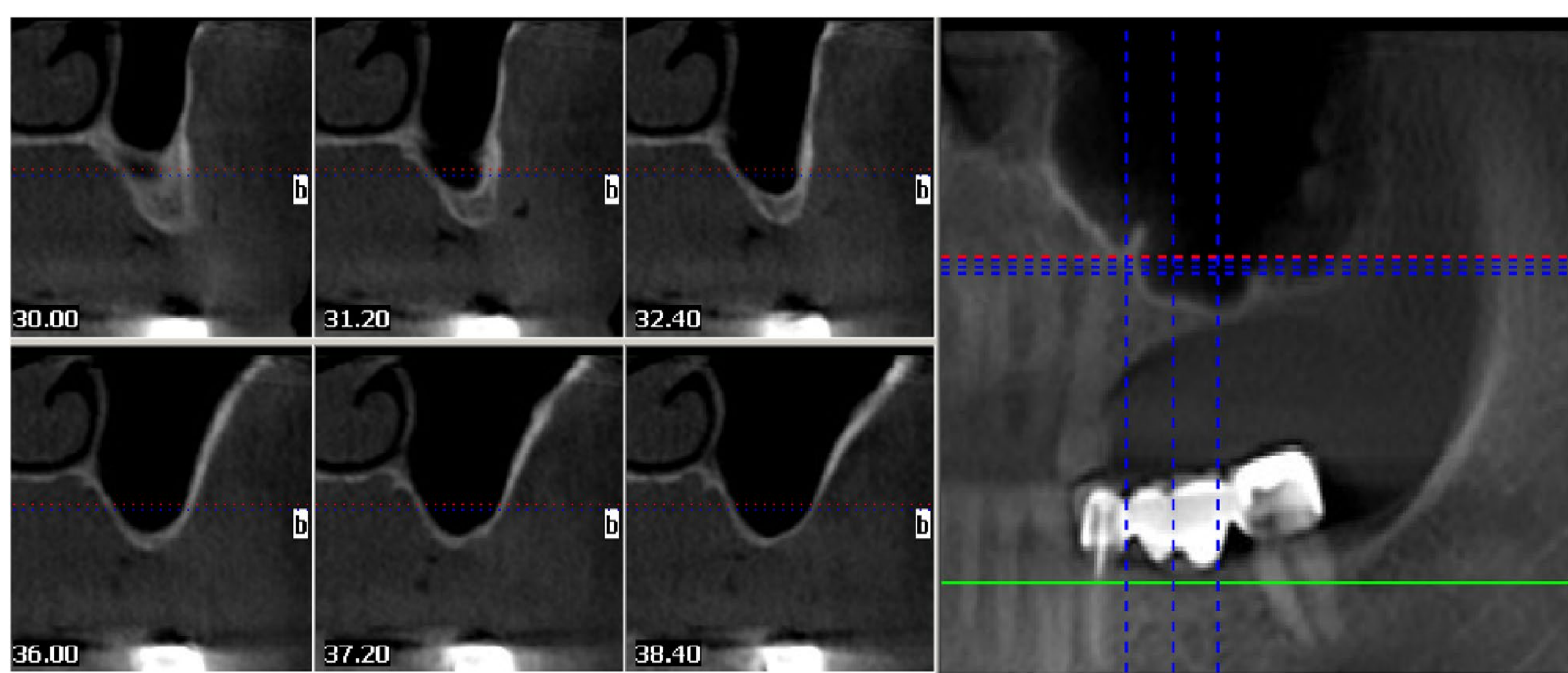


Fig 1. Preoperative CBCT of the upper left sinus area.

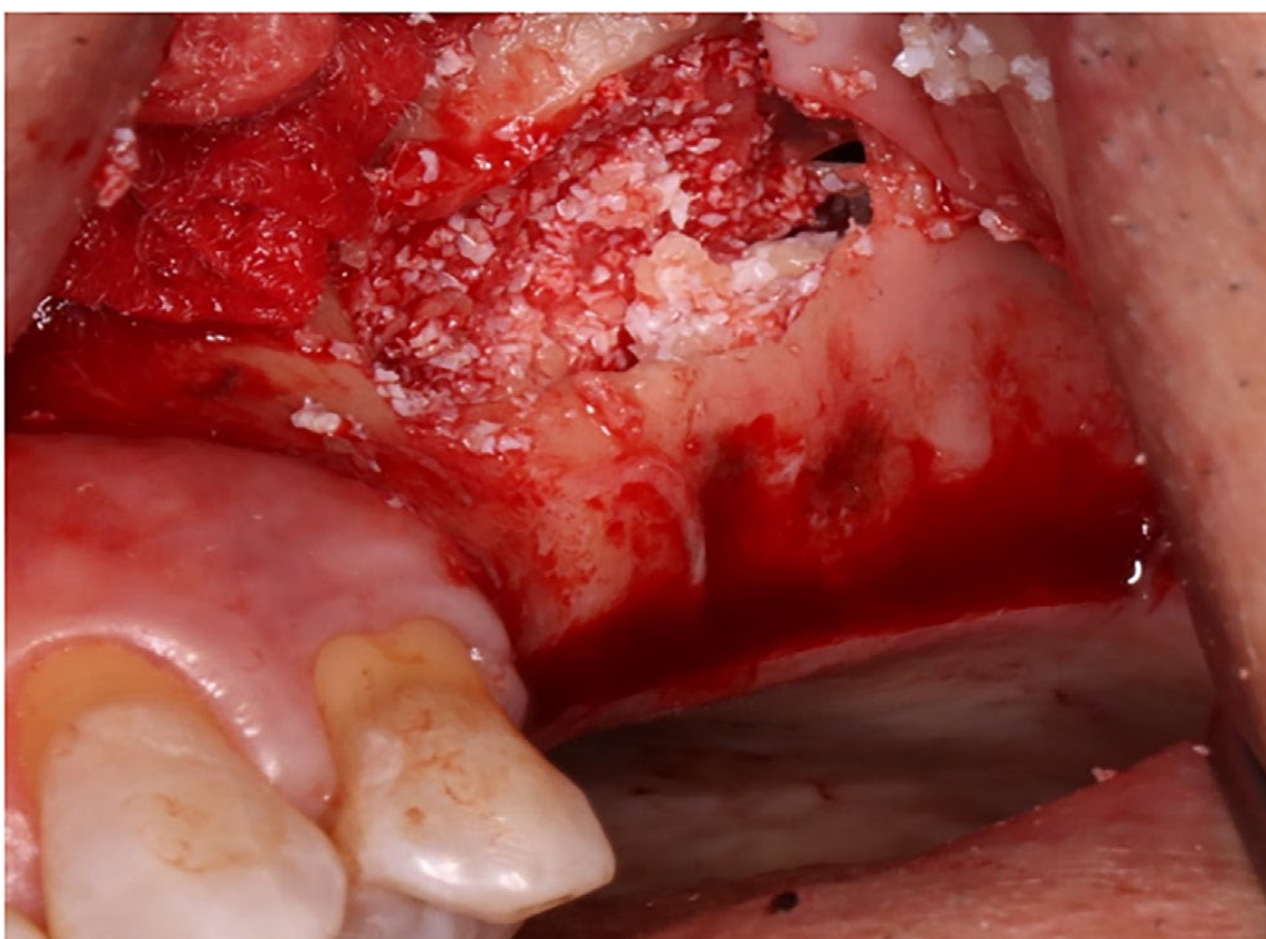


Fig 2. Large perforation on the distal wall of the sinus membrane seen after the bone graft was placed.

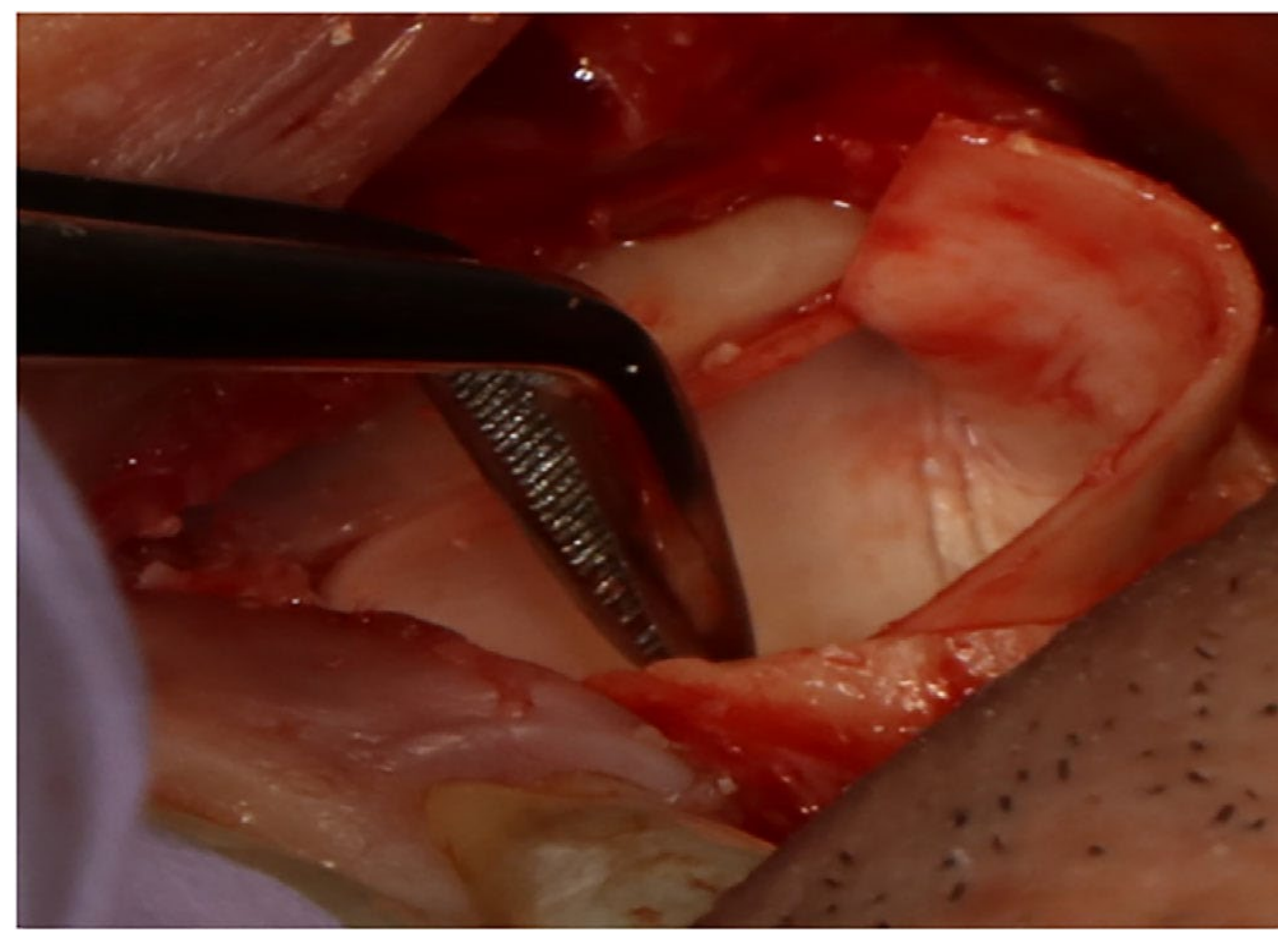


Fig 3. Graft removed, and a rigid collagen membrane placed in a proper position prior to placing a tack to stabilize it.



Fig 4. Collagen membrane tacked at posterior wall and sinus cavity regrafted.



Fig 5. Postoperative panoramic radiograph of the grafted maxillary sinus.

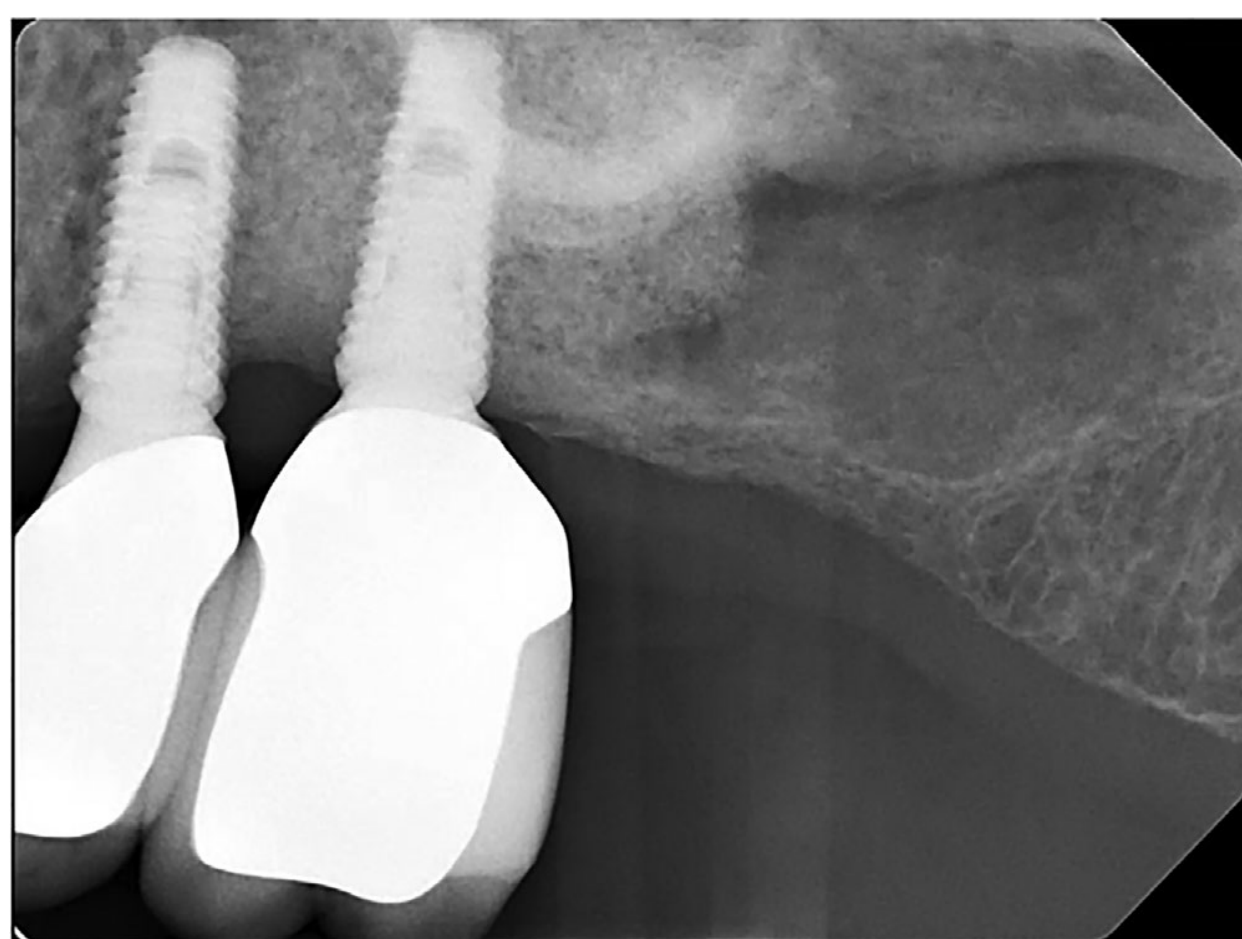


Fig 6. Postoperative periapical radiograph of implant placement and loading at #13 and #14.

SECOND PATIENT



FIGURE 7 Clinical presentation of missing tooth at #3.

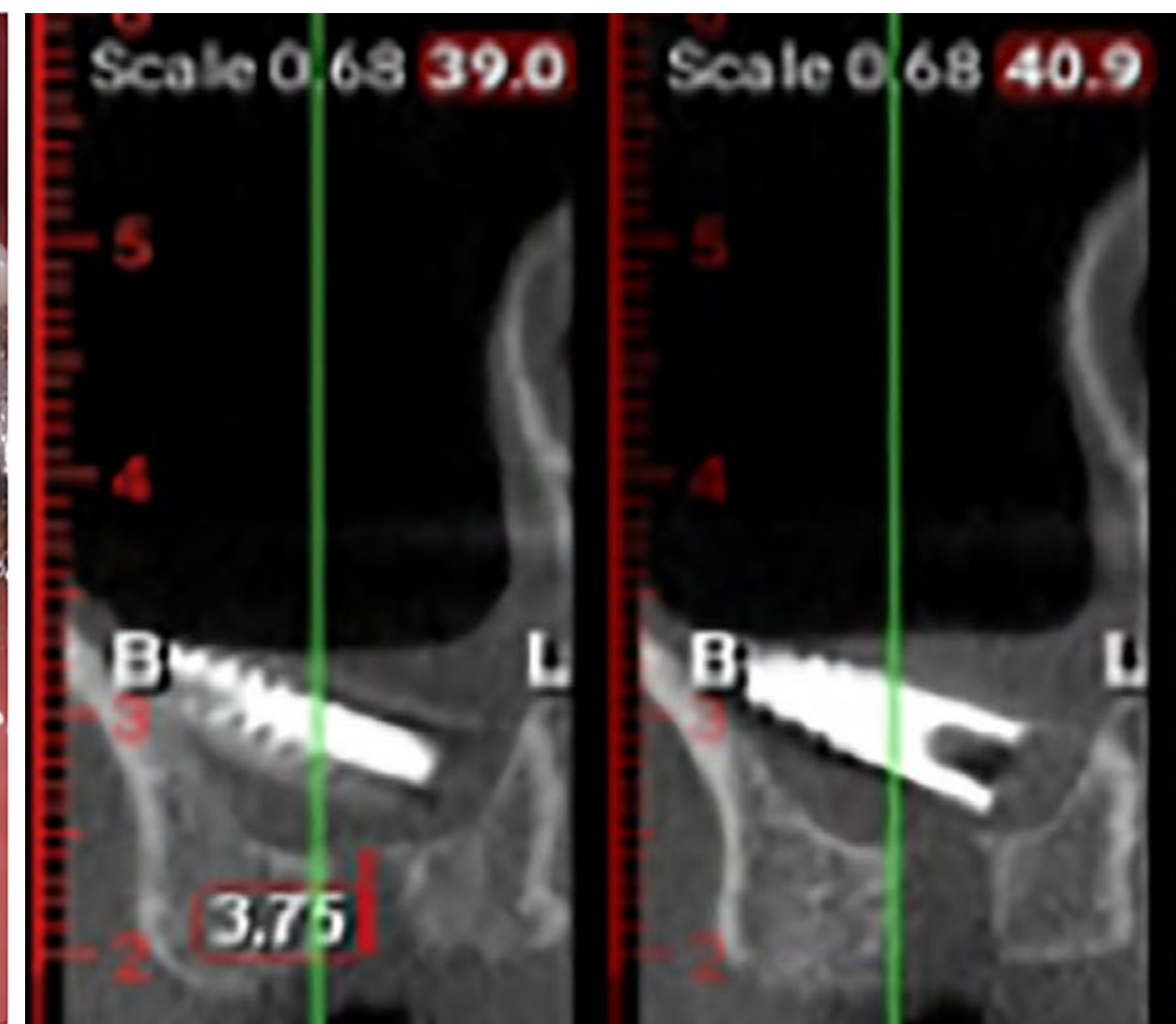


FIGURE 8 Preoperative CBCT of the migrated implant in the right sinus cavity.

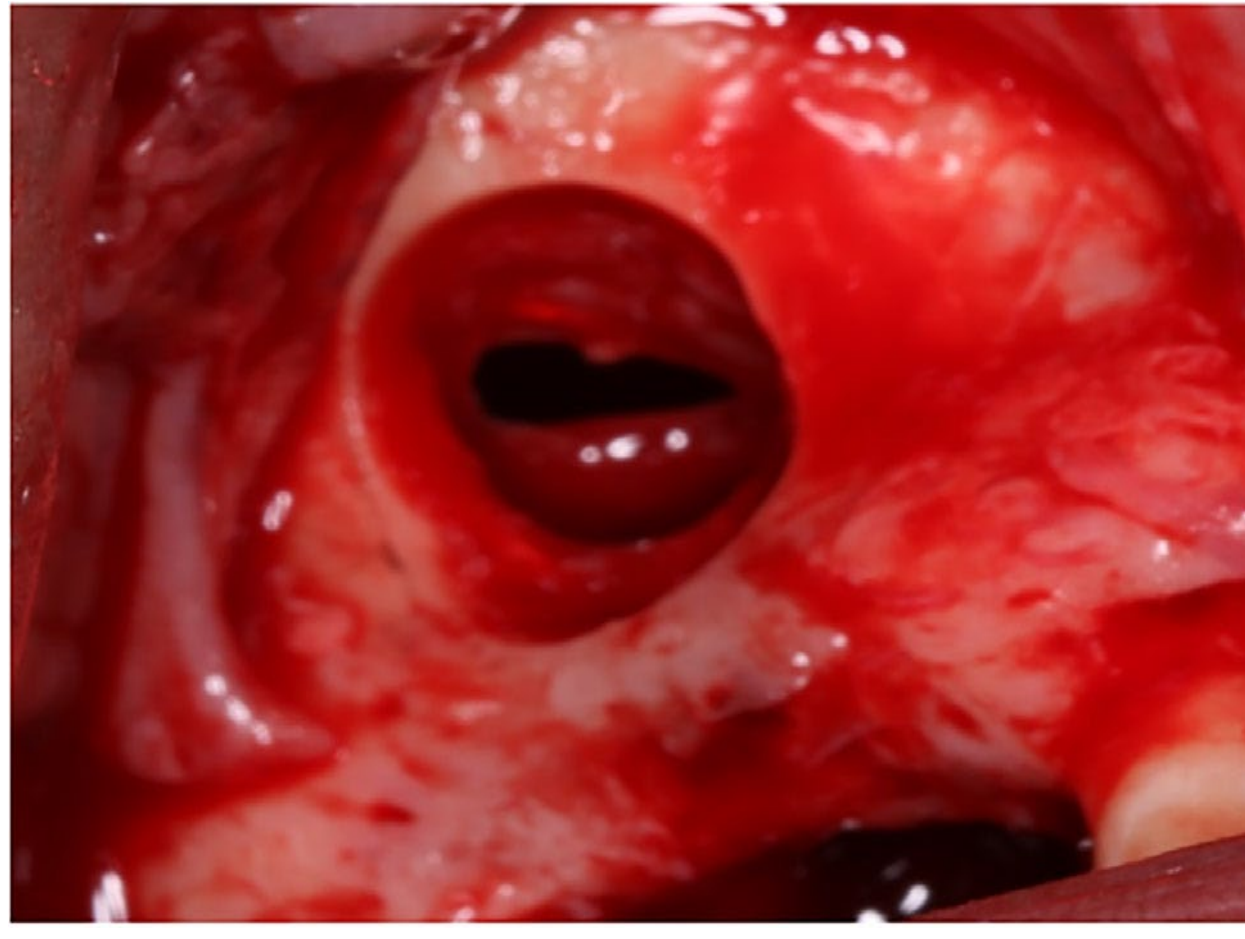


Fig 9. Initial intentional perforation was made with a periodontal probe to locate and retrieve migrated implant.

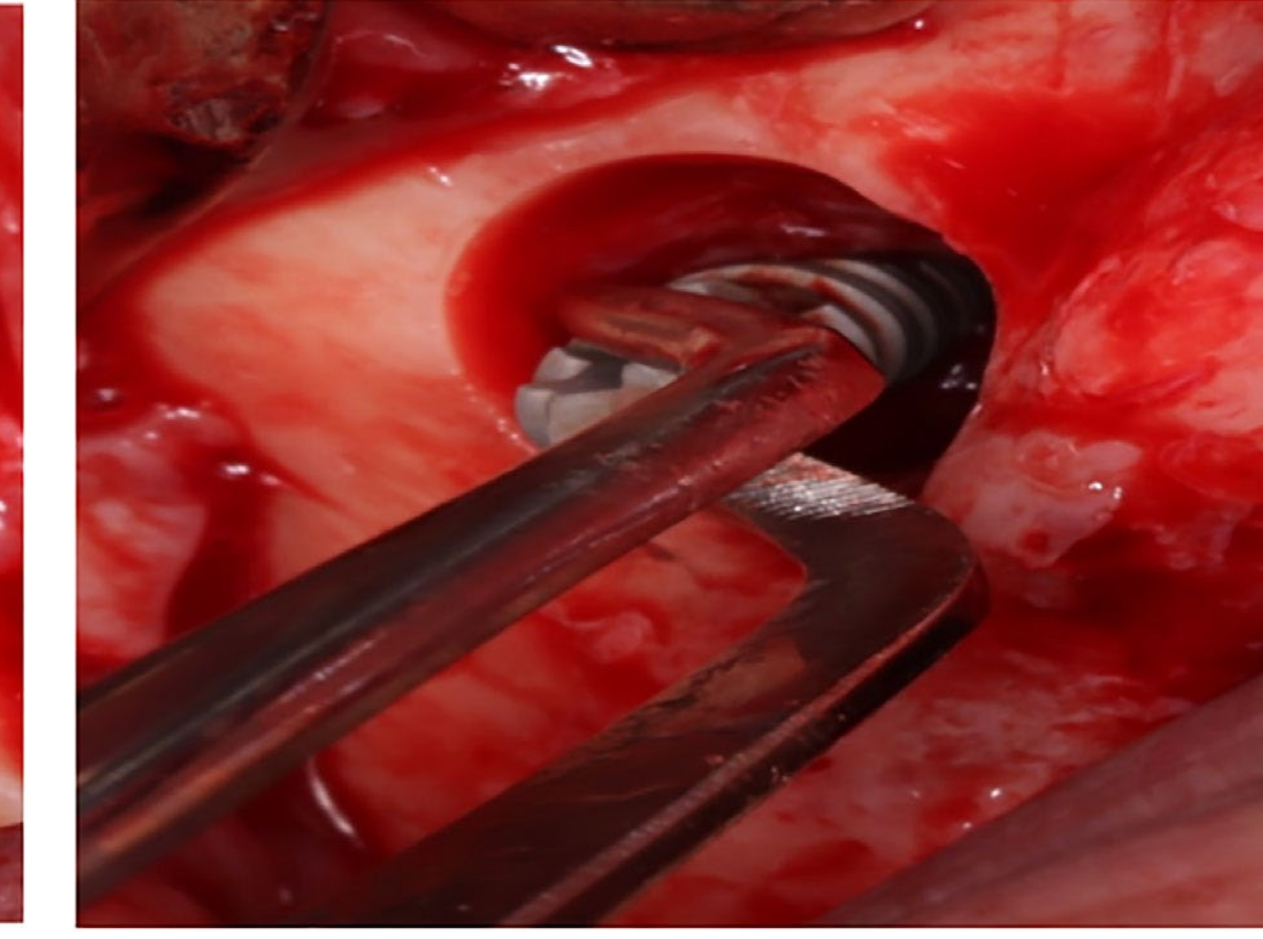


Fig 10. Dental implant was removed from the sinus cavity.

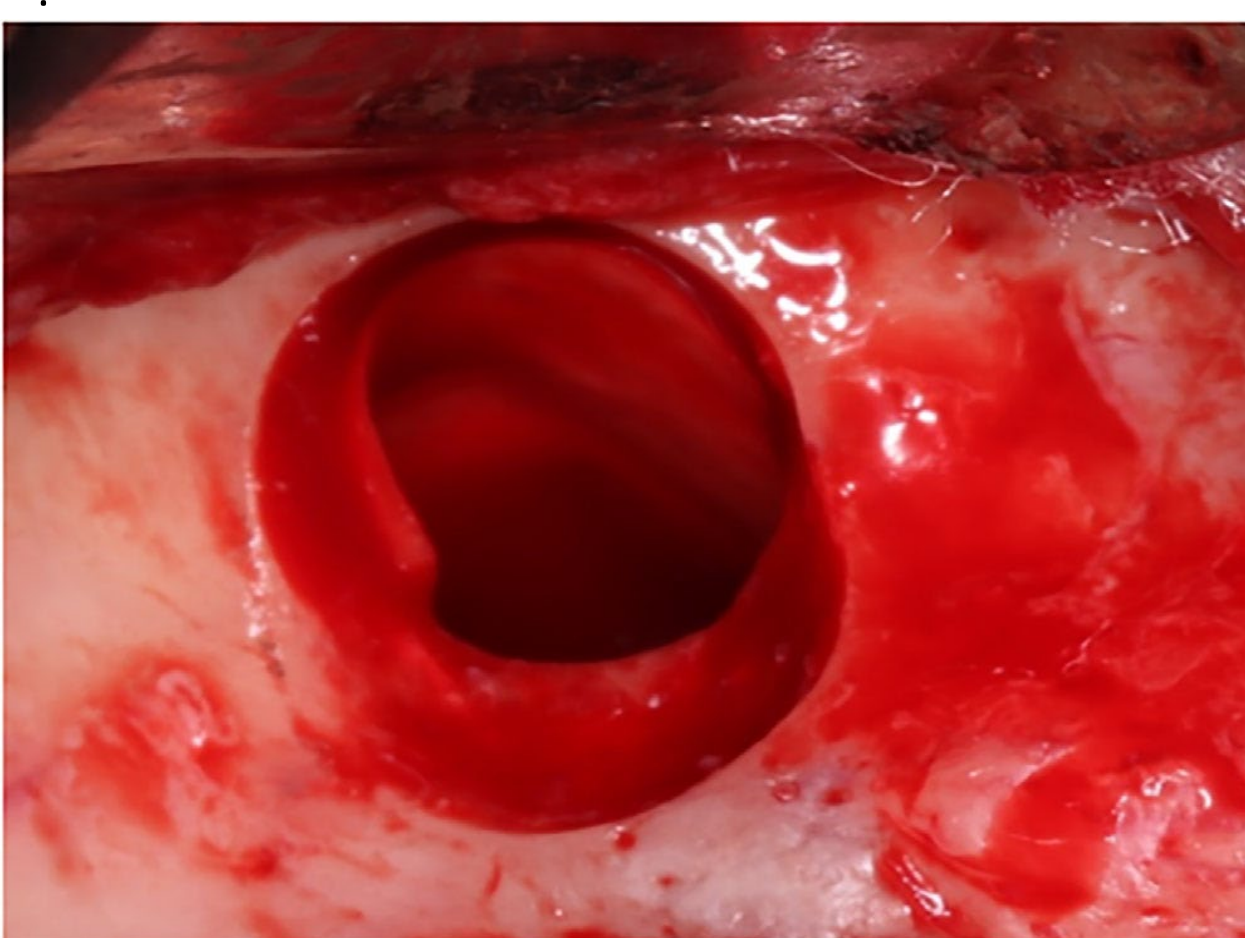


Fig 11. Collagen membrane placed to repair the intentional perforation.



Fig 12. Implant placement followed by graft placement.

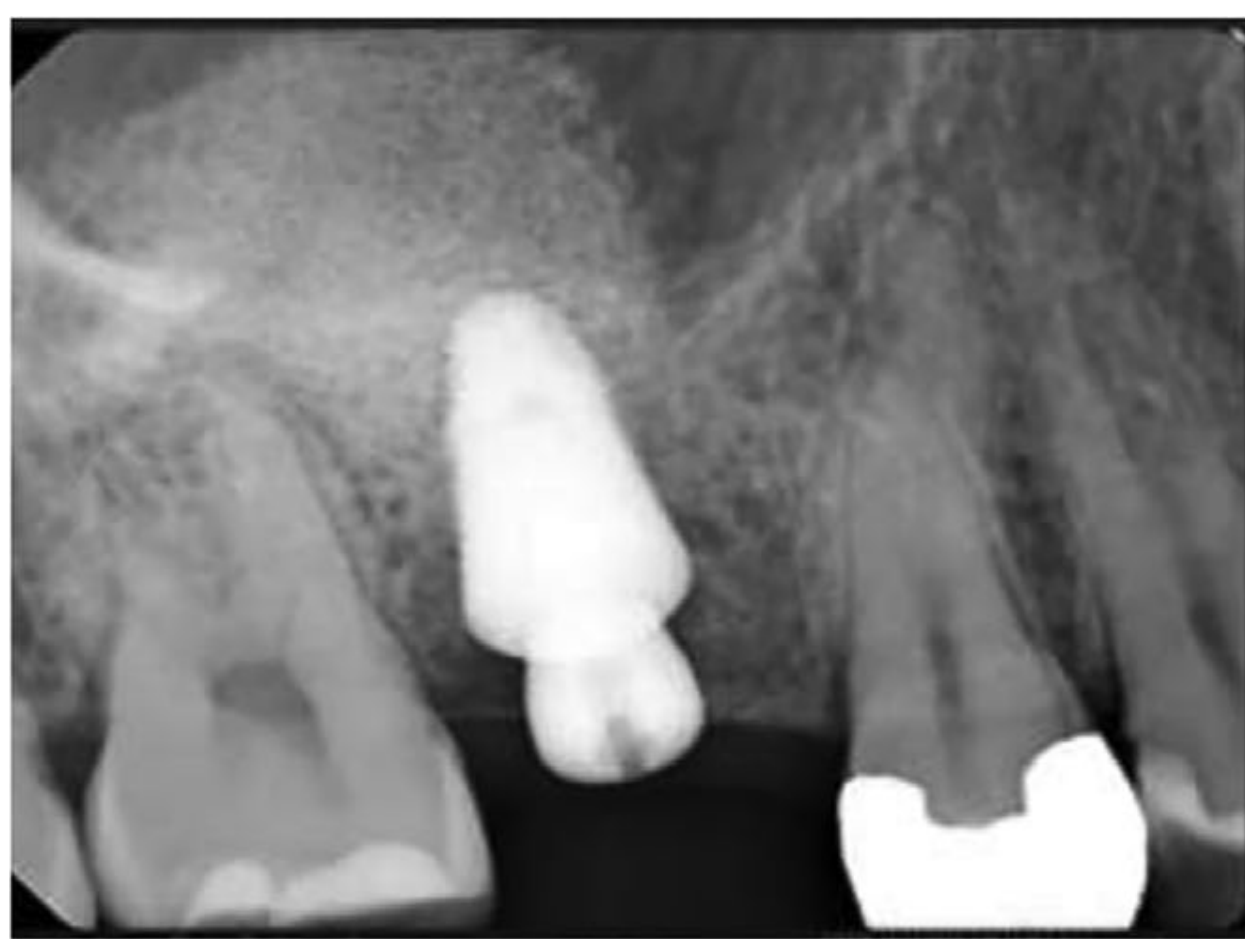


Fig 13. Postoperative X-rays of implant placement and loading at site #3.

CLINICAL OUTCOMES

In the first case, a successful sinus lift with containment of the bone graft material was achieved. The second case was successfully treated by removing the implant, repairing the sinus membrane, and placing a new implant and graft material all during the same procedure. In both patients, dental implants were successfully restored within 7 months (Figures 6 and 13).

CONCLUSION

Management and repair of maxillary sinus perforations, either intentionally or iatrogenically created is a predictable procedure that results in successful procedural outcomes with either delayed or immediate dental implant placement.

SUMMARY

Two case reports are presented to emphasize the importance of managing sinus membrane perforations resulting from complications during an attempt at transcrestal sinus lift with simultaneous implant placement or a lateral window procedure. Careful diagnosis, treatment planning, and protocol implementation may prevent such complications. Stabilization of the collagen membrane with fixation tacks when indicated is key for success.