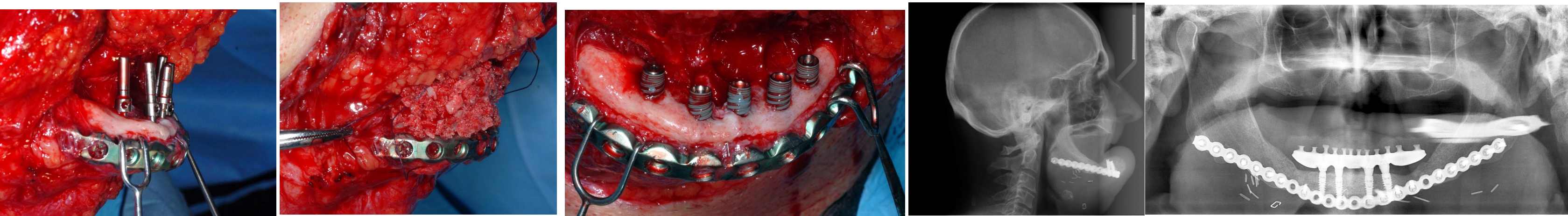


Introduction

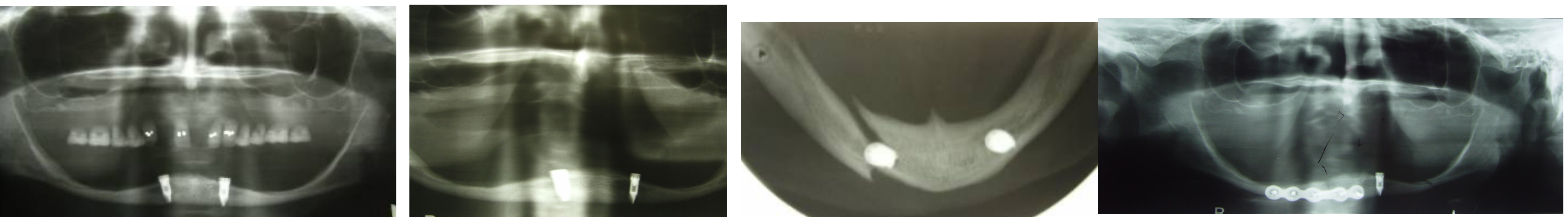
Reconstruction of the mandible with dental implants is a well-established way to significantly improve the quality of life, esthetics, and function of the edentulous patient.

However, the severely atrophic mandible presents several challenges regarding lack of bone quality and quantity, or concerns regarding risk of mandible fracture after implants and loading. Patients can develop pathologic fractures and frequently have ill-fitting or non-fitting dentures. Patients may go on to require additional surgeries to correct fractures. Even after implants some providers limit these patients to only removable prosthesis due to fear of fixed loading.

Several methods for reconstruction of the severely atrophic mandible exist including the “tent-pole” technique and bone scaffolding. Here we aim to demonstrate a predictable combined approach to facilitate bone and implant reconstruction with simultaneous custom reconstruction plate to prevent future additional fractures and provide solid foundation for fixed prosthesis.



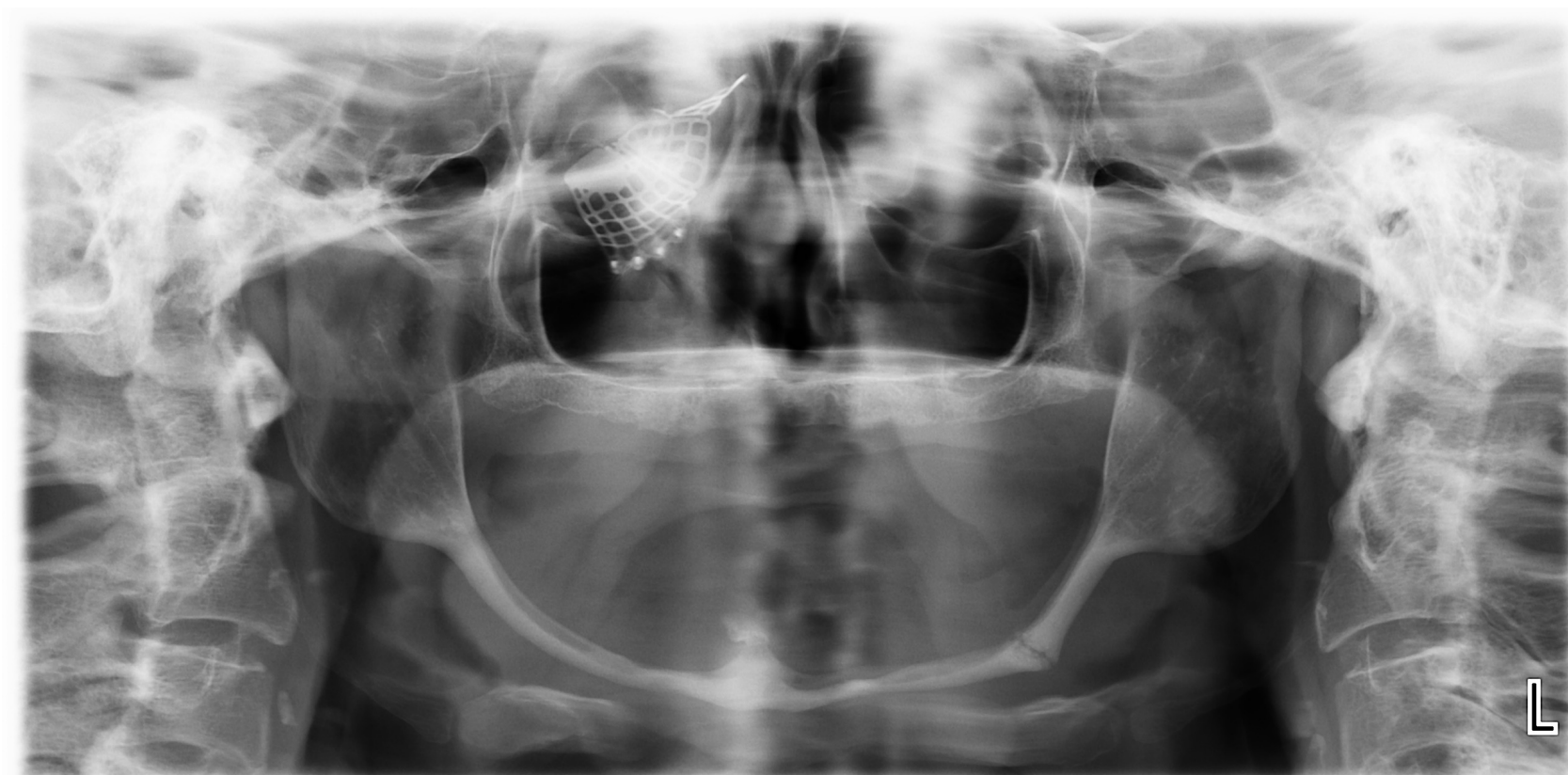
Another patient: Example of “tent-pole” technique



Another patient: Example of atrophic mandible fracture after implants

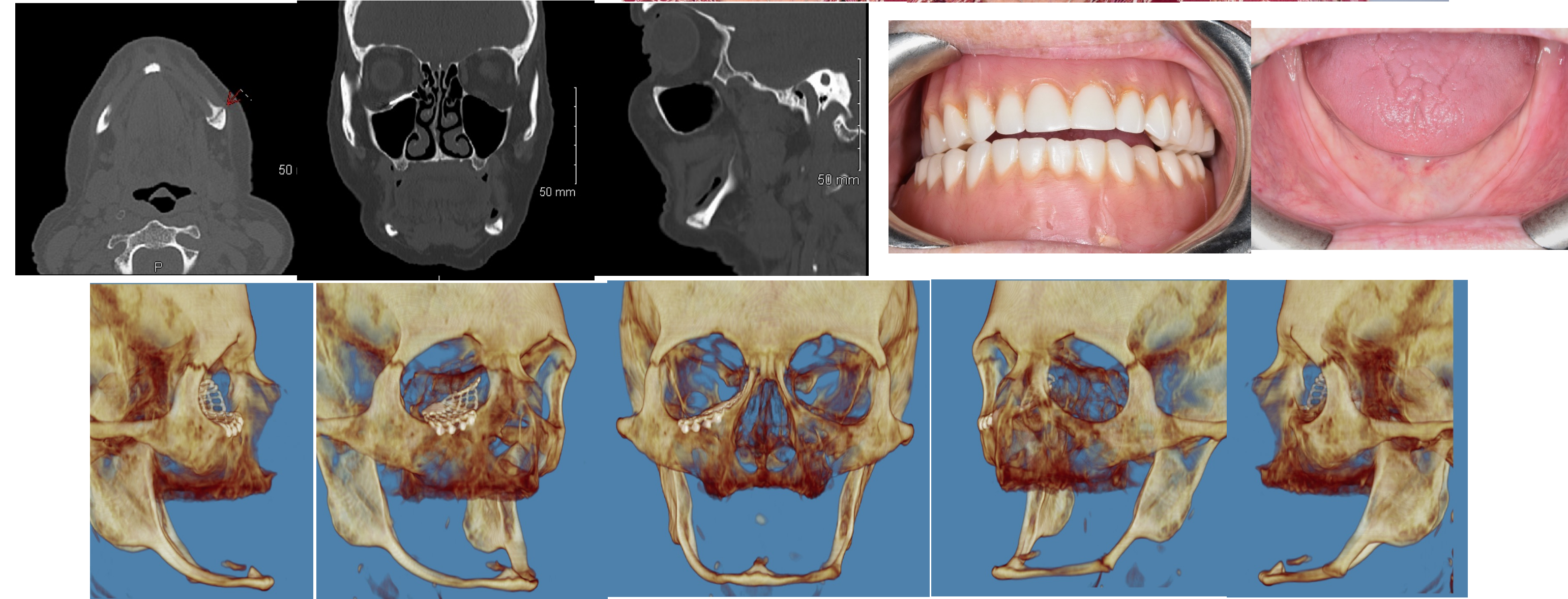
Case

Case 1. Seventy-three-year-old female patient, presenting with inability to tolerate dentures due to pain and mobility, difficulty speaking, eating, and swallowing. Past medical history of controlled hypertension, osteoarthritis, and anxiety. Found to have severely atrophic mandible and mal-union of left mandibular body fracture.



Initial Evaluation

Patient at presentation with noted ill-fitting denture, thick flanges, mobility with function. CT scan showing left mal-union body fracture and severely deficient vertical and horizontal bone.



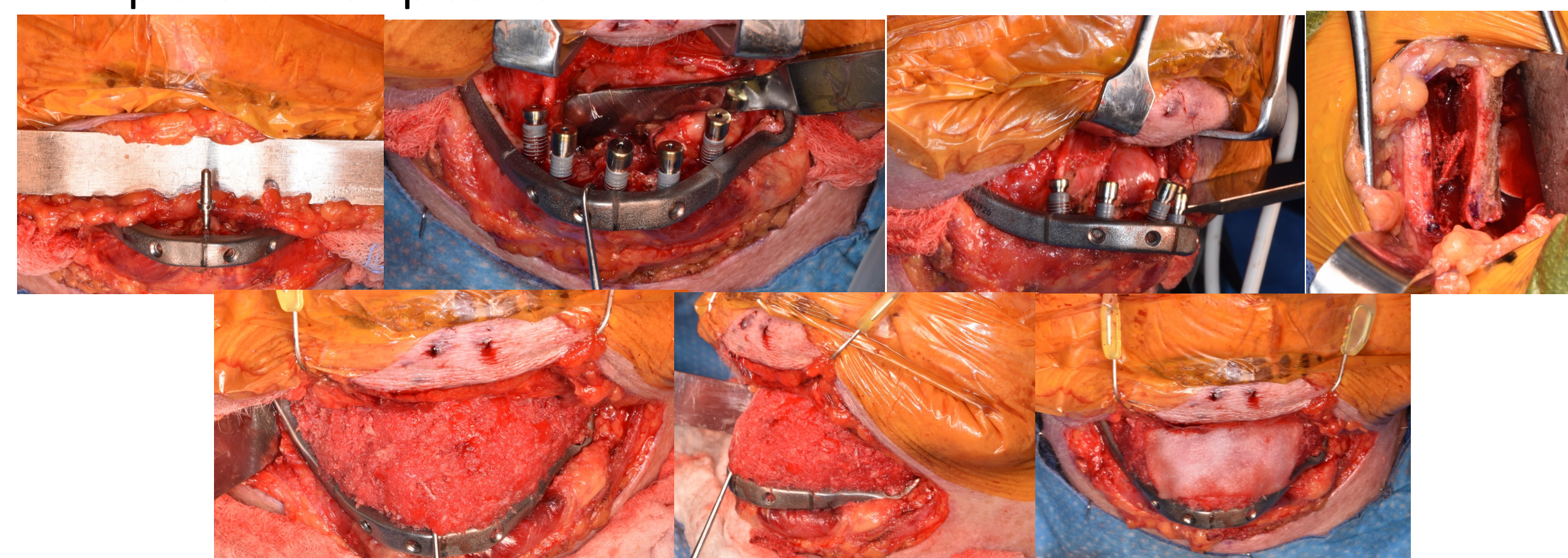
Planning

Virtual surgical planning with custom reconstruction plate.



Surgery

Extra-oral approach to mandible with placement of custom reconstruction plate. Implant placement with simultaneous bone graft: anterior iliac crest bone graft (AICBG) + demineralized allograft + BMP + platelet rich plasma.



Immediate Post-op CT



Final Prosthesis and Rehabilitation



Discussion

There is good evidence regarding fixed implant and bone grafting options using the “tent-pole” approach. A common apprehension is in risk of mandible fracture in the lateral posterior aspects of the body with implants and load. The atrophic mandible can be treated with a variety of options, but simultaneous grafting with reconstruction plate may help prevent additional fractures and provide better stability long-term regarding consideration of implant supported prosthesis.

Conclusion

This case demonstrates that the severely atrophic mandible can be successfully and simultaneously treated for fracture management or prevention, and implant reconstruction and rehabilitation with a fixed prosthesis with good patient tolerance and satisfaction.

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