



RISK-ADAPTED IMPLANT-SUPPORTED REMOVABLE PARTIAL DENTURE IN A PATIENT WITH COMPROMISED PERI-IMPLANT TISSUES AND NEUROFIBROMA HISTORY

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INTRODUCTION

Implant-supported prostheses are widely regarded as the standard of care for mandibular rehabilitation; however, certain clinical situations pose significant challenges that can compromise long-term outcomes. Patients presenting with deficient peri-implant tissues, absence of supporting bone, and concurrent pathological conditions often require treatment strategies beyond conventional fixed implant-supported prostheses. In such cases, a removable implant-supported option offers a conservative and adaptable approach, facilitating maintenance of peri-implant health while addressing both functional and biological concerns. In the present case, mandibular rehabilitation was further complicated by a history of traumatic injury, severe ridge deficiencies, and a concurrent neurofibroma. Treatment planning required careful integration of surgical history, implant prognosis, and prosthetic considerations to achieve long-term stability, predictability, and patient comfort.

AIM

The aim of this case is to describe the prosthetic management of mandibular rehabilitation in a patient with compromised peri-implant soft and hard tissues and a history of neurofibroma-associated radiolucency, through the use of a risk-adapted implant-supported removable partial denture

CASE HISTORY

The patient, who presented to RSDM following trauma from a car accident in 2012, was diagnosed with a neurofibroma at site #30 in 2016. In 2021, severe buccolingual deficiency at sites #23–26 was managed with anterior iliac crest bone graft (AICBG) and distraction osteogenesis. In early 2024, implants were placed at sites #19, #23, #26, #28, and #30. The original restorative plan involved a fixed implant-supported prosthesis. Three months after second-stage uncover surgery, absence of keratinized mucosa around implants #23 and #26 was managed with a free gingival graft.

CASE REPORT

From 2016 to 2025, the neurofibroma lesion at site #30 remained stable with no red flag features under OMFS surveillance. In 2025, CBCT evaluation revealed minimal buccal bone support around mandibular implants. After multidisciplinary consultation and clinical examination, the anterior mandibular implants were deemed stable with adequate keratinized tissue and minimal inflammation. Given the risk profile, the treatment plan was revised to an ISRPD incorporating a milled bar, locator abutments, and a cobalt–chromium framework with semi-precision attachments, prioritizing long-term adaptability, hygiene, and prosthetic stability.

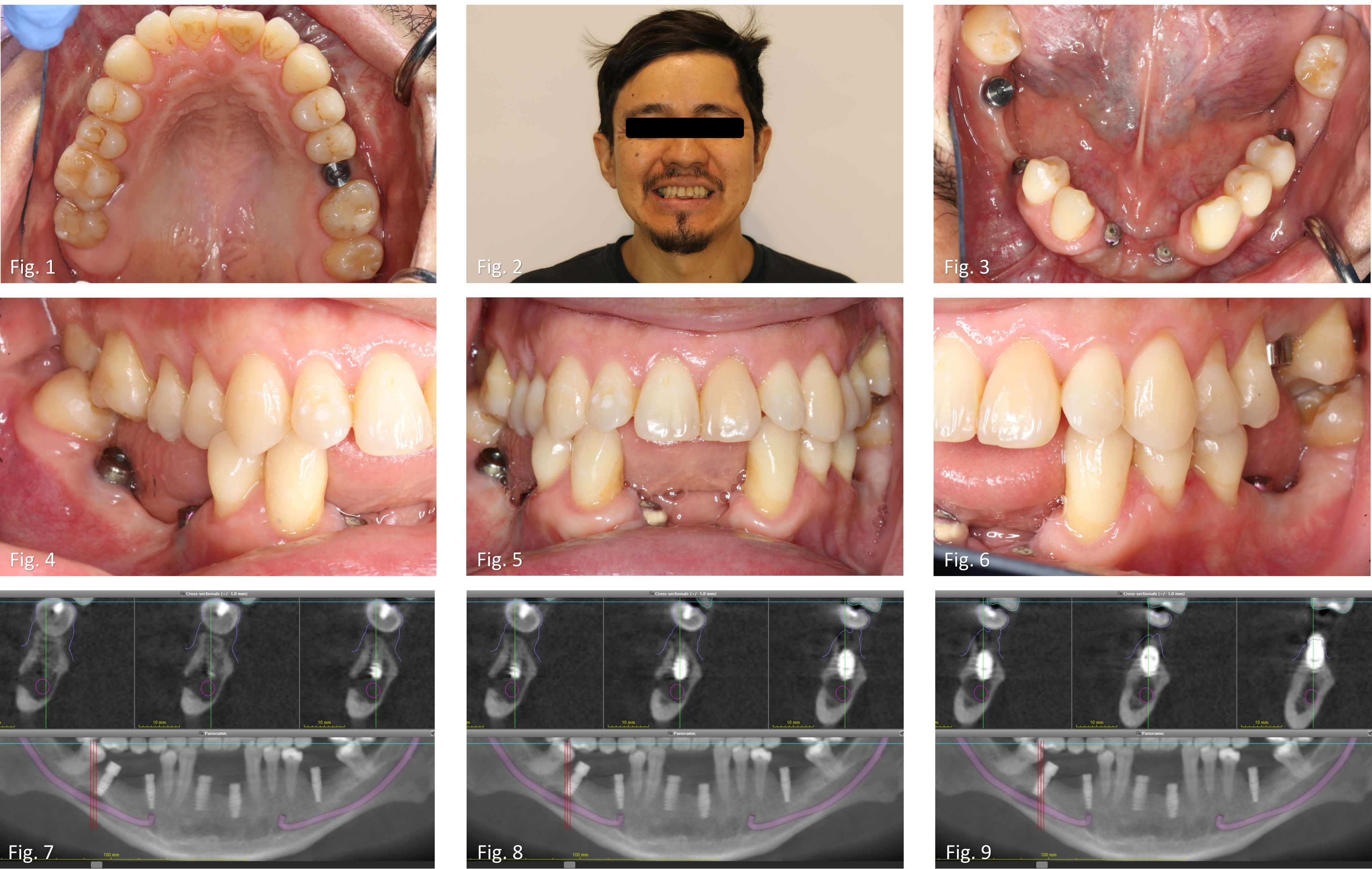
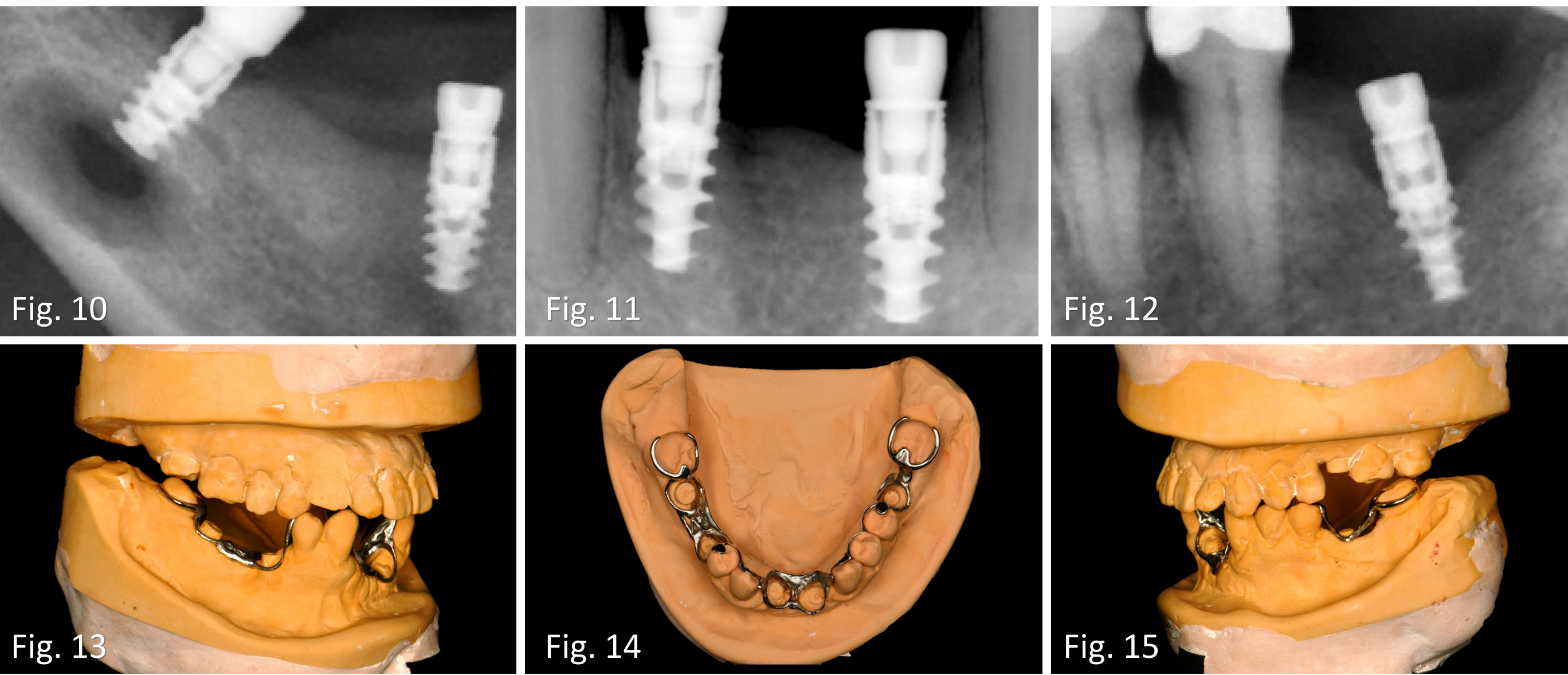


Fig. 1 Maxillary Occlusal View, Fig 2. Patient Frontal View, Fig 3. Mandibular Occlusal View, Fig 4. Right Lateral View, Fig 5. Intra Oral Frontal View, Fig 6. Left Lateral View, Fig 7. Distal Boarder of Neurofibroma on site #30, Fig 8. Middle Boarder of Neurofibroma on site #30, Fig 9. Mesial Boarder of Neurofibroma on site #30, Fig 10. Periapical Radiograph of Neurofibroma on site #30, Fig 11. Periapical Radiograph of Implant on site #23 & #26, Fig 12. Periapical Radiograph of Implant on site #19, Fig 13-15 Master Cast with Cast RPD Metal framework

TREATMENT IN-PROGRESS

Fabrication and delivery of the ISRPD were initiated, with the prosthesis tailored to maximize functional stability while accounting for the compromised peri-implant environment. The design allowed improved patient access for hygiene, reduced biomechanical risk compared to a fixed option, and provided a flexible foundation for potential modifications should implant prognosis deteriorate further. The patient is currently under continued follow-up to monitor implant stability, peri-implant tissue health, and progression of the mandibular lesion (neurofibroma in site #30).



CONCLUSION

In mandibular rehabilitation cases complicated by compromised peri-implant prognosis, severe ridge deficiencies, and concurrent pathology such as neurofibroma, a fixed implant-supported prosthesis may pose excessive biological and functional risks. An implant-supported removable partial denture offers a conservative, hygienic, and risk-adapted solution that ensures functional rehabilitation while maintaining adaptability to future changes in implant or tissue status



REFERENCES



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