

Introduction

The ameloblastoma is a benign but locally aggressive odontogenic neoplasm with high recurrence. Predictable therapy requires a wide resective surgery which leads to a large tissue defect. This study highlights specific treatment and reconstruction of the defect within a large collaborative and multidisciplinary team.

Material and Methods

An 11-year-old female was referred to the Oral and Maxillofacial Department with the chief complaint of a mass on the posterior right mandible. Medical history of morbid obesity and precocious puberty. A biopsy of the lesion was taken; histologic examination revealed follicular ameloblastoma. A decision was made for local mandibular resection. CBCT was utilized for virtual surgical planning and fabrication of a resection guide. Five teeth were extracted prior to surgery to keep the resection completely extra-orally. The lesion with safety margins was resected and the defect was reconstructed with a prefabricated customized titanium plate and cortical bone transplant from the hip. Post healing a mandibular interim partial denture was fabricated. A radiographic guide was fabricated to aid implant placement planning. Four dental implants were placed and submerged.

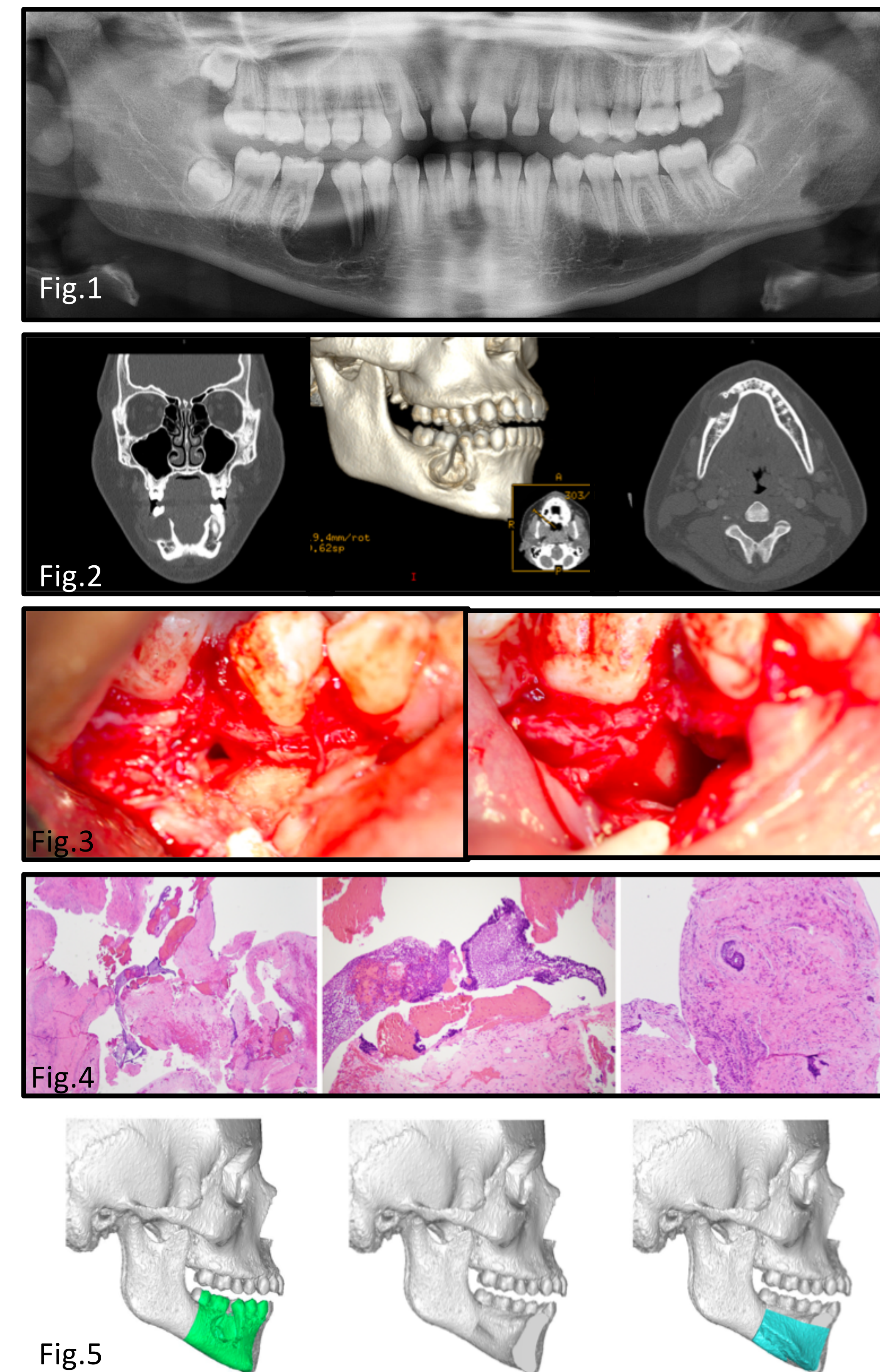


Fig 1 & 2 Panoramic X-ray and CBCT demonstrating large radiolucent mass with root displacement associated with right posterior mandible. Fig. 3 Incisional biopsy demonstrating involvement of adjacent teeth roots. Fig.4 H&E stained specimens demonstrating features consistent with conventional follicular ameloblastoma. Fig.5 Virtual surgical planning for determination of margins of resection and fabricating a resection guide.

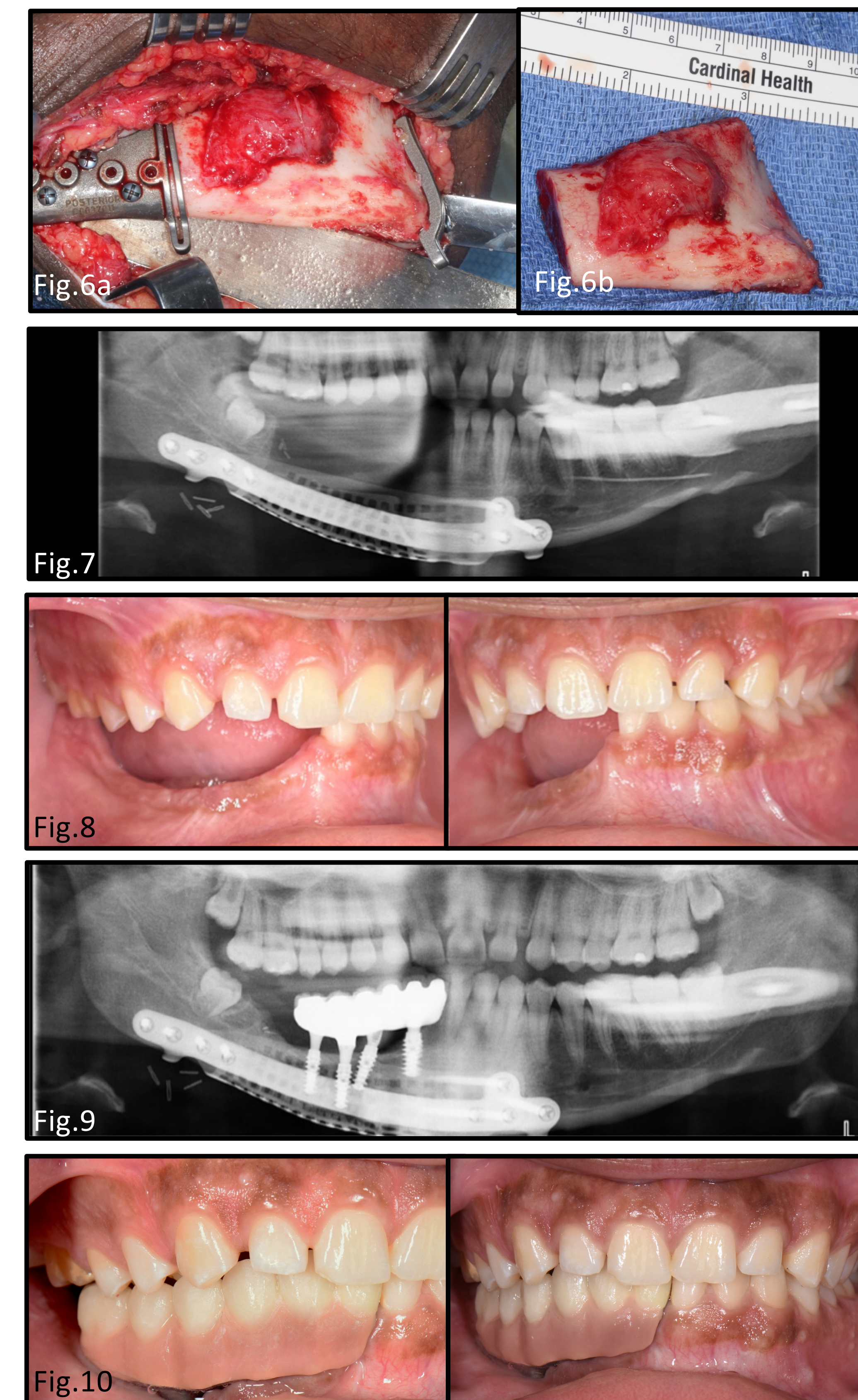


Fig.6a Resection guide seated in place. Fig.6b resected tumor specimen. Fig.7 Panoramic imaging reveals presence of cortical graft with associated hardware. Fig.8 Intraoral clinical photographs demonstrating healed area with soft tissue continuity within oral cavity. Fig.9 Panoramic image demonstrating four endosseous implants with multiunit abutments retaining a fixed partial prosthesis. Fig.10 Final porcelain fused to metal fixed prosthesis in the oral cavity.

Second-stage uncovering surgery was performed and three straight abutments and one multiunit abutment were placed. After soft tissue healing, an impression was obtained, and models were fabricated. Metal alloy substructure for implant retained fixed partial denture fabricated and tried in. The occlusion and proximal contacts were examined with a bisque-baked prosthesis. Intraoral photos were presented to the lab for better color match. The screw-retained final prosthesis was delivered and torqued to manufacturer specifications and access holes were sealed with Teflon and resin composite. Patient in frequent recall for examining the recurrence of the lesion and for routine maintenance of the functionality of the prosthesis.

Conclusion

Mandibular resection and reconstruction with prefabricated customized titanium plate, cortical bone transplant, and implant retained fixed partial denture is a functional and predictable approach for the treatment of ameloblastoma lesions

Reference:

Sham, Eric, et al. "Mandibular ameloblastoma: clinical experience and literature review." *ANZ journal of surgery* 79.10 (2009): 739-744.