



CUSTOM SUBPERIOSTEAL IMPLANT FOR MAXILLARY REHABILITATION IN SEVERE ATROPHY: A DIGITAL AND INTERDISCIPLINARY APPROACH

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INTRODUCTION

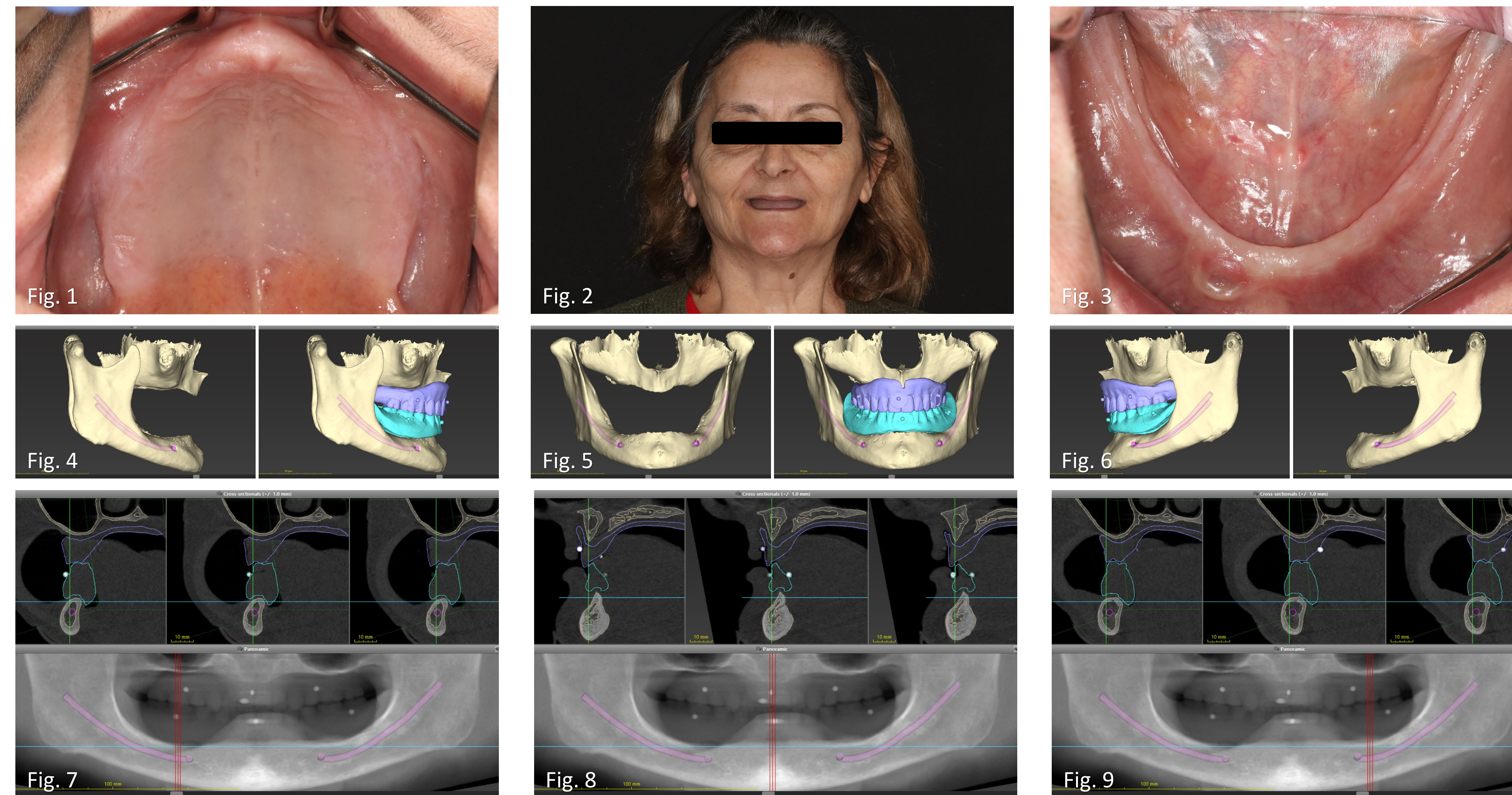
To demonstrate how digital workflows and interdisciplinary collaboration can enable graftless full-arch rehabilitation in patients with severe maxillary atrophy using a custom subperiosteal implant for fixed dental prosthesis.

CASE REPORT

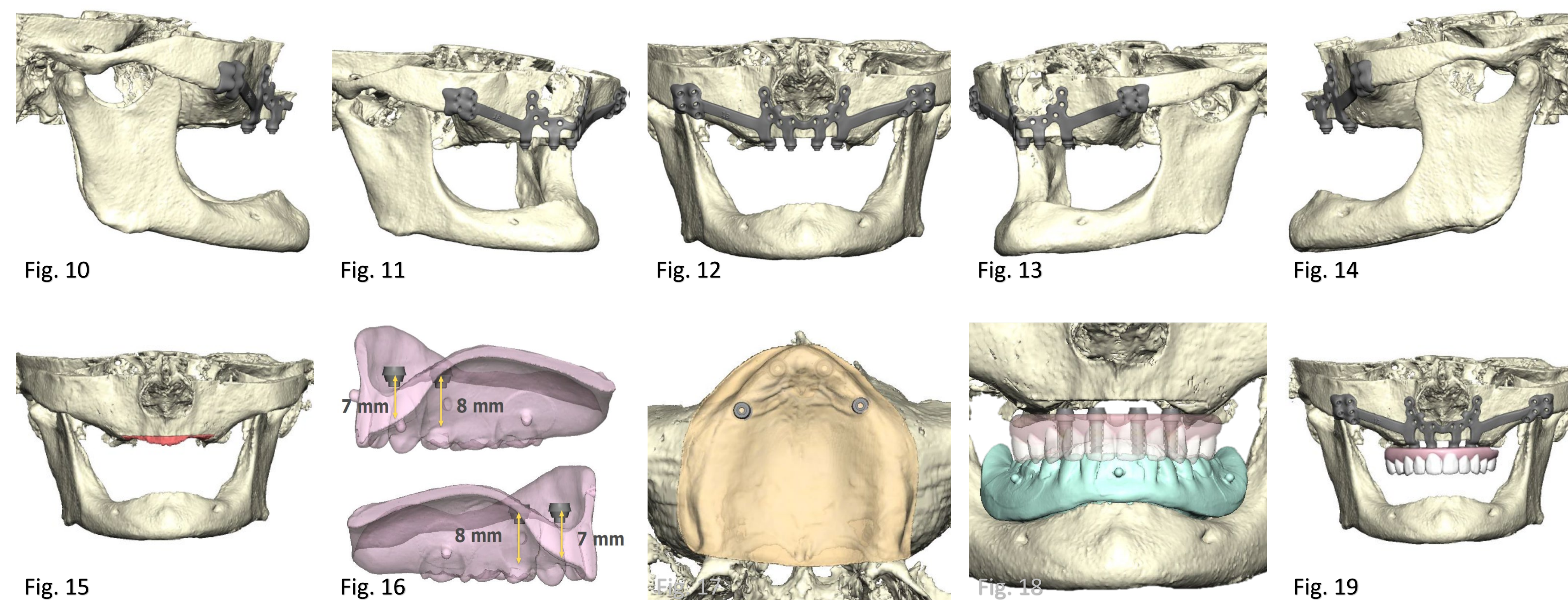
A 64-year-old edentulous female presented with a 13-year history of denture intolerance, reporting mucosal burning and blistering later attributed to an allergic reaction to denture materials. Her medical history included hypertension, thyroidectomy for thyroid cancer, and chronic xerostomia. Clinical and radiographic evaluation revealed a severely resorbed maxilla (Cawood and Howell Class V–VI) and a moderately resorbed mandible (Class IV), rendering her unsuitable for conventional maxillary implants. Complete dentures were fabricated to assess esthetics, phonetics, and vertical dimension. CBCT and intraoral scans were used to digitally design a custom maxillary subperiosteal implant (IPS, KLS Martin), while six endosseous implants were planned for the mandible using SIMPLANT for fully guided surgery. Immediate loading was planned for both arches.

Surgery was performed in collaboration with the OMFS team under general anesthesia. The IPS titanium framework was fixated in the maxilla, and six mandibular implants were placed with good primary stability. A screw-retained prototype prosthesis was delivered postoperatively for the maxilla only. Mild mucosal inflammation resolved with hygiene measures. Clinical and radiographs evaluation confirmed implant stability with no signs of infection for 1 month follow-up. Final prosthetic rehabilitation is ongoing, with continued follow-up scheduled.

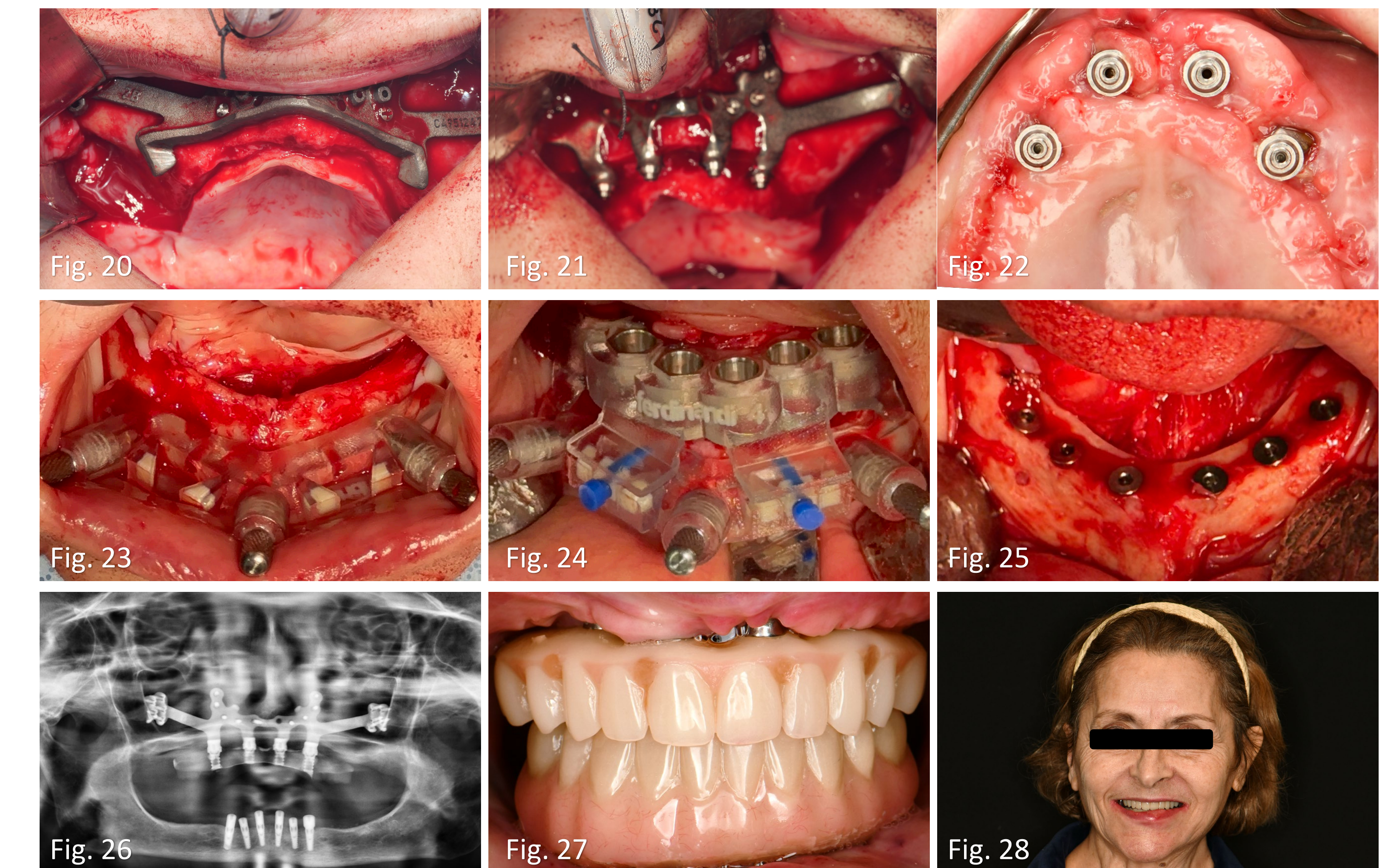
INTRAORAL AND RADIOGRAPHIC EVALUATION



MAXILLARY CUSTOM SUBPERIOSTEAL IMPLANT PLANNING



MAXILLARY AND MANDIBULAR SURGERY



CONCLUSION

Digitally guided subperiosteal implants offer a stable, graftless solution in cases of extreme maxillary atrophy, expanding treatment possibilities for edentulous patients previously considered ineligible for implant therapy.

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