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INTRODUCTION

The surgical strategy in immediate implant placement is highly dependent on the preoperative clinical and radiological analyses. Surgical planning always involves a radiographic assessment of the site, preferably by 3D imaging with cone beam computed-tomography (CBCT) scans.¹This technology allows the clinician to consider potential difficulties during the extraction, to assess bone availability, and to evaluate the integrity, thickness, and nature of the facial bone plate, important for the prognosis of immediate implants.² A meticulous evaluation is essential to appreciate the soft tissue phenotype, gingival margin position, presence of papillae and possible grafting treatments.^{3,4}

CASE REPORT

A 57-year-old male patient was evaluated, with no relevant pathological history, who presented a fracture in the cervical third of teeth 1.2 and 2.2 with a hopeless prognosis according to the prosthetic and periodontal evaluation. Using CBCT tomography, digital planning was performed for implant placement by means of guided surgery, as well as the design of the restrictive surgical guide. Initially, teeth 1.2 and 2.2 were extracted, the granulation tissue was carefully removed with a curette^{5, 6} and dental implants of 3 mm in diameter and 10 mm in length were placed at 2.0 mm subcrestal using the guided protocol with flapless surgery⁷, taking as a reference the cemento-enamel junction of the adjacent teeth with an insertion torque of 20 Ncm ^{8,9}. Subsequently, bovine xenograft granules 0.25-1 mm were used in the space between the implants and the bone walls¹⁰, and finally, customized temporary attachments were placed on the implants to conform the gingival architecture.



Figure 1a- Initial frontal intraoral photograph



Figure 1b- Initial occlusal intraoral photograph



Figure 1c- Dento-supported restrictive surgical guide test



Figure 2- initial periapical radiography

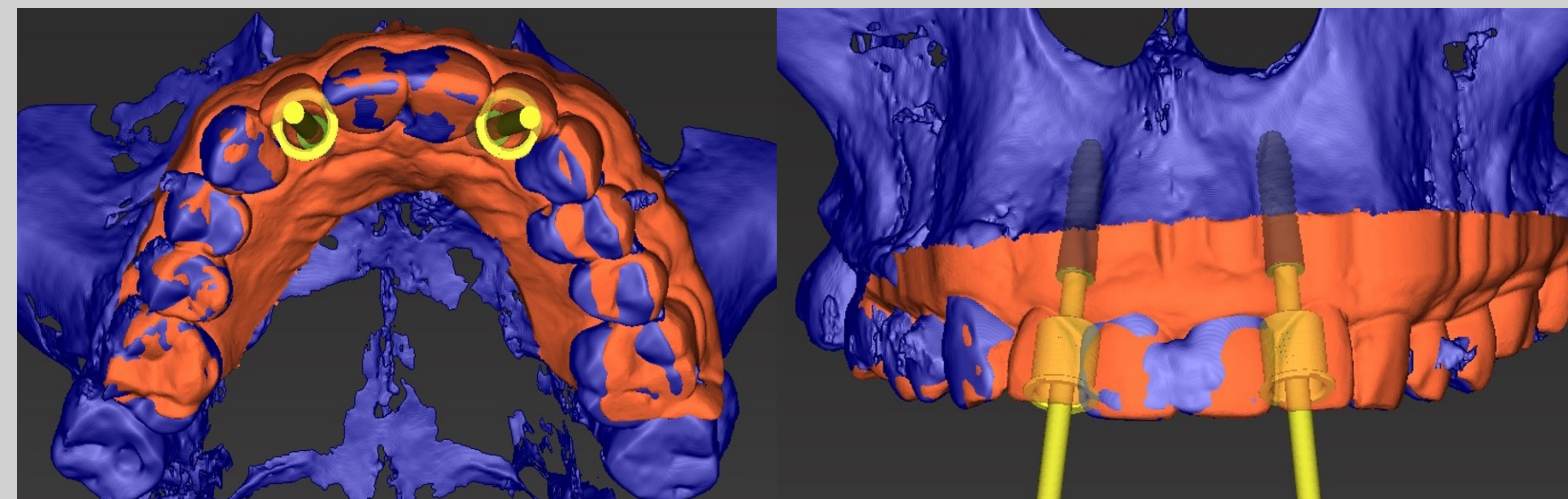


Figure 3- Digital prosthetic planning in software for teeth 1.1 and 2.2

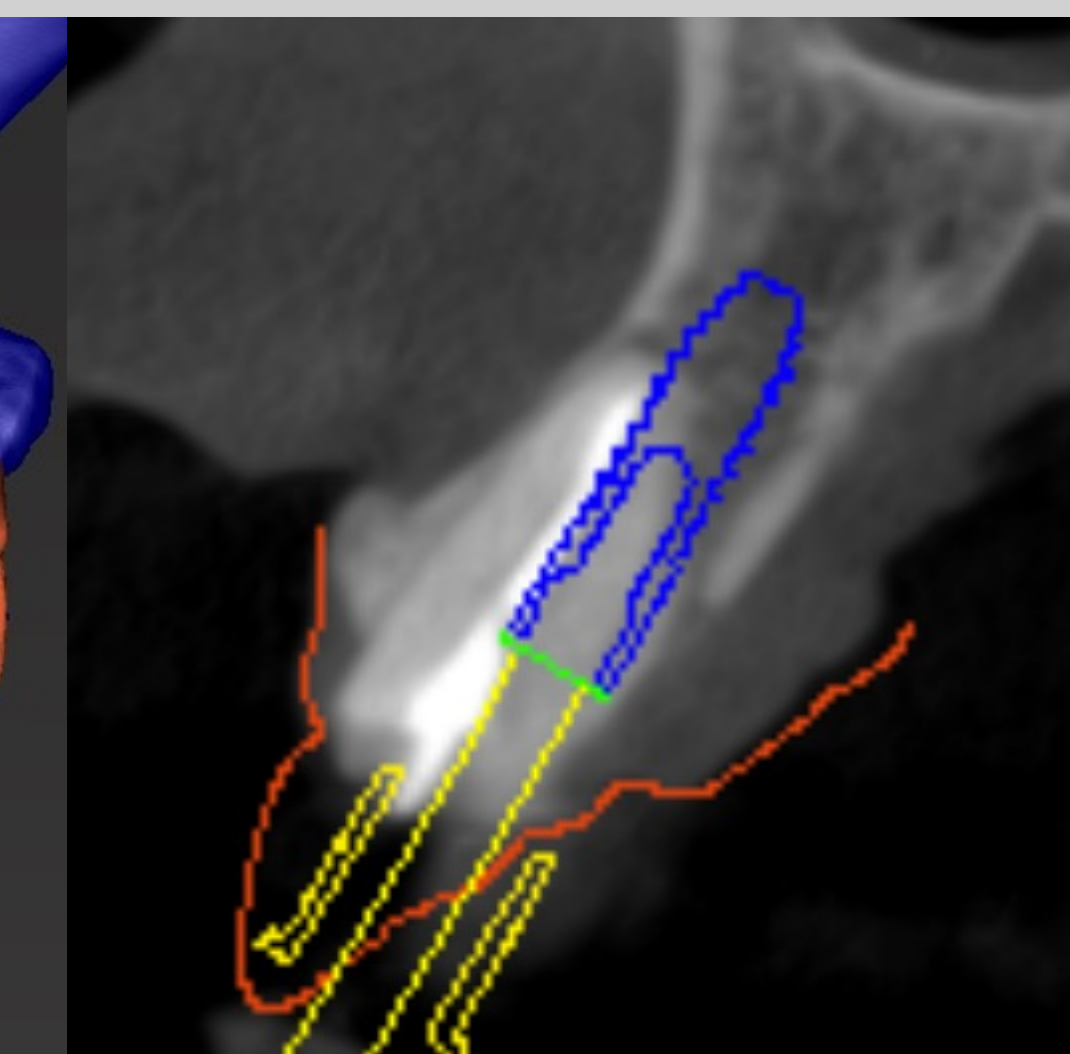


Figure 4a- CBCT sagittal section in zone 1.2

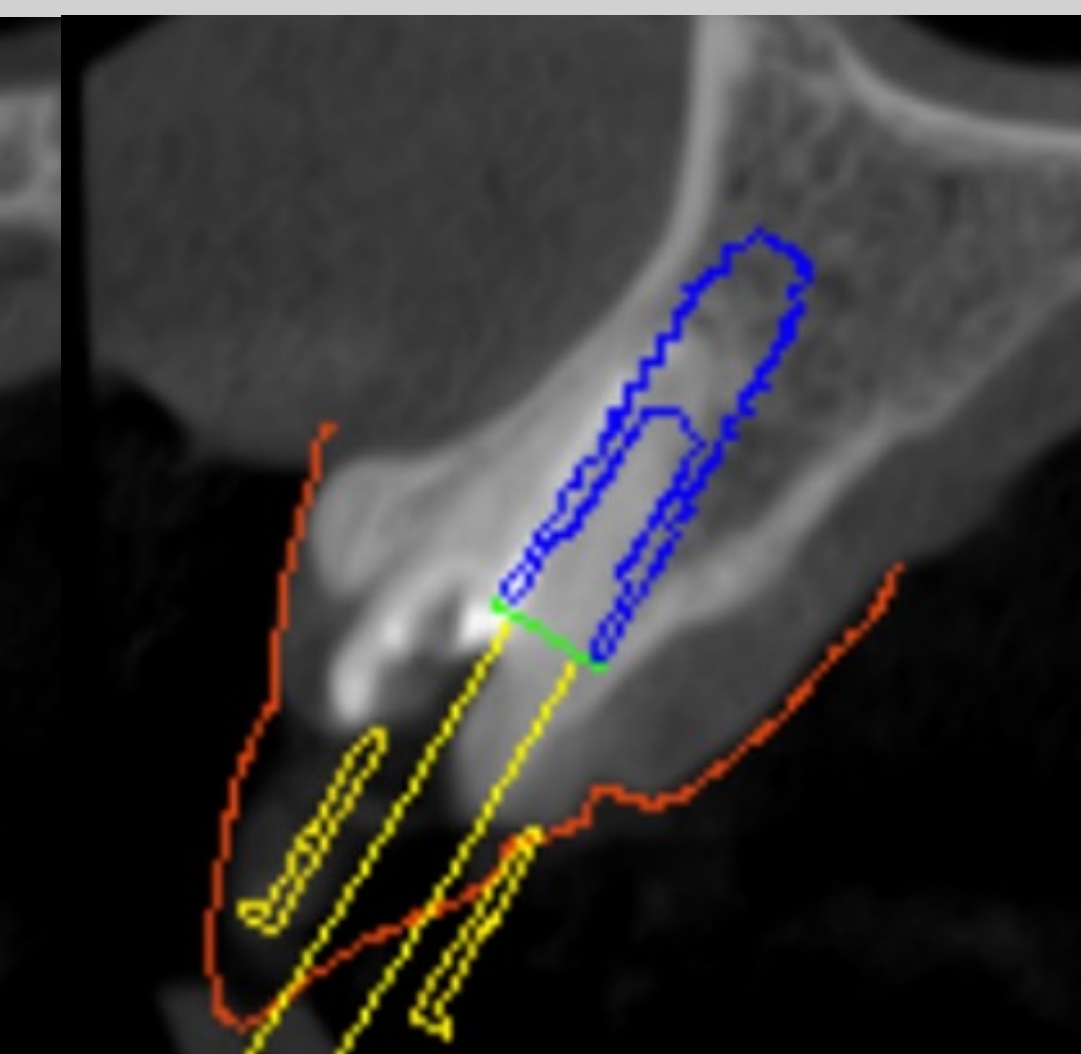


Figure 4b- CBCT sagittal section in zone 2.2

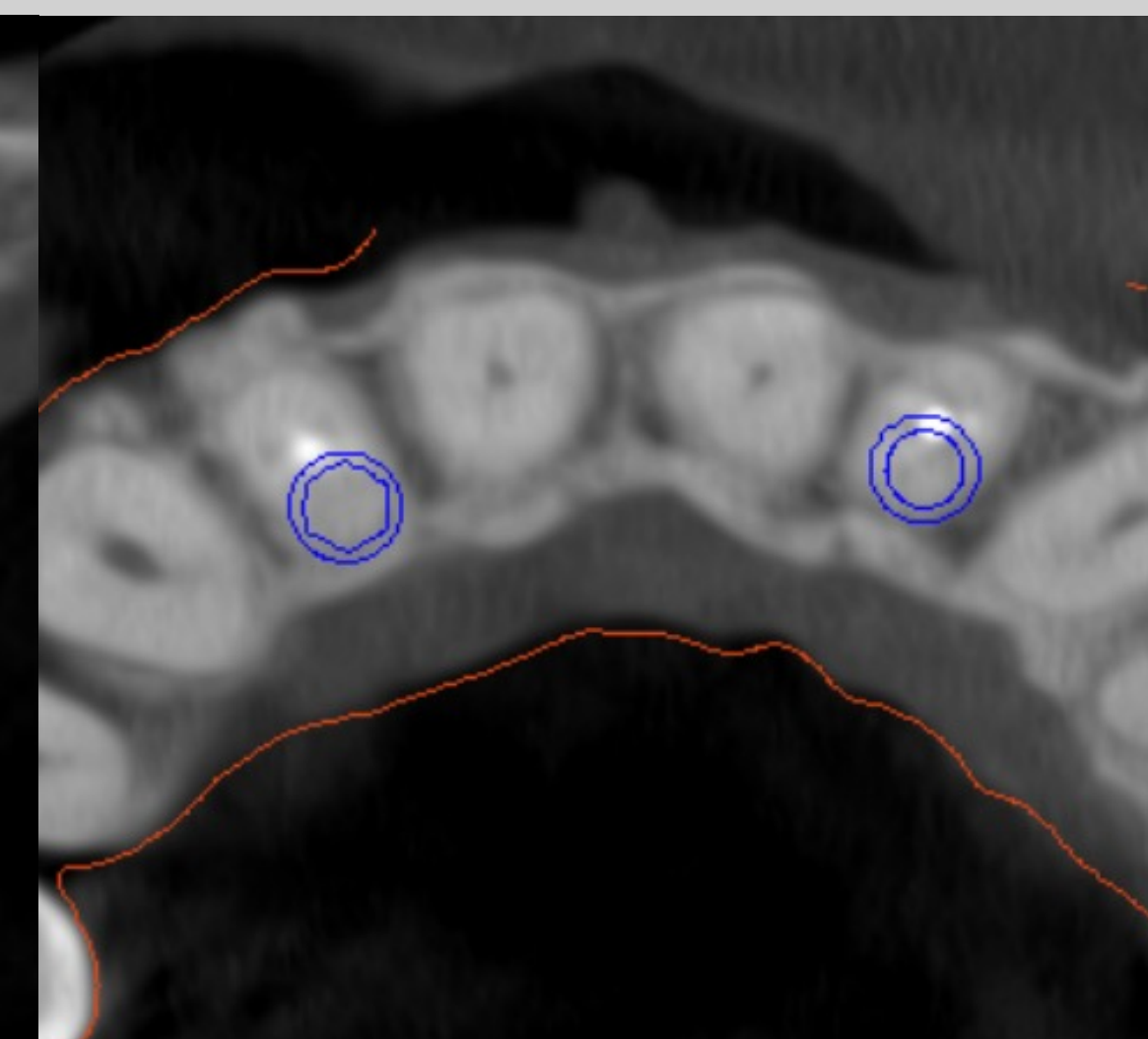


Figure 4c- CBCT axial section in zone 1.2 and 2.2.



Figure 5a- Implant placement in zone 1.2 and 2.2



Figure 5b- xenograft filling



Figure 5c- Customized healing attachments



Figure 6- Immediate post-surgical periapical radiography

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RESULTS

The placement of the two implants was successfully. In the clinical evaluation performed two weeks after the implant placement surgical procedure, absence of inflammation of the peri-implant tissues around the provisional attachments was observed. Eight weeks after implant placement, clinical health characteristics were maintained, and radiographic records showed bone filling and absence of radiolucency. A provisional was placed in the central incisors with pontics in the lateral incisors, conventional loading of the implants is planned. The results were in accordance with the digital and prosthetic planning.

CONCLUSIONS

The implant-guided surgical procedure is a comprehensive and advanced method that has the advantage of reduced morbidity, faster healing, and greater postoperative comfort by avoiding the need for a mucoperiosteal flap elevation. The maintenance of bone integrity when performing dental extractions and digital planning lead to more predictable results and improvements in both esthetic and functional aspects.

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Figura 7a- Frontal intraoral photograph eight weeks post-surgery



Figure 7b- Frontal intraoral photograph eight weeks post-surgery (without provisional)



Figure 7c- Intraoral occlusal photograph eight weeks post-surgery



Figure 7d- Intraoral occlusal photograph eight weeks post-surgery (without provisional)



Figure 8- Periapical radiography eight weeks post-surgical