

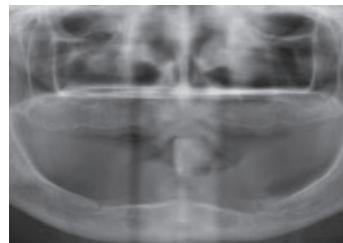
## Moderate bone resorption

All-on-4 concept with NobelGuide in maxilla and flap approach in mandible providing a complete rehabilitation with a minimally invasive solution

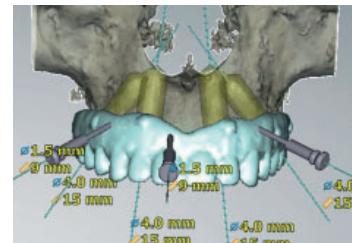
**Patient:** Total edentulous female patient in her early 50's rehabilitated with upper and lower removable dentures over 15 years ago. **Chief complaint:** Poor retention and stability of the removable dentures with consequent discomfort, insecurity during phonetic and masticatory functions and unsatisfactory esthetics. Her main goal was to obtain a fixed implant-supported rehabilitation. **Overall health:** Healthy patient. **Oral examination:** Moderate bone resorption in the maxilla (at least 5 mm width and 10 mm bone height between the canines in maxilla). Severe bone resorption in the mandible (at least 5 mm width and 8 mm bone height between the mental foramina in mandible). Low smile line. **Decision:** Fixed implant-supported bimaxillary rehabilitation with the All-on-4 concept, following the NobelGuide protocol (flapless) in the maxilla and the conventional flap technique with the All-on-4 surgical guide in the mandible. Four NobelSpeedy Groovy implants were placed in each jaw, followed by immediate placement of provisional fixed all-acrylic bridges providing the patient with Immediate Function solution. In maxilla, a NobelProcera Implant Bridge Titanium framework with individually designed and cemented zirconia crowns with pink acrylic was used. In mandible, a NobelProcera Implant Bridge Titanium framework wrapped in pink acrylic and denture teeth was used. **Time for total treatment:** 5 months



Intra-oral view of the removable dentures. Since they did not meet the functional and esthetic requirements, a new upper removable denture was fabricated. The intra-oral features were evaluated, with special consideration to the low smile line and mouth opening capability of over 50 mm prior to the treatment.



Pre-op panoramic radiograph (OPG) together with the 3D radiographic analysis shows the moderate bone resorption in the maxilla and severe bone resorption in the mandible (note the lack of available bone for implant placement in the posterior maxilla and mandible).



All-on-4 treatment planning with the NobelClinician Software for a detailed diagnostic process in the maxilla. A prosthetic-driven planning combined with the patient's anatomy and prosthetic needs was required to ensure optimal implant support for an optimal restorative solution.



In the maxilla, the radiographic guide (removable prosthesis) was stabilized in the patient's mouth with the support of the radiographic index and the double scan technique was done previously. Now using the NobelGuide flapless approach, the surgical template was carefully installed to optimally position the four implants, resulting in a minimally invasive treatment.



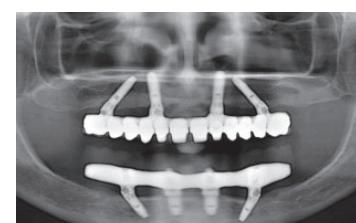
Post-op occlusal view immediately after placement of the four implants and Multi-unit Abutments. The straight Multi-unit Abutments were placed in the axial anterior implants. The 30° Multi-unit Abutments Non-Engaging were placed using a custom jig for the correct positioning of the angulated abutments.



After traditional treatment planning in the mandible, a conventional flap procedure was done. The All-on-4 Guide was positioned to facilitate implant placement. The purpose of this surgical guide is to assist in the correct angulations of the posterior implants between 30° to 45°.



The dentures were converted into fixed all-acrylic bridges and were delivered with Temporary Copings Multi-unit Titanium. The provisional bridges were retrofitted manually onto their corresponding Multi-unit Abutments in the patient's mouth immediately after surgery, providing her with Immediate Function.



Post-op panoramic radiograph (OPG) shows successful All-on-4 treatments with four NobelSpeedy Groovy implants in combination with precision-milled NobelProcera Implant Bridges placed in each jaw. The bridges were milled from a solid monobloc of titanium to secure precision of fit and longevity and designed to the patient's esthetic and functional needs.



Extra-oral view of the patient showing the final rehabilitation with fixed bridges to fulfill the phonetic, masticatory and esthetic needs of the patient. The base of the provisional and final bridges were designed to be convex or flat and polished for minimum plaque retention and easy cleaning.