

**NobelActive® TiUltra™ with
Multi-unit Abutments Xeal™**

**NobelParallel™ TiUltra™ with
On1™ Base Xeal™**

X-Guide® dynamic navigation

**Full-arch immediate loading
in the maxilla and single molar
in the mandible**

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Prof. Alessandro Pozzi

Patient

65-year-old male. Hyperglycemia; coronary angioplasty and stent; clopidogrel (Plavix). Smoker (fewer than 10 cigarettes per day).

Clinical situation

Terminal dentition in the upper jaw. Tooth mobility and periodontal support of less than 30%. Periapical radiolucency of approximately 1 cm of first molar, lower left side. Patient refuses any invasive surgical periodontal bone regeneration procedures.

Surgical solution

Immediate tooth extraction. Four NobelActive TiUltra implants placed with X-Guide dynamic navigation system. Immediate loading of full-arch temporary prosthesis, with Multi-unit Abutment Xeal.

Restorative solution

Immediate loading of screw-retained full-arch temporary prosthesis. Final restoration: screw-retained porcelain fused to NobelProcera Zirconia full-arch implant bridge.

Surgery date

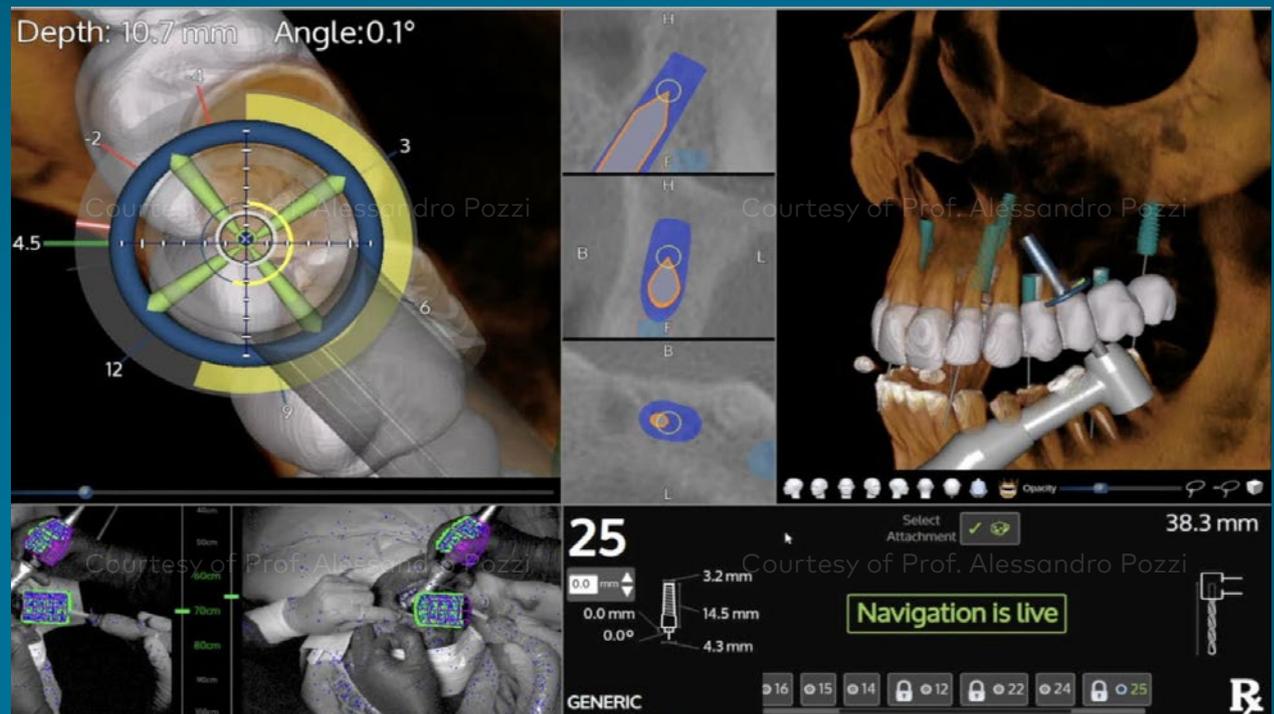
April 2019

Total treatment time

6 months

Tooth position

Upper full-arch and Tooth 36



Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome

Terminal dentition in the upper jaw. Tooth mobility and periodontal support of less than 30%. Periapical radiolucency of approximately 1 cm of first molar, lower left side. Patient refuses any invasive surgical periodontal bone regeneration procedures.



Pre-operative clinical frontal and lateral views in occlusion.

Initial clinical situation

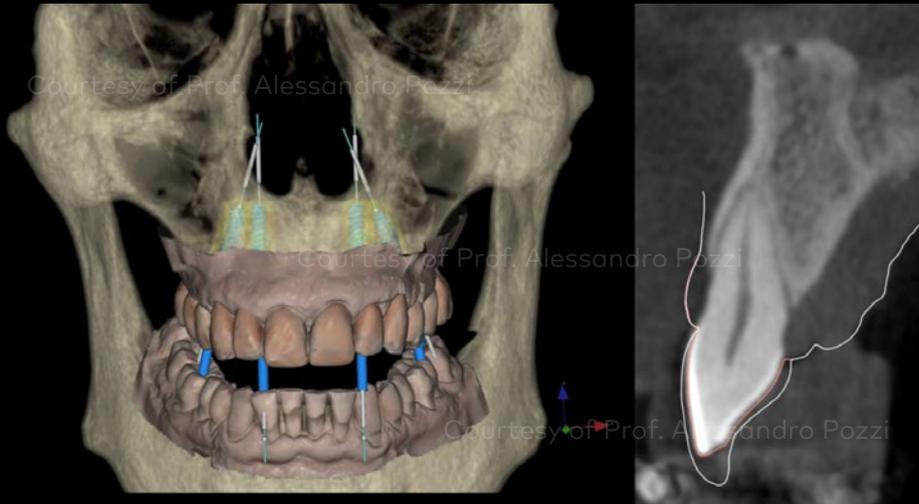
Treatment planning

Surgical procedure

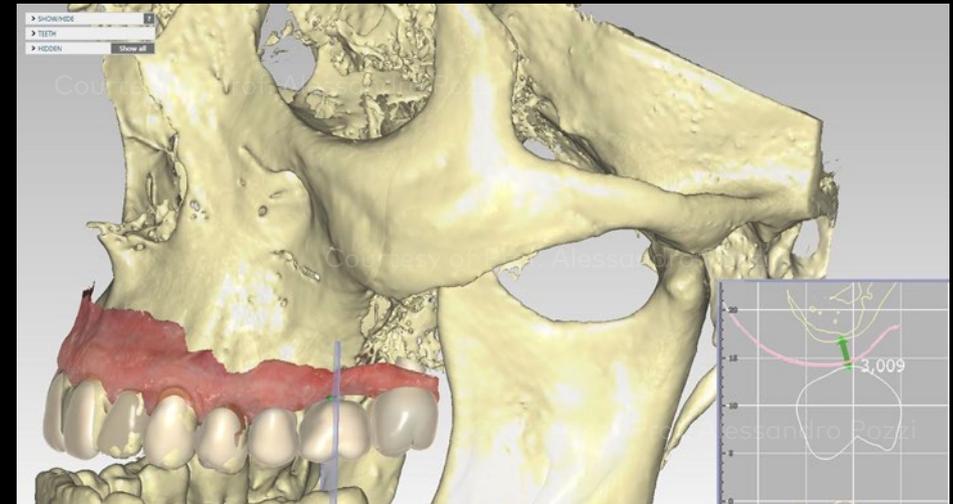
Restorative procedure

Outcome

DTX Studio™ Implant and DTX Studio™ Lab for streamlined 3D planning and execution. A screw-retained full-arch restoration supported by four implants was planned with an FP1-FP3 prosthetic design (direct emergence from the soft tissue with pink interface).



DTX Studio™ Implant 3D implant planning. In the cross section, the reduced periodontal support and the discrepancy between the original tooth contour and virtual wax-up design are visible.



DTX Studio™ Lab 3D prosthetic planning according to the Digitally assisted soft tissue sculpturing (DASS) technique.

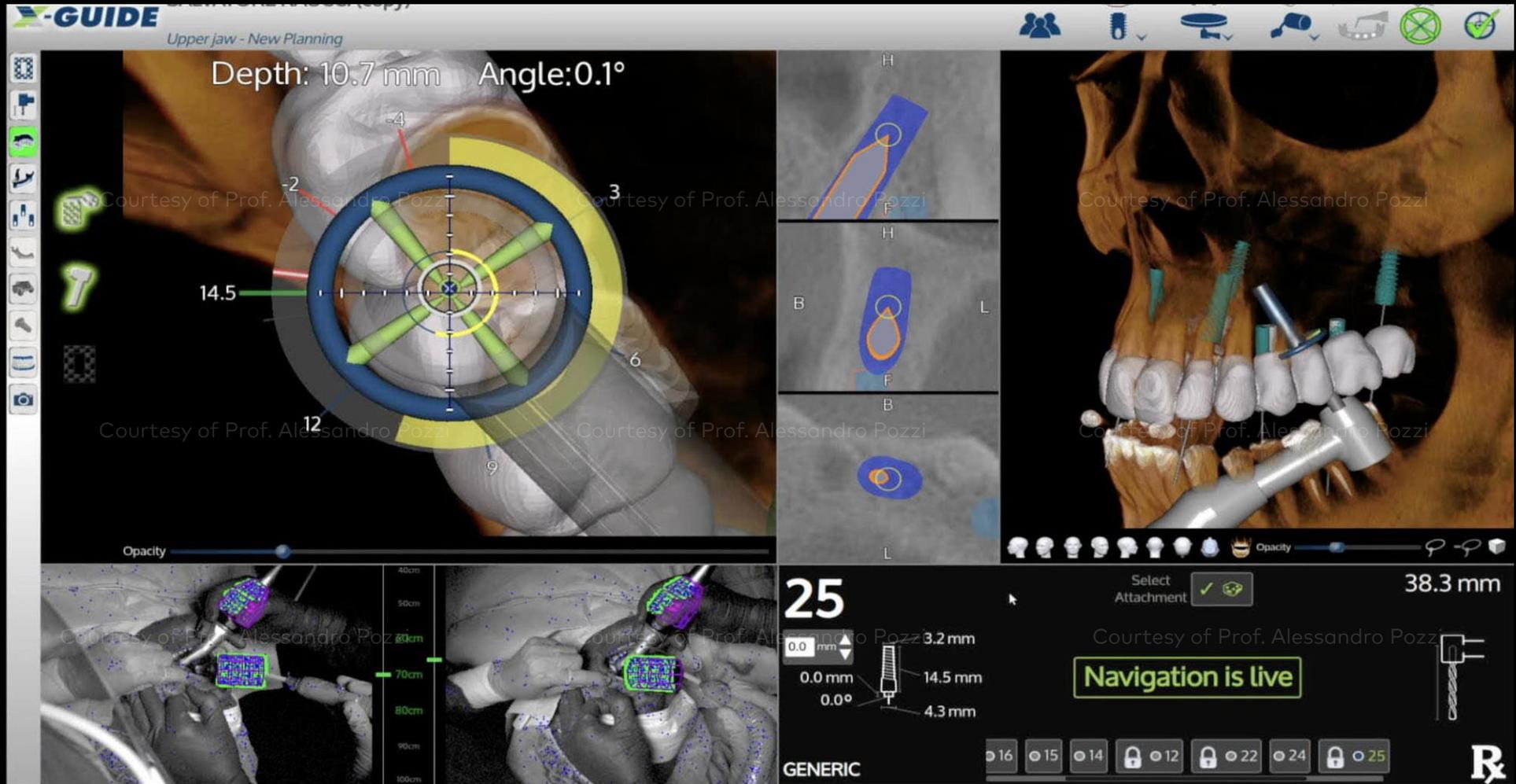
Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome



X-Guide dynamic navigation with 360° control of implant drill angulation and position.

Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome

Minimally invasive tooth extraction, flapless surgical approach, periapical infection removal, careful debridement of the post extraction socket, X-Guide® immediate implant positioning, xenogeneic soft tissue matrix to enhance the gingival architecture healing and thickening.



NobelActive TiUltra RP 4.3 x 15 mm positioned in the post-extraction sockets in straight and angulated positions.

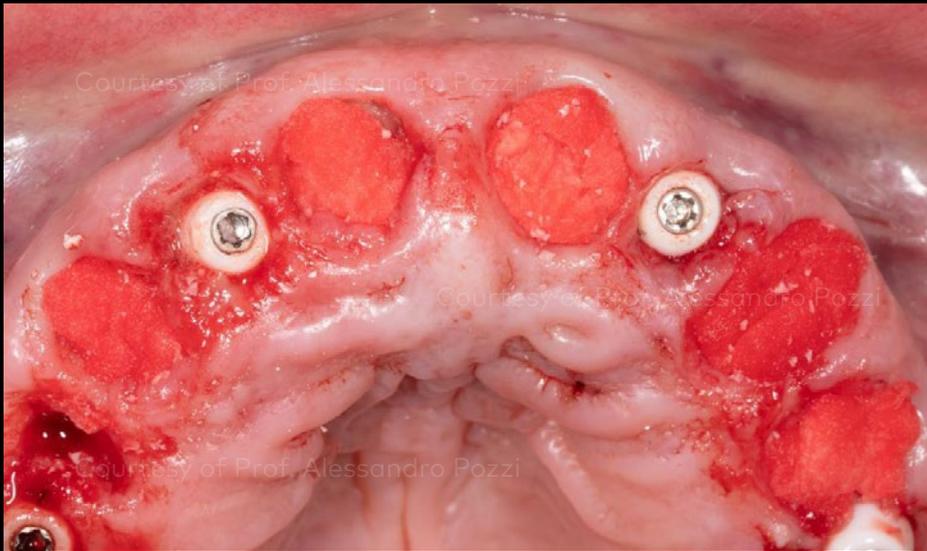
Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome



Intraoperative occlusal view of the bone and soft tissue grafting. The xenogeneic collagen matrix was packed and secured on the buccal side and interproximally.



A screw-retained full-arch temporary prosthesis was placed on the day of surgery.

Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome



Post-operative orthopantomogram.

Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome



Occlusal view: 1 month post-operative after the DASS technique.



Occlusal view: 4 months post implant placement and DASS technique. Excellent soft tissue healing and maturation around the Multi-unit Abutments Xeal.

Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome



Smiling scan technique: DTX 3D rendering of the pre-operative patient smile.



Smiling scan technique: DTX pre-operative 3D smile design.



Post-operative clinical outcome with the full-arch temporary prosthesis.

Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome

Screw-retained zirconia crown bonded on Universal Base on On1 Xeal.



Pre-operative periapical x-ray. Radiolucency-periapical infection of about 1 cm of the 1st molar lower left side.



Intra-operative periapical x-ray. After tooth extraction and removal of the cyst a NobelParallel TiUltra 5.5 mm x 13 mm was positioned in the fresh extraction socket and the defect was regenerated with xenogeneic bone particulate graft.



Periapical x-ray after 3 months. After ISQ assessment, an IOS impression was taken with a dedicated scan body.



Periapical x-ray after 5 months. A screw-retained zirconia crown bonded on a Universal Base on On1 Xeal was delivered.

Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome

Screw-retained zirconia crown bonded on Universal Base secured on On1 Xeal.



Soft tissue healing around the On1 Xeal abutment 1 month after tooth extraction and cyst removal.



3D printed master cast with On1 Xeal analogue secured in the correct position.



Screw-retained zirconia crown to be rebonded on Universal Base on On1 Xeal.



Definitive screw-retained zirconia crown bonded on Universal Base seated on On1 Xeal.



Extraoral chairside bonding sequence of screw-retained zirconia crown on Universal Base seated on On1 Xeal.

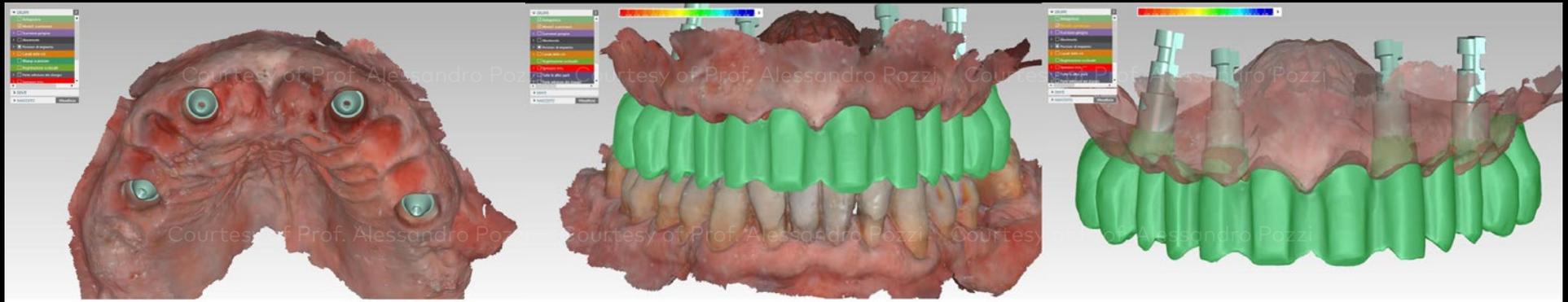
Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome



DTX Studio Lab software prosthetic workflow for CAD/CAM manufacturing of a screw-retained NobelProcera zirconia full-arch prosthesis.

Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome



Extraoral view of the definitive screw-retained NobelProcera Implant Bridge and the screw-retained zirconia crown bonded on Universal Base secured on On1 Xeal.

Initial clinical
situation

Treatment
planning

Surgical
procedure

Restorative
procedure

Outcome

Digitally Assisted Soft Tissue Sculpturing (DASS) technique. Scalloping of the soft tissue interface.



Post-operative view: Natural appearance of the perio-restorative interface to embrace the screw-retained full-arch porcelain fused to NobelProcera zirconia prosthesis.

Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome

Digitally Assisted Soft Tissue Sculpturing (DASS) technique. Scalloping of the soft tissue interface.



Final view: Natural appearance of the perio-restorative interface to embrace the screw-retained full-arch porcelain fused to NobelProcera zirconia prosthesis.

Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome

Screw-retained NobelProcera porcelain fused to zirconia implant bridge.



Initial clinical situation

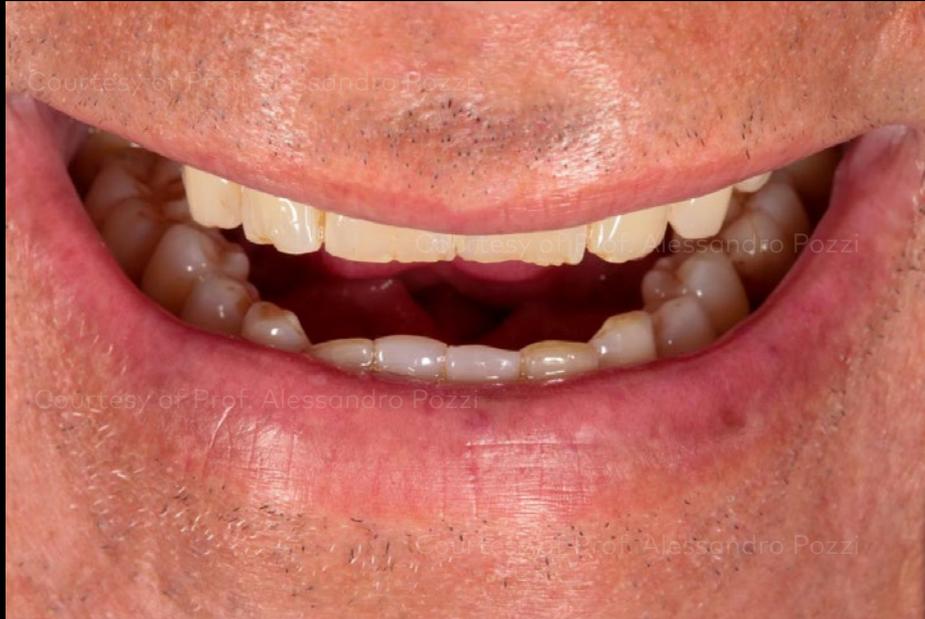
Treatment planning

Surgical procedure

Restorative procedure

Outcome

Screw-retained NobelProcera porcelain fused to zirconia implant bridge.



Pre-operative patient smile. Tooth wear, reduced tooth exposure. Failing anterior dentition. Posterior edentulism.



Post-operative patient smile. Pleasant smile with proper tooth exposure, incisal edge position, tooth length and occlusal plane.

Initial clinical situation

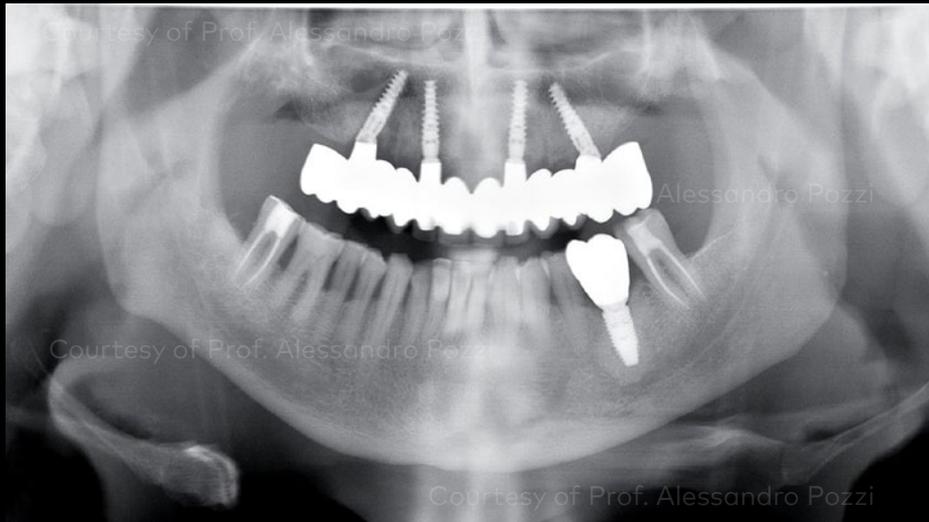
Treatment planning

Surgical procedure

Restorative procedure

Outcome

Excellent marginal bone levels around Multi-unit Abutments Xeal and NobelActive TiUltra implants in the upper jaw and On1 Base Xeal and NobelParallel TiUltra in the 1st molar lower left side.



1-year follow-up. Orthopantomogram. Excellent bone level around Multi-unit Abutments Xeal and NobelActive TiUltra implants in the upper jaw and On1 Base Xeal and NobelParallel TiUltra in the 1st molar lower left side.



2-year follow-up. Orthopantomogram. The bone architecture is preserved with a scalloped design. The bone resorption pattern is within the criteria of success around the Multi-unit Abutments Xeal and NobelActive TiUltra implants in the upper jaw and On1 Base Xeal and NobelParallel TiUltra in the 1st molar lower left side.

Initial clinical situation

Treatment planning

Surgical procedure

Restorative procedure

Outcome

Excellent marginal bone levels around Multi-unit Abutments Xeal and NobelActive TiUltra implants in the upper jaw and On1 Base Xeal and NobelParallel TiUltra in the 1st molar lower left side.



Upper jaw 2-year follow-up. Periapical x-rays upper jaw. Excellent bone levels around Multi-unit Abutments Xeal and NobelActive TiUltra implants.



2-year follow-up. Periapical x-ray. On1 Xeal abutment and NobelParallel TiUltra in the 1st molar lower left side.

Case courtesy of Prof. Alessandro Pozzi



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