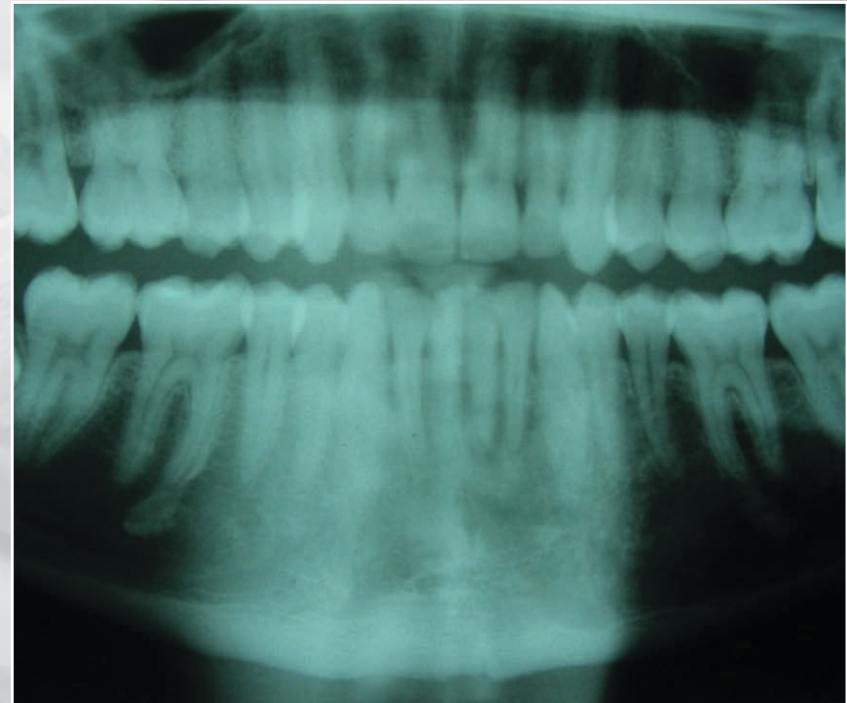
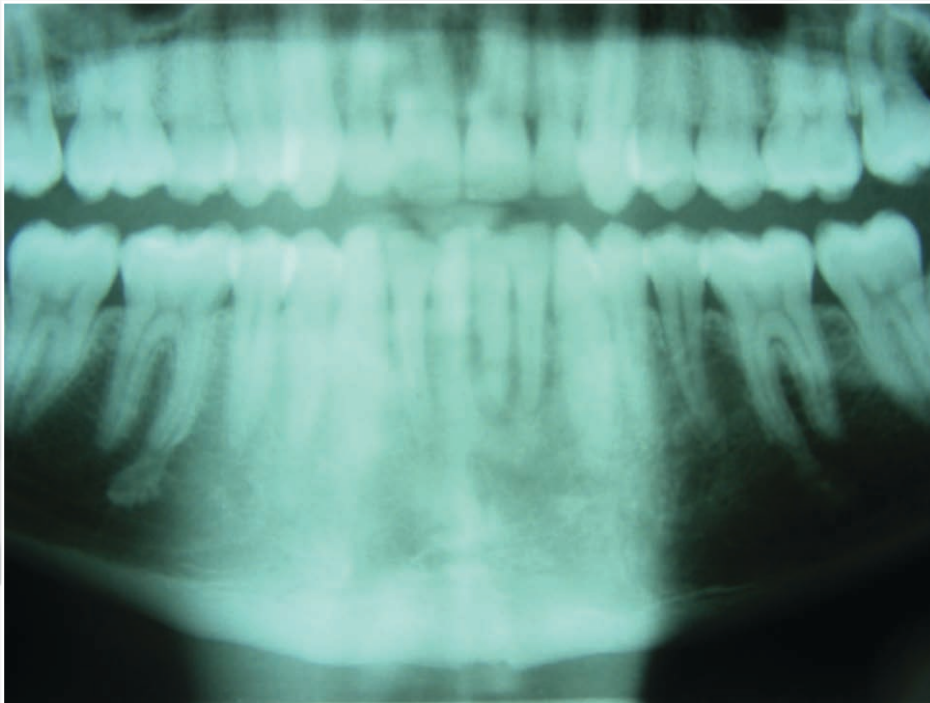


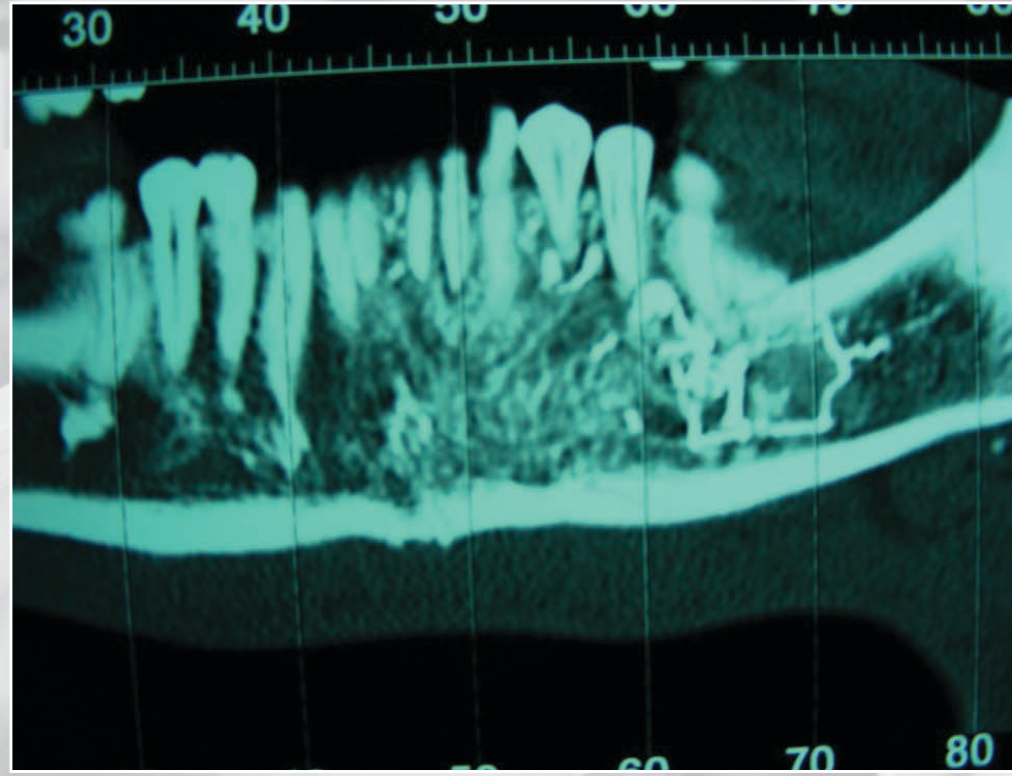
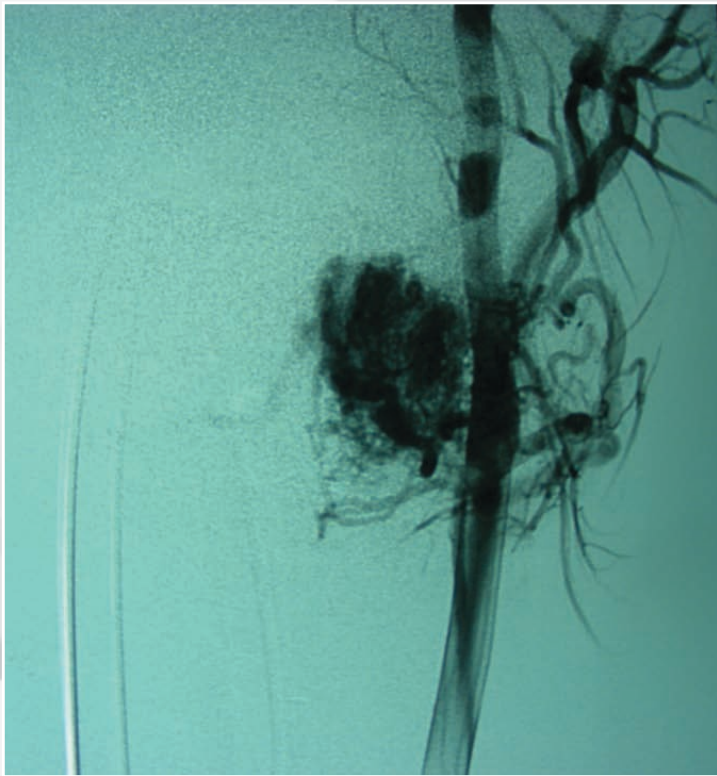
A 23 years old patient was referred to our clinic. He reported spontaneous intraoral bleeding. The clinical exam from his dentist was negative for any contributing factors. In our exam, an erythematous area was noted involving the lingual gingival tissue and the floor of the mouth on the left side of his mandible.



His panoramic X-ray was unremarkable,  
unless one evaluates a radiolucency  
at the area of his left central and lateral incisors....

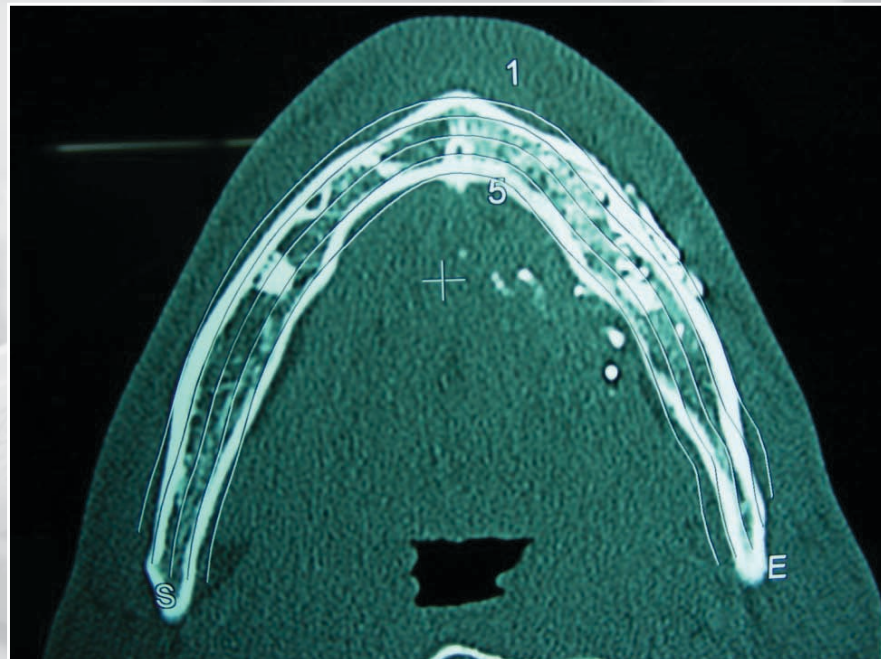
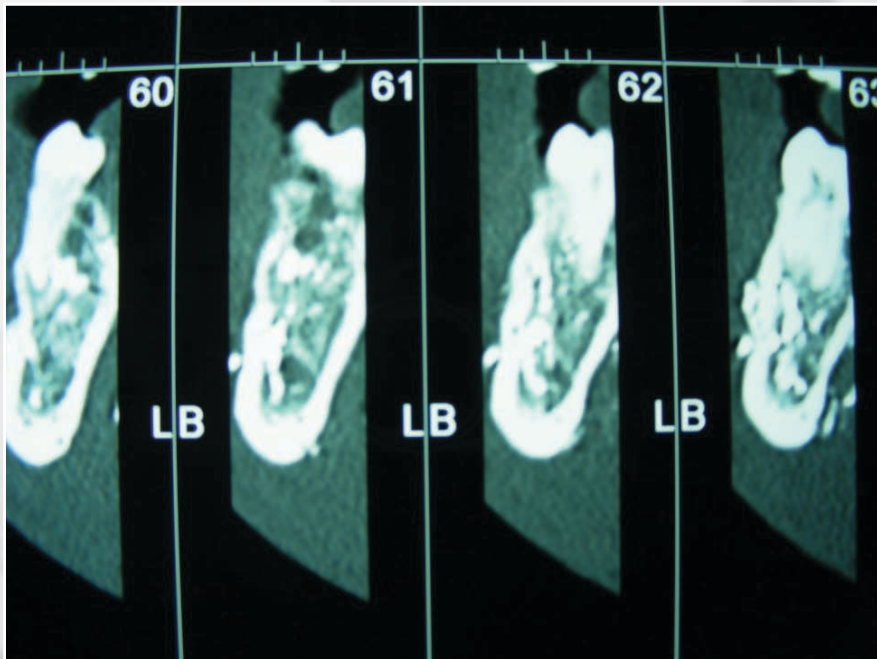


Diagnostic work up continued with an angiogram and a CT of the mandible.

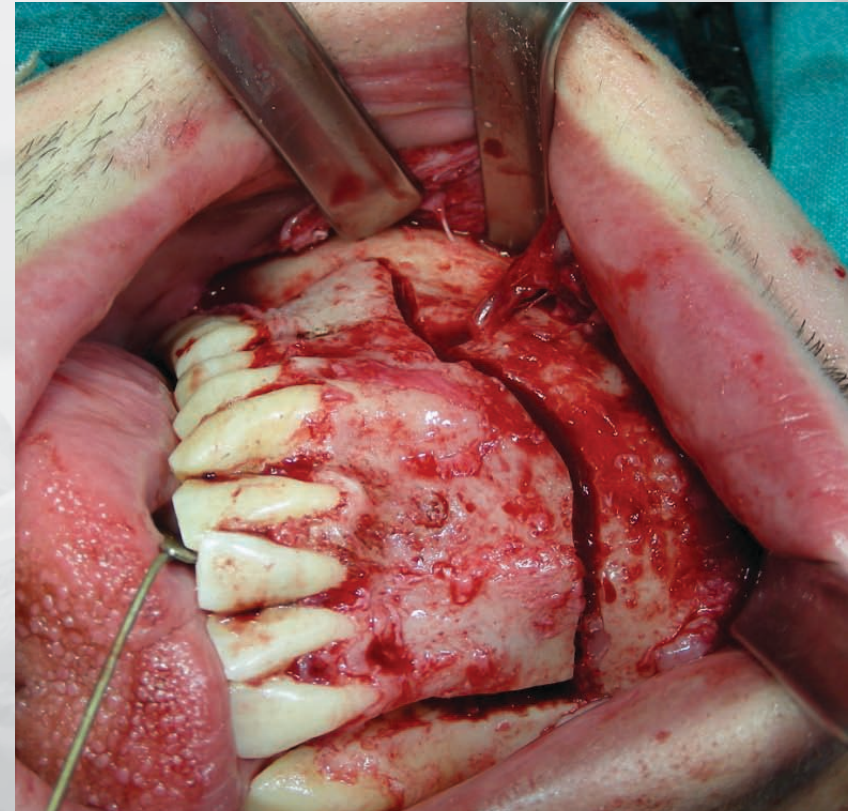




The diagnosis of an arteriovenous malformation of the mandible was confirmed by the angiogram. The extent of the malformation was evaluated by the CT. The patient underwent a preoperative embolization.



24 hours after the preoperative embolization, the patient was taken to the operating room for a resection of the diseased part of his lower jaw.



**Note:**

The probe in the submandibular duct in order to protect the duct while dissecting the floor of the mouth.

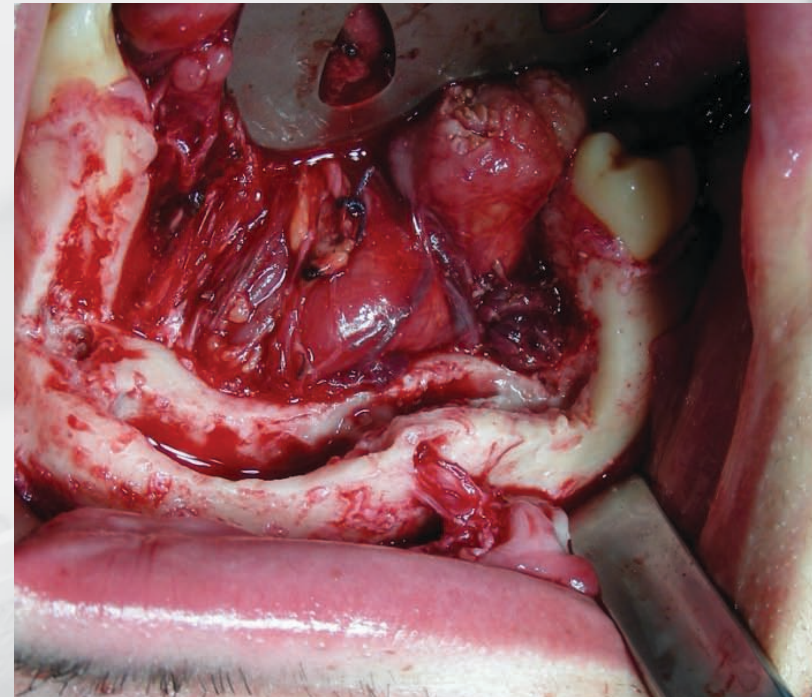
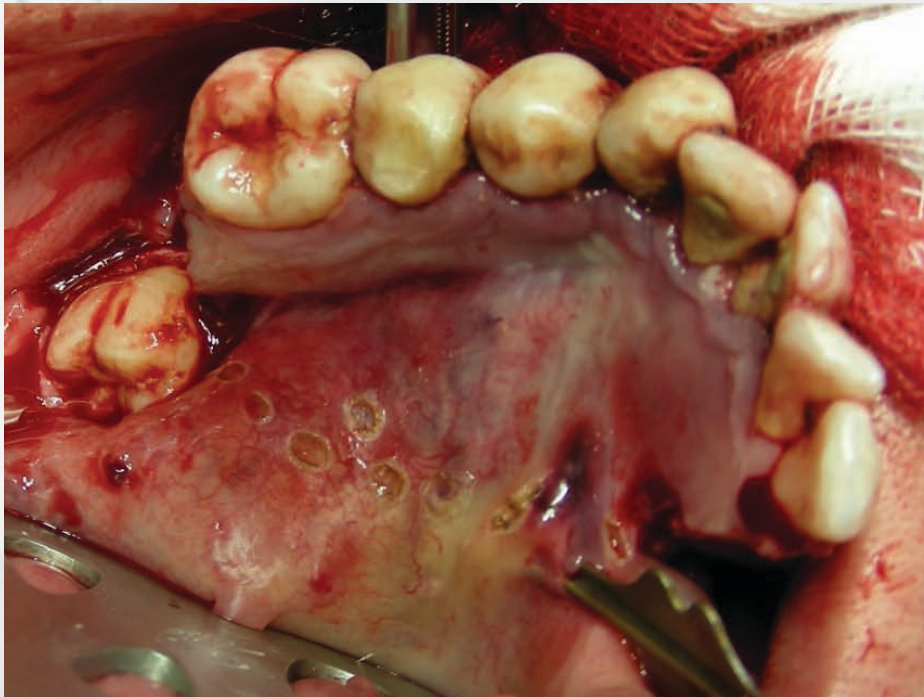
The mental nerve is preserved.

The inferior border of the mandible is preserved.

The osteotomy site is completely dry due to the successful pre operative embolization



A generous part of the lingual soft tissues along with part of the floor of the mouth was removed.  
The submandibular duct was preserved.



The surgical defect was both soft tissue and bony.

The surgical specimen.  
Complete removal of the intraosseous AVM,  
along with floor of the mouth soft tissues.





The next step in the treatment was to reconstruct the resected tissues in order to provide the best esthetic and functional result for the patient.

The treatment included:

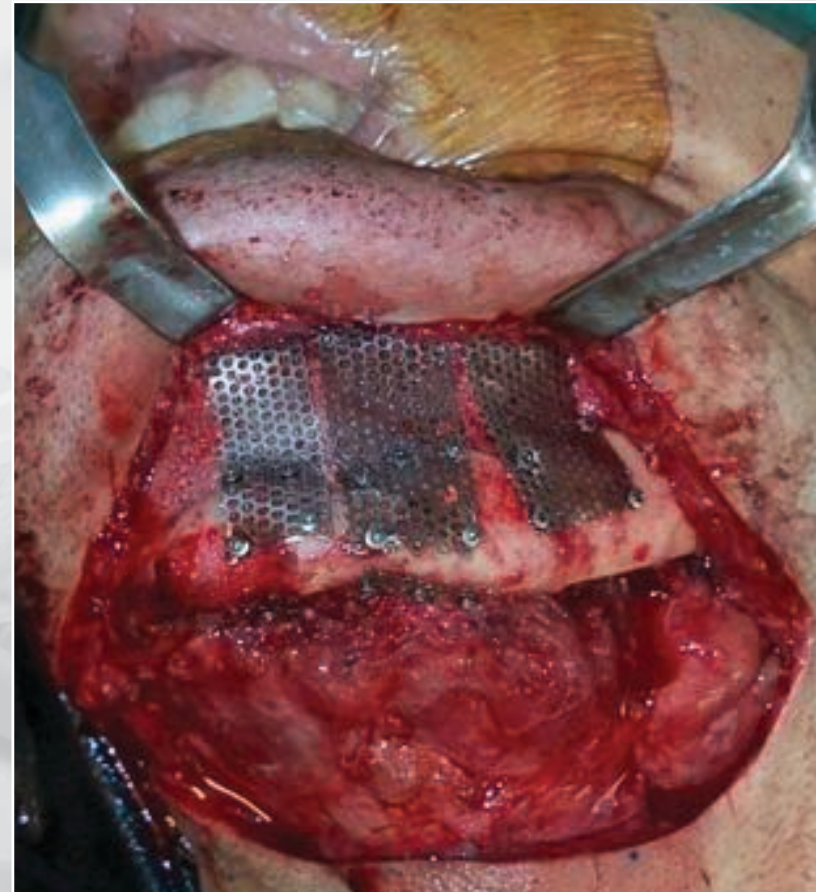
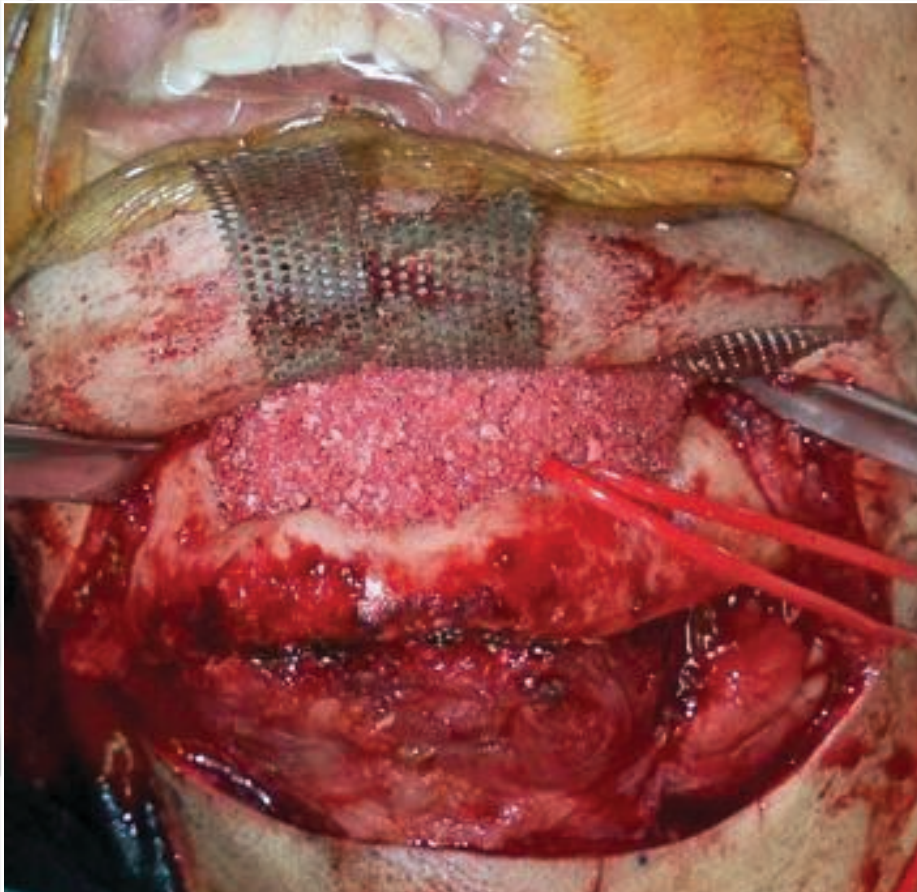
- ▶ The reconstruction of the resected mandibular segment.
- ▶ The reconstruction of the resected soft tissues.
- ▶ The replacement of the teeth.



A reconstruction of the bony defect with autogenous cancellous bone graft from the proximal tibial metaphysis was decided.

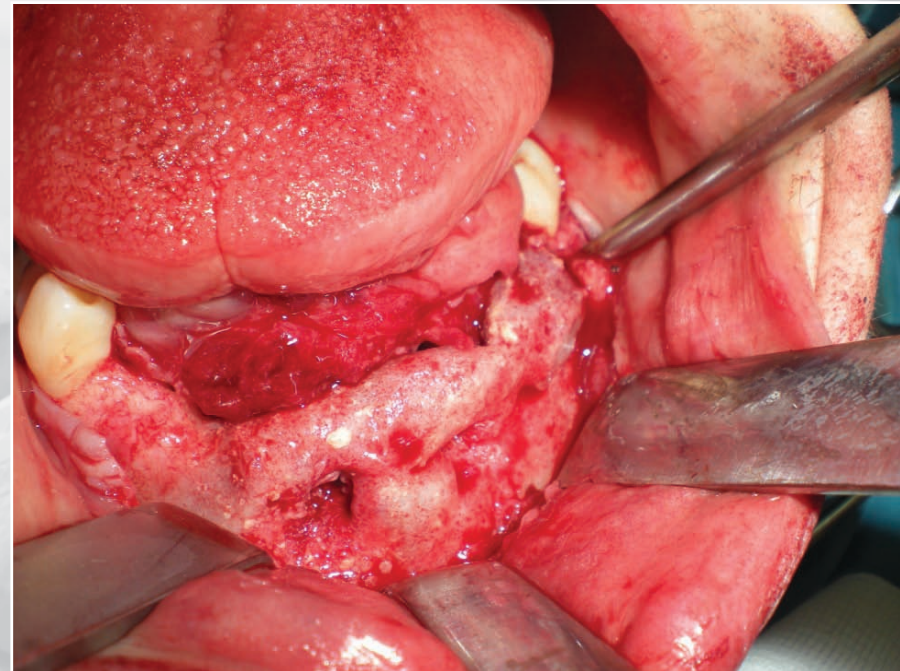
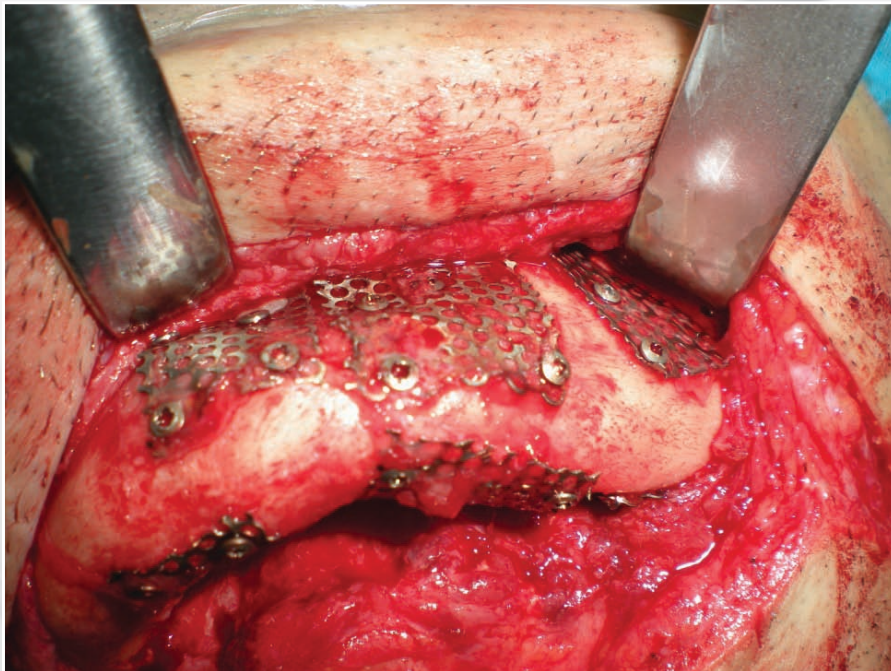


The autogenous graft was mixed with a natural osteoconductive porous bone mineral. The graft was placed via an extraoral submental approach. The graft was immobilized and protected with the use of a titanium mesh.

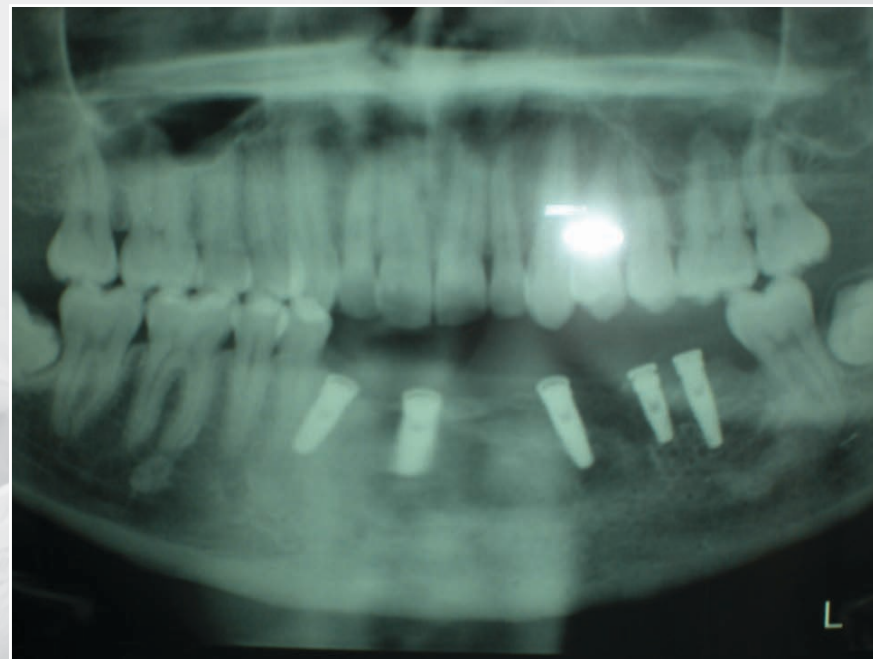
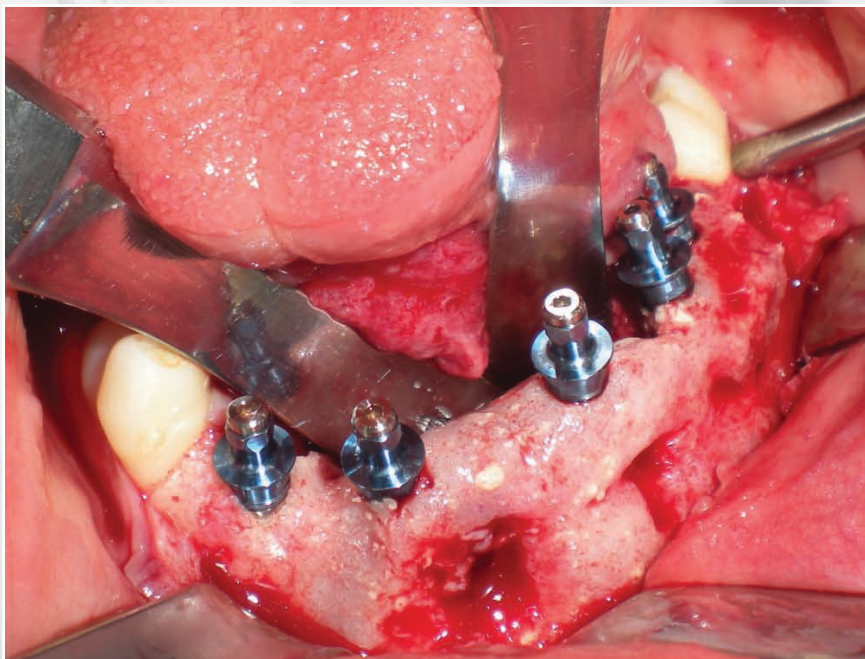




The next step in the patient's treatment was the removal of the titanium mesh and the placement of osseointegrated dental implants. A combined extraoral and intraoral approach was used. The mesh was removed extraorally. The implants were placed via the intraoral approach. The newly formed bone had a satisfactory width and vertical height.

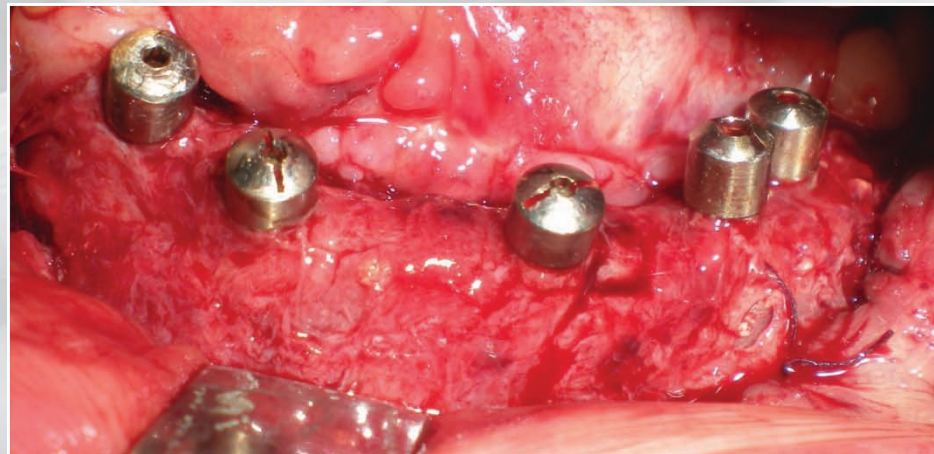
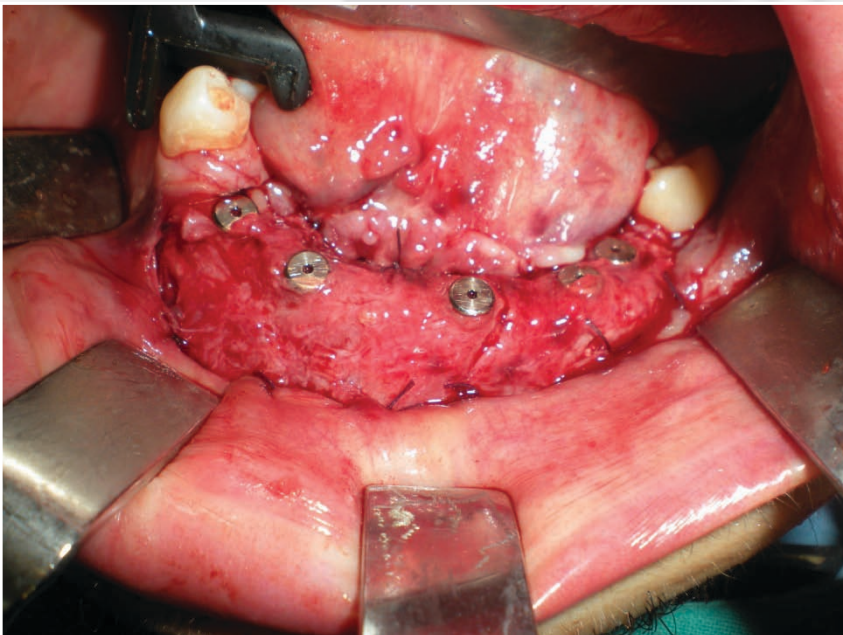


5 osseointegrated dental implants were used to replace the 8 missing teeth.

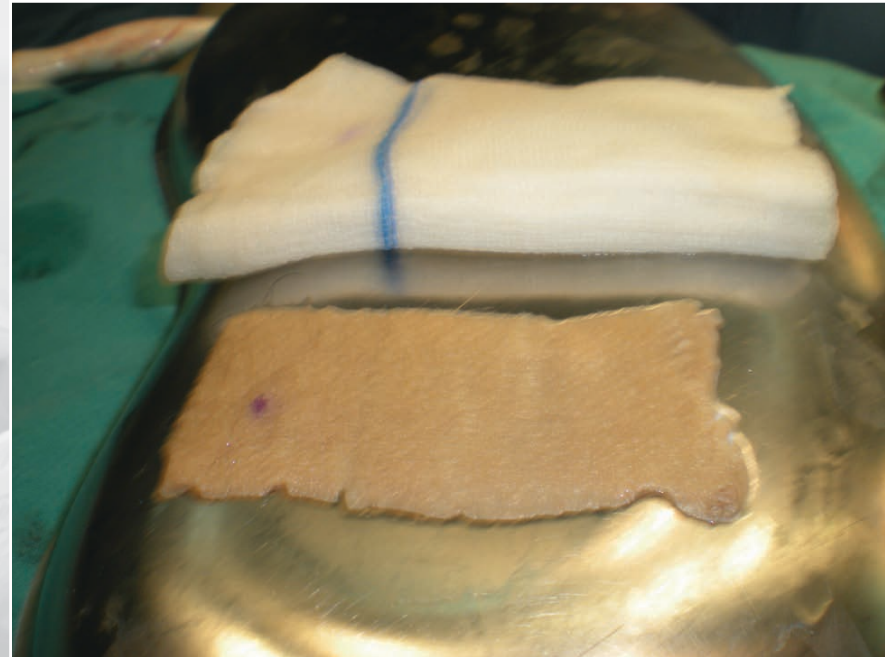




4 months later, the following step was to uncover the dental implants and at the same time to reconstruct the missing soft tissues that were excised during the removal of the AVM. A suprapariosteal dissection was performed to create a plane for the graft. The edges of the oral mucosa, both labial and lingual, were sutured to the suprapariosteal plane in order to create adequate vestibular depth. The healing abutments were placed.

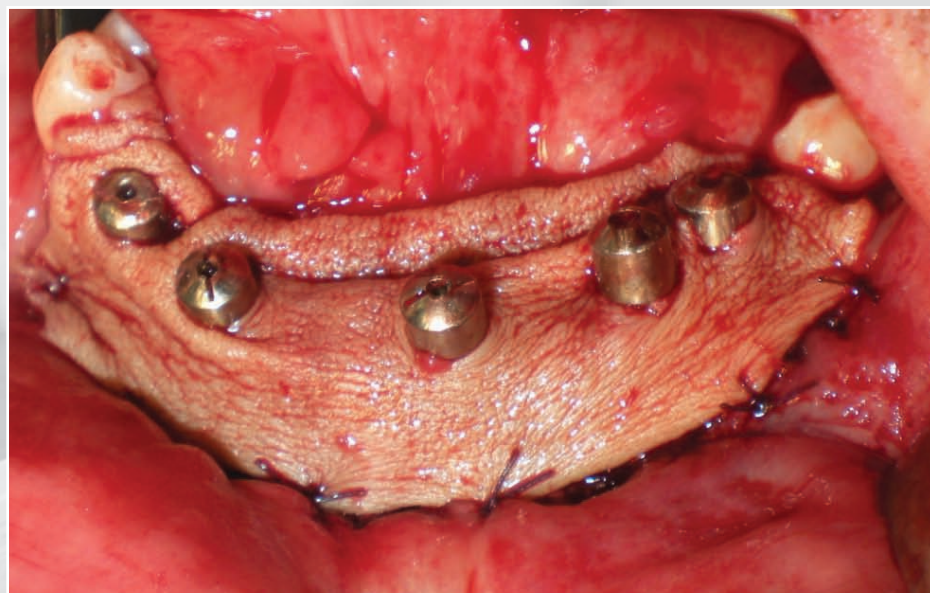
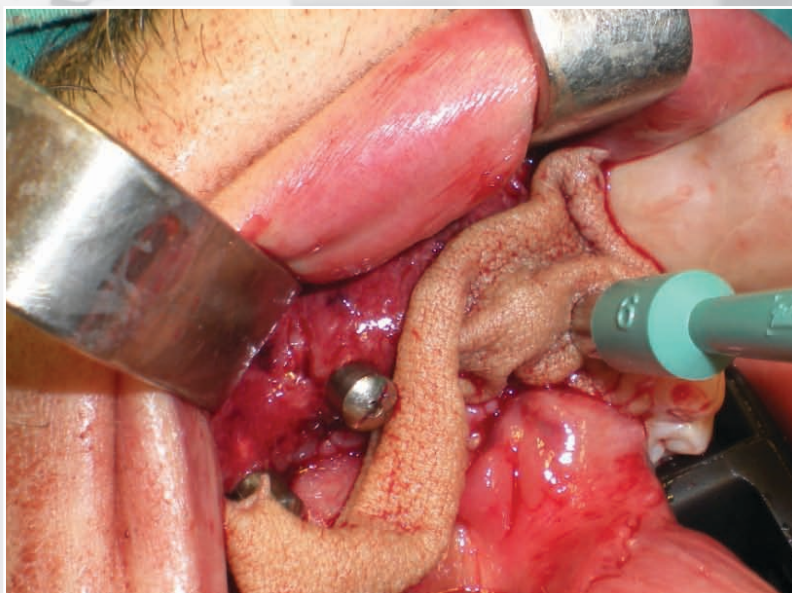


A spit thickness skin graft (hairless) was harvested from the lateral abdominal area.

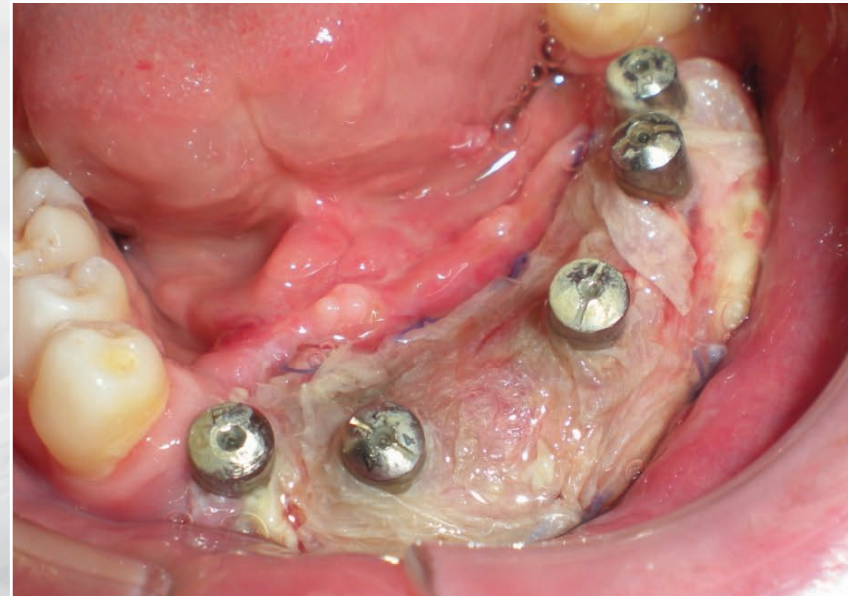
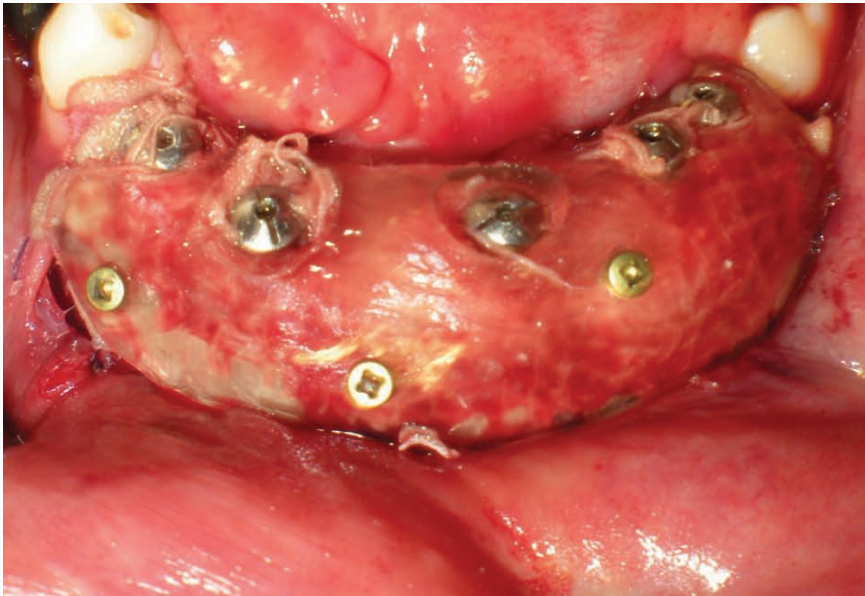




The skin graft was placed around the implants and sutured to the depth of the vestibule.



The skin graft was protected with a prefabricated acrylic splint.  
The splint was fixated with 2.0 mm titanium screws. It was removed 15 days after.  
Note the superficial layer of the skin graft that is sloughing off....





...leaving healthy gingival tissue underneath. ...



...permitting a nice dental restoration of the missing teeth from our prosthodontists.





After 2.5 years of continuous effort we reached the point that the patient was functionally and esthetically treated. Being an excellent athlete himself, he was filled with optimism and patience. At the end, he offered his latest trophy to the surgeon, in order to thank him for the "race" in which they both took part. He is free of disease on a 6 year follow up...

