

# THE RADIAL ARTERY AS A CARRIER OF THE OSTEOCUTANEOUS FIBULA FLAP FOR RECONSTRUCTION OF THE MANDIBULA

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abstract :

Introduction and aims: The fibula flap has proven useful for reconstruction of the lower jaw since it permits reconstruction of nearly the whole mandible additional soft tissue defect coverage. Patients and methods: We report on a patient casualty in which the mandible has been reconstructed despite complete atherosclerotic occlusion of both carotid arteries. The 54 year old patient presented with an extended defect of the lower face following resection of the anterior mandible and floor of the mouth as well as bilateral neck dissection due to a squamous cell carcinoma five years before. He was irradiated postoperatively with a total dose of 70 Gy. Several attempts of mandibular reconstruction have failed so that the patient developed a sleep apnoea syndrome with inability to swallow. Results: According to the concept of a free flap carrier we transferred an osteocutaneous fibula flap pedicled to the radial artery for reconstruction of the lower face. Neovascularisation of the flap was controlled after ischemic preconditioning by non-invasively monitoring hemoglobin-oxygenation and blood flow. We divided the pedicle, containing the nourishing vessels four weeks after transplantation at SO<sub>2</sub> of 12 % and Blood Flow of  $9 \pm 4$  AU during ischemia. The following days we found constant increase, measuring SO<sub>2</sub> of 43 % and Blood Flow of  $18 \pm 6$  AU on the fifth postoperative day. Conclusion: Using O<sub>2</sub>C for monitoring made this microsurgical procedure safer and helped preventing the patient from permanent tracheostomy and reestablished swallowing and speech.

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