

PREVENTION OF OBSTRUCTIVE SLEEP APNEA
BY AN IMPLANT-RETAINED MANDIBULAR ADVANCEMENT SPLINT

Vanessa Gisler and Regina Mericske-Stern

Bern School of Dental Medicine, Department of Prosthodontics

Obstructive sleep apnea (OSA) syndrome is a disorder characterized by repetitive pharyngeal collapse. This may cause disruptive snoring and obstructions of the upper airway during sleep. Continuous positive airway pressure (CPAP), which prevents upper airway collapse during sleep, is currently regarded as the treatment of choice. If this method cannot be applied or is rejected by the patient due to its obtrusive nature, the mandibular advancement splint (MAS) is a viable treatment alternative. Because an MAS requires a stable fixation on the patient's natural teeth in the maxilla, edentulous patients experience discomfort from pressure to the maxilla by such splints. This case report describes the treatment of a maxillary edentulous patient with OSA by an implant-retained MAS. The 78 years old healthy patient was suffering from pain induced by a regular MAS. The splint was not stable and caused pain because of pressure to the maxilla. Therefore, he received four maxillary implants connected with a bar for anchorage of a new maxillary denture as well as a MAS. The implants were planned and placed with a computer-guided technique in a flapless procedure. A titanium bar was fabricated by CAD CAM technology and milled from a single titanium block. Distal extensions were added. Because of the absence of solder joints; the risk of bar fractures could be highly reduced. Apart from the bar retention, the MAS itself was locked in the bilateral gaps of missing lower first molars in the mandible to increase stability. This prevented that the patient's mandible dropped back, and the soft tissues could not collapse even when the patient was sleeping with an open mouth. The presented solution met the patient's demands, fulfilled his expectations and resolved his sleep apnea.