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rate was set to 8 Hz and spot diameter to 3 or 4 mm. Er-Yag laser with properly set parameters proved to be an effective tool in management of oral leukoplakias but patients must be regularly followed-up.

#### **O24.8 REMOVAL OF LARGE VASCULAR MALFORMATIONS USING THE ND:YAG LASER**

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Vascular lesions in the head and neck region are a common pathological entity. Their removal is often difficult, especially if the lesions are large, measuring more than 3×3 cm. Our goal was to determine the clinical value of the Nd:YAG laser in removal of large vascular lesions. A prospective study was conducted in which patients with large intraoral, as well as large extraoral vascular lesions were treated with the Nd:YAG laser. The Nd:YAG laser beam coagulates tissue to a depth of about 5–10 mm, a process called photocoagulation. In our study, 10 patients with large vascular lesions were treated with the Nd:YAG laser. All of the patients were followed up carefully, time until complete healing was recorded, as were also any eventual complications. Post-treatment pain and discomfort were controlled with oral analgetics and topical anesthetics. In all of the patients, tissue sloughing occurred within 1 to 3 days, and healing was complete in 3 to 5 weeks. There were no cases of intraoperative or postoperative bleeding. Three of the cases needed "touch up" photocoagulations to remove residual islets of hypervascular tissue. There was one recurrence of a large hemangioma of the tongue one year after laser photocoagulation, and the procedure was repeated. In one case of a large venous malformation of the upper lip, two photocoagulation procedures were followed by surgical excision. There was only one case of slight postoperative infection, which was overcome with antibiotics. Overall, patients were very satisfied with treatment outcomes. The Nd:YAG laser is a safe and effective tool for removal of large vascular lesions.

## **O25. Minimally Invasive Surgery**

#### **O25.1 THE USE OF STANDARD ENGINEERING SOFTWARE FOR VIRTUAL PLANNING AND VISUALIZATION OF MAXILLOFACIAL OPERATIONS**

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Today we are able use the most modern methods of image processing. Computer tomographs produce up to 16 lines during a Gantry turn. The arising amounts of data can be processed and stored digitally. However a lot of surgeons only use the slices shown by the X-ray film viewer. Multiphase reconstructions and three D-Imaging is seldom used, though. A possibility of not only using the pictures for diagnostics but also in the operation is the use of an operation-navigation-system. The tools for the specifically operation planning are, however, very restricted. The software neither permits any shifting of fragments nor the planning of specific implants, osteosynthesis-material or the repositioning of fractures. For the purpose of fragment positioning, implant planning and reconstruction of defects we applied the standard engineering-software CATIA®. The data is stored by the computer tomograph in the .dicom-format. It is followed by a transformation into the .stl format which is known from the model production. The program CATIA® then constructs a 3-D-model out of the single computer tomography slices. Fracture fragments can be three-dimensionally segmented and positioned on the right place. Osteosynthesis material is selected preoperatively and virtually integrated on the screen in the correct dimension. The application of the standard-engineering-software CATIA is also possible in the virtual planning and visualization of operations. A great advantage is the possibility to work directly in the 3-D-panorama. The segmentation is not carried out in the individual layer any more but in the 3-D-images. The processing of the data sets in the CAD and VR-environment is facilitated by modern multidimensional visualization concepts (5 side CAVE, power wall or head displays). Furthermore, the expansion of the surgical planning tools

due to the virtual reality environment and the specific use of navigation supported methods minimize the operative accesses for the surgeon. The preoperative virtual planning of multiple fragment fractures and defect fractures, particularly in the periorbital middle face, is very important for the precise reconstruction of form and function. Due to integration of modern visualization concepts the often difficult construction of individual implants will be facilitated considerably.

#### **O25.2 ENDOSCOPIC-ASSISTED SURGERY IN THE TREATMENT OF MANDIBULAR CONDYLE NECK FRACTURES**

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Assessment of practicability and of the outcome of endoscopic-assisted approach in the treatment of condylar neck fractures of the mandible. From August 2001 to January 2005, 8 adult patients were included in the study. Inclusion criteria were: lateral displacement of the proximal fragment, no comminution and possibility to place at least 2 screws in the proximal fragment. Four patients presented other mandibular fractures. All Fractures were treated with endoral and transbuccal approaches. All fractures were explored endoscopically and repaired successfully using rigid fixation. All patients presented good anatomic reduction radiographically and good occlusion with normal function and normal mouth opening. Postoperatively, one patient presented a transient partial deficit of the facial nerve. All other patients have good outcome. Endoscopic-assisted surgery in the treatment of mandibular condyle neck fractures is a minimally invasive technique, with reduced morbidity, which can be applied to selected patients with a low and laterally displaced fractures, but requires adequate training in the use of the endoscope.

#### **O25.3 SIX YEARS EXPERIENCE WITH THE TRANSORAL ENDOSCOPIC-ASSISTED TREATMENT OF DISPLACED CONDYLAR MANDIBLE**

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For a minimal invasive of condylar fractures a transoral endoscopic-assisted treatment is performed. The results after six years of routine use of this method are demonstrated. From April 1998 to May 2004 the minimal invasive transoral approach for the endoscopic-assisted reduction and osteosynthesis of 76 medially and laterally displaced condylar mandible fractures was performed in 68 patients. Via limited transoral incision the endoscopic-assisted reduction and fixation of displaced condylar fractures was performed using 30 and 45 degree angled endoscopes (Karl Storz®, Tuttlingen, Germany). 32 fractures were condylar and 44 subcondylar fractures, 24 fractures were displaced medially and 52 laterally. Eight patients demonstrated bilateral condylar mandible fractures. Miniplate fixation was performed using angulated drill and screw driver. (Stryker, Mülheim a.d.Ruhr, Germany) Six months after surgery function of the mandible and the temporomandibular joint were evaluated. Using angled endoscopes good visibility of the fracture side was obtained and allowed for precise anatomic reduction in all patients. Angulated drill and screw driver facilitated the osteosynthesis by transoral approach. The mean operating time was measured in the last 40 consecutive cases with 1h04 min. Postoperatively all patients showed quick recovery, preinjury occlusion and normal temporomandibular joint function. The transoral endoscopic-assisted treatment using angulated drill and screw driver is the method of choice for the surgical management of displaced condylar fractures. Facial nerve injury and visible scars are avoided using the transoral approach.

#### **O25.4 DIAGNOSIS AND TREATMENT OF THE OBSTRUCTIVE SUBMANDIBULAR SIALADENITIS UNDER SIALOENDOSCOPY**

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To assess the curative effect of the sialoendoscopic technique for diagnosis and treatment of the chronic obstructive disease in sub-mandibular gland. This report describes the results of the diagnostic