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Dr. Dovšak has been using a variety of Fotona dental laser systems in his practice for over a decade.



## Venous Malformation Treatment Using Nd:YAG – A Case Study *Dr. David Dovšak, M.D., Specialist Surgeon in Maxillofacial Surgery*

This case describes the treatment of a young patient, referred by the patient's dentist, for fear of the venous malformation being accidentally bitten, initiating excessive bleeding. Conventional therapies include chemical sclerotherapy, which requires radiological control to ensure complete and accurate treatment. With sclerotherapy the risk of enlarging the lesion is present, if not all vascular structures are sclerotized. Other alternative treatments are excision, cryotherapy and electro-cauterization, which poses a risk of inducing excessive bleeding if the lesion is penetrated into.

The Nd:YAG laser's unhindered penetration deep into the tissue and its good absorption in hemoglobin led the decision to use the modality to treat this case. When treating young children it is advisable to do so under general anesthesia; placing local anesthesia deep in the oral cavity can be a problem in young patients. In adults a general rule is to use local anesthesia in the distal 2/3 part of the tongue, general anesthesia when treating the oropharyngeal part of the tongue. During the treatment, the fiber tip is held in near contact with the tissue surface. The borders of the lesion are first outlined with the laser and afterwards systematic passes covering the whole lesion are made. Immediate shrinking and blanching of the mucosa will be observed. The power of the Nd:YAG laser can be controlled to a certain degree by varying the distance between the fiber tip and the mucosa. It is recommended to hold the fiber tip slightly further from the target when initiating the treatment and closing in on the target during the treatment, once the effect of the laser parameter settings has been visually confirmed. The procedure in this case was completed within 5 minutes, without any excessive bleeding or swelling.

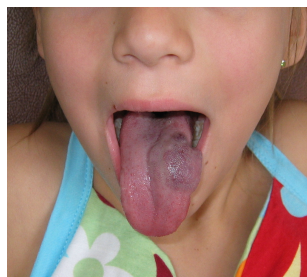
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|                          |                       |
|--------------------------|-----------------------|
| Laser source:            | Nd:YAG (1064 nm)      |
| VSP Mode:                | SP                    |
| Power:                   | 10 W                  |
| Frequency:               | 50 Hz                 |
| Handpiece:               | R21 with 300 µm fiber |
| Water/Air Spray Setting: | None                  |

No further post-operative care was required. The patient was released immediately after the procedure and given non-steroid analgetics to ease discomfort during meals. Tissue sloughs off during the first few days and the wound will be covered with newly formed fibrin tissue. Re-epithelization starts from the wound margins and is complete within 2 to 4 weeks, depending on the size of the lesion.

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Before



2 weeks after



3 months after