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Intralesional Ultrasound-Guided Photocoagulation Using the Nd:YAG Laser

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A 61-year old male patient was referred to our department with a sensitive elastic tumor in the left masseter muscle, which caused functional and aesthetic complaints. Doppler ultrasound (US) revealed a low-flow intramuscular haemangioma.

The decision was made to treat the haemangioma intralesionally with the Fotona Nd:YAG laser. As blind intralesional photocoagulation (PhC) could endanger branches of the overlying facial nerve, US guidance was used, quite similar to US-guided needle aspiration biopsies. In this way, the position of the fiber-optic cable tip can be controlled throughout the procedure. Additionally, the extent of PhC can be controlled in vivo, as the density and thus echoing properties of vascular tissues change instantaneously upon coagulation.

The complete treatment of the lesion required one Nd:YAG laser PhC session. The procedure was conducted under local anesthesia with Ultracain and sedation with Dormicum. The fiber-optic cable was inserted into the lesion via a long wide bore needle using the same US probe as used for US-guided needle aspiration biopsies. As the US properties of the vascular lesion change instantaneously upon coagulation, in-vivo control of the extent of treatment was possible. The US probe was moved to different positions and the needle with the fiber-optic cable inserted to various depths, until complete coagulation of the whole lesion was visible on the US monitor.

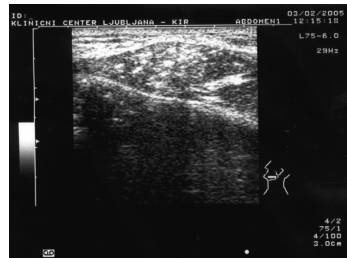
Parameters:

Laser source:	Nd:YAG (1064 nm)
VSP Mode:	SP
Power:	12 W
Frequency:	50 Hz
Handpiece:	Ultrasound probe used for needle aspiration biopsies
Water/Air Spray Setting:	None

In the first week after treatment, the treated area was oedematous and painful, and pain was controlled with non-steroidal analgetics. Later, the oedema subsided, and gradual shrinkage took place due to interstitial scarring. In the following months, the scar softened to a certain degree. There was no tissue sloughing, as the surface epithelium remained undisturbed and no damage to the facial nerve branches occurred. The patient was very satisfied with the result.



Haemangioma before PhC: fiber-optic tip visible (arrow)



Haemangioma after PhC



US probe with fiber-optic cable inserted into needle



Pre-op



3 months post-op

