Becoming kissable: Laser-assisted haemangioma removal

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[PICTURE: ©DIEGO CERVO]



Fig. 1a



Fig. 1b

Figs. 1a & b_Treatment example with the 980 nm diode laser at 2.5 W (continuous wave); (a) Typical presentation of a haemangioma; (b) Six weeks after the third session.

_Introduction

This is the story of how an attractive young woman became kissable once again, thanks to laser therapy.

There are a surprisingly high number of patients with growths mostly in the area of the lip vermilion, and virtually every person affected by this condition reports suffering under it. Strangely, we dentists are hardly ever asked by patients what these growths could be or how they can be treated. The reasons for this will be discussed later on in this article—I can certainly promise that it will be worth your while to read on.

The lesion has a bluish colour, occurs in differing sizes and especially on the lip, but also on the mucosa of the cheek or on the tongue and—as you already guessed—goes by the name of haemangioma. Haemangiomas are benign blood-vessel tumours that are usually prominent and localised, and range from crimson to greyish-blue in colour. The blood filling can often be pressed out (spatula test).

In this article, I will discuss the various non-invasive, minimally invasive and invasive laser treatment methods for haemangiomas and how a rather rare exophytic haemangioma can be treated quickly, painlessly and aesthetically.

_The proper addressee

We should first address the interesting issue of why dentists are rarely asked about treatment options for these unsightly lip spots. The answer is as simple as it is surprising: the patients have already asked someone else: their GP. Generally their fam-



ily doctor, or perhaps their dermatologist, or another doctor who does not normally work with lasers will, correctly, tell the patient that it is a benign tumour and that he or she would recommend leaving it well alone, as removal can lead to copious bleeding and potentially to ugly and disfiguring scars after removal of the sutures. And of course, the doctor is right. It is better to leave the scalpel alone and refer the patient to a specialised colleague, who ideally also has experience in plastic surgery, or even better to a laser specialist!

If this last description applies to you anyway, first obtain the patient's informed consent, then furnish the patient with a quotation and—after the statutorily prescribed reflection period—perform the treatment using your diode laser in less than five minutes. The next section will detail this method and other more invasive methods.

_The methods— From non-invasive to invasive

Non-invasive therapy

First, let's talk about the non-invasive haemangioma therapy developed by the laser pioneer, Prof. Georgios E. Romanos. The haemangioma is treated by means of a contact-free diode laser through a very thin ice wafer. The cooling effect of the ice preserves the texture of the lip.

Place an extremely thin ice wafer on the vascular tumour (Fig. 1a) and, after administering local anaesthetic, irradiate the tumour through the ice using the preset haemangioma programme of the elexxion claros or 2.5 W (continuous wave) until coagulation is achieved. As the ice wafer melts, the laser must constantly be moved in order to prevent direct contact between laser and tissue.

The blue spot shrinks and success of the therapy is evident by the greyish-white colour of the tissue. The constant cooling protects the surface of the tissue, and the lip structure is fully preserved. As a rule, this therapy must be repeated several times until the haemangioma has been completely eliminated (Fig. 1b).

Romanos originally described this procedure in the Atlas of Laser Applications in Dentistry1 with reference to the Nd:YAG laser, which is the ideal wavelength for this method owing to its greater depth of penetration compared with the diode laser.

How does it work? Laser light of the above-mentioned wavelengths has a high selective absorption in haemoglobin and in certain pigments. This results in energy bundling in the tumour tissue and leads to coagulation and destruction of the vascular tumour.

What laser types are suitable? Lasers with a greater depth of penetration and high haemoglobin absorption are more advantageous for this application: argon, Nd:YAG, 980 nm diode and 810 nm diode lasers.


Fig. 2a

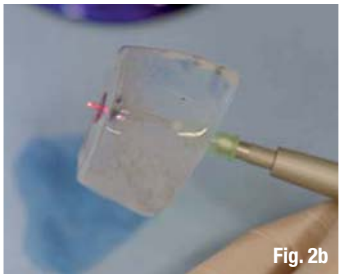
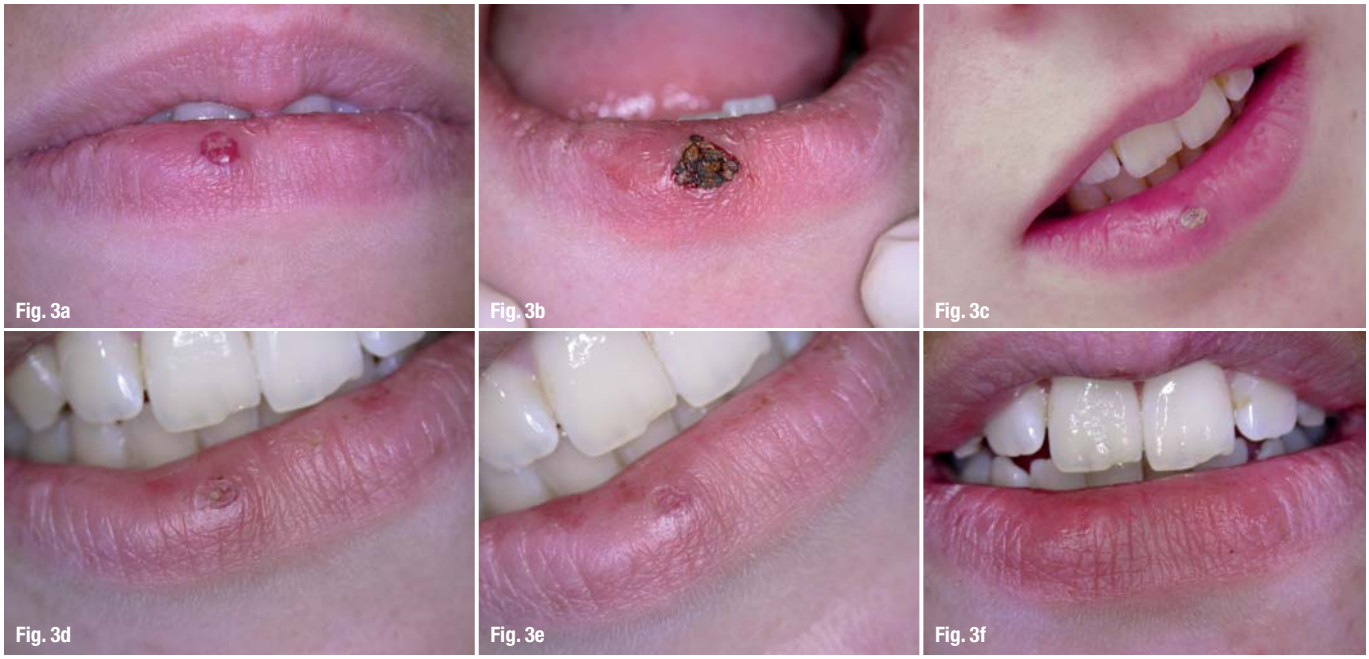

Fig. 2b


Fig. 2c


Fig. 2d

Figs. 2a–d_Minimally invasive therapy (Photographs courtesy of Dr Bach).



Figs. 3a–f_(a & b) Invasive therapy, (c) one, (d) two, (e) six and (f) twelve weeks post-op.

Minimally invasive therapy

In Laser (German edition), Dr Georg Bach2 presented a modified method to optimise this procedure for the 810 nm diode laser. With the new method, the haemangioma is treated directly and in a minimally invasive manner (Fig. 2a) using a cannula embedded in an ice block (Figs. 2b & c). The advantages of this method are good results while protecting the lip structure by means of cooling with ice, as well as the possibility of completing the treatment in just one session (Fig. 2d).

Invasive therapy

This female patient consulted me about her lip problem. She told me how unhappy she was that she was no longer being kissed because of the growth on her lip. Her lip texture and structure had been affected (Fig. 3a). In this case, invasive therapy was able to provide a good aesthetic result for the exophytic haemangioma on her lip.

After administration of local anaesthetic, one-time, direct, contact-free irradiation was performed with the preset haemangioma programme of the elexxion claros with the 600 µm fibre up to complete coagulation (Fig. 3b). In this programme, the elexxion claros operates at 25 W high peak power with pulses of 15,000 Hz and a duration of 10 µs and an average output of 3.75 W.

After one week (Fig. 3c), we saw wound healing without any complications. At every follow-up visit, the elexxion claros was applied using the low-level laser programme for one minute at 100 mW with the glass rod in order to optimise wound healing. A distinct improvement in the situation was seen after just two weeks (Fig. 3d). Slow and constant self-optimisation was observed in the further wound-healing process after six weeks (Fig. 3e) up to the desired final result at the end of 12 weeks (Fig. 3f).

If one has performed the treatment correctly, there will be no bleeding, and the patient will have no pain or discomfort. Only two weeks later, this patient was kissable once again as she reported with a big smile on her lips.

This case report has demonstrated that invasive laser therapy can, in selected indications, lead to good aesthetic results with exophytic haemangiomas of the lip quickly, safely and efficiently.

Editorial note: A complete list of references is available from the publisher.

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