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Comparative study of upper lip frenectomy with the CO₂ laser versus the Er, Cr:YSGG laser

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Abstract

Objectives: To compare upper lip frenulum reinsertion, bleeding, surgical time and surgical wound healing in frenectomies performed with the CO₂ laser versus the Er, Cr:YSGG laser.

Study design: A prospective study was carried out on 50 randomized pediatric patients who underwent rhomboidal resection of the upper lip frenulum with either the CO₂ laser or the Er,Cr:YSGG laser. Twenty-five patients were assigned to each laser system. All patients were examined at 7, 14, 21 days and 4 months after the operation in order to assess the surgical wound healing.

Results: Insertion of the frenulum, which was preoperatively located between the upper central incisors, migrated to the mucogingival junction as a result of using both laser systems in all patients. Only two patients required a single dose of 650 mg of paracetamol, one of either study group. CO₂ laser registered improved intraoperative bleeding control results and shorter surgical times. On the other hand, the Er,Cr:YSGG laser achieved faster healing.

Conclusions: Upper lip laser frenectomy is a simple technique that results in minimum or no postoperative swelling or pain, and which involves upper lip frenulum reinsertion at the mucogingival junction. The CO₂ laser offers a bloodless field and shorter surgical times compared with the Er,Cr:YSGG laser. On the other hand, the Er,Cr:YSGG laser achieved faster wound healing.

Key words: *Frenectomy, upper lip frenulum, CO₂ laser, Er,Cr:YSGG laser, laser.*