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Comparison of high-power diode laser and electrocautery for lingual frenectomy in Infants

This study evaluated the release of the lingual frenulum by means of frenectomy in newborns from zero to 90 days of age who were breastfeeding and had a diagnosis of ankyloglossia with surgical indication, by comparing the use of two thermal surgical instruments: electrocautery and laser high power diode. Sixty infants were randomly allocated into two groups, but three participants did not meet the inclusion criteria leaving fifty-seven participants in total (23 undergoing electrocautery and 34 undergoing high-power diode laser). Tongue movements were assessed based on a clinical assessment and using the Bristol Tongue Assessment Tool (BTAT) before and 15 days after the surgical procedures. The visual analog scale was applied to mothers on the same occasions to measure pain during breastfeeding. Both groups showed an increase in the BTAT score (favorable result) in the post-surgical evaluation, attesting to the effectiveness of the application of the current protocol. For some infants, the anterior third of the tongue was not always free to allow the movements necessary for lingual functions. It was essential that the surgeon had skill and in-depth knowledge of the equipment used to avoid accidents and complications in the region of important structures and all surgeries were performed by a single surgeon. Both techniques used in this study were safe and effective, causing little bleeding and few trans and postoperative complications. The group submitted to high-power diode laser showed less post-surgical bleeding compared to the group submitted to electrocautery and absence of inflammation at the edges of the surgical cut, but a higher number of recurrences and need for reintervention (58%) in relation to the use of electrocautery (26%) and the number of recurrences of the use of electrocautery was very high, despite being lower than the use of diode laser. In the group that used electrocautery, 7 participants had inflammation at the edges of the surgical wound in relation to the use of laser. The cases that presented re-coaptation of the cut tissues and/or fibrotic scarring at the cut site were considered recurrent, both limiting the possibility of moving the anterior third of the tongue. There was no difference in the results regarding maternal pain for the two groups.

Recent Publications

1. Costa, D. et al. Frenectomia a laser: uma revisão de literatura. *Diálogos em Saúde* [Internet]. Jun 29 v.3, n.2, 2021.
2. Isac, C. Frenectomia – momento ideal da intervenção cirúrgica. *Dissertação (Mestrado Integrado em Medicina Dentária)*, Instituto Universitário Egas Moniz, IUEM, 2018.
3. Khan U, MacPherson J, Bezuhly M, Hong P. Comparison of Frenotomy Techniques for the Treatment of Ankyloglossia in Children: A Systematic Review. *Otolaryngol Head Neck Surg*. 2020 Sep;163(3):428-443.

Biography

Adriana Mazzoni has been a specialist in Pediatric Dentistry for 33 years and has been working specifically with infants, breastfeeding and lingual frenectomy in babies for 27 years, this being a daily mission in her profession. When her daughter was born 27 years ago, she, who already worked with newborns, had difficulties in breastfeeding her and due to the little professional knowledge that existed at the time by medical and dental professionals, she delved deeply into studies in this area, to help mothers with breastfeeding difficulties. It decided to look for the best and most comfortable way to perform the lingual frenectomy and to present the best results, resulting in this first study, which was a blinded randomized clinical trial.

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