EXCISION OF MUCOCELE WITH ERBIUM LASER IN PEDIATRIC PATIENT

GALVAN CP 1, PAJARITO AY1, ARRIAGA FL3, RAMOS MP2, ZARAZUA CA2, RAMIREZ KM2, CHAVEZ JM2.

1.RESIDENT OF PEDIATRIC DENTISTRY AT UNIVERDIAD DE GUADALAJARA, CAMPUS CUCS
2.PROFESSOR IN THE PEDIATRIC DENTISTRY SPECIALTY PROGRAM AT UNIVERSIDAD DE GUADALAJARA CAMPUS CUCS
3. GUEST PROFESSOR INVITED IN THE PEDIATRIC DENTISTRY SPECIALTY PROGRAM AT BENEMERITA BENEMERITA UNIVERSIDAD AUTÓNOMA DE PUEBLA

Introduction

The mucocele is the most common minor salivary gland associated disease of the oral cavity, It is also among the most biopsied oral lesions in pediatric patients.(1) Prevalence in the lower lip represents up to 80% of cases but it can also be found in the upper lip and tongue (2). Frequently develops due to trauma in the oral mucosa following extravasation or retention of mucous material from salivary glands in the subepithelial tissue, they are usually asymptomatic but rarely resolve on their own (3). The treatment of this pathology can be performed by conventional surgery, cryotherapy, laser therapy like surgery and vaporization. Some benefits reported by using different types of laser is that it provides a safe, quick, minimal bleeding procedure, less painful and with high acceptance by the patients(4,5).

The Cr:YSGG Erbium laser with a wavelength of 2890 nm is used for all tissues due to its operational efficacy and high clinical control. The chromophores for the Erbium laser are water and hydroxyapatite crystals. Thanks to chromium's properties, this laser interacts with collagen fibers and hydroxyls found in blood. (4).

Case Report

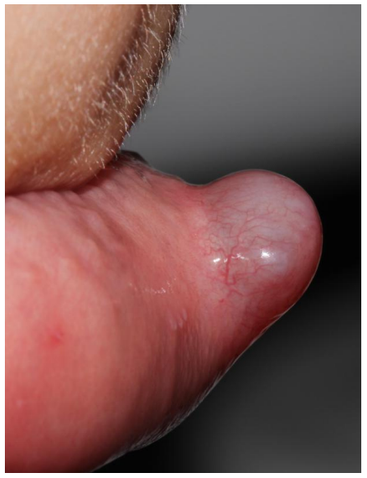


Image 1. *The mucocele in sagittal view*

A 10-year-old male patient referred to the Department of Pediatric Dentistry of the University of Guadalajara, CUCS campus, due to swelling in the labial mucosa of the lower lip. Clinical examination revealed a 10mm sessile-based nodule with a soft texture and defined erythematous border. Image 1. Excision biopsy was performed using Erbium Cr:YSGG laser 2890nm (Biolase) followed by photobiomodulation with 810nm diode laser (DMC therapy) and 940nm (Biolase), the excised lesion was sent to the Oral Pathology department and the results confirmed the initial diagnosis.

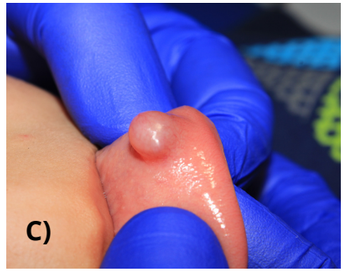
Management

First visit

Clinical history of the patient was performed, as well as an extraoral and intraoral evaluation.

Second visit (one week a of follow-up)

The excisional biopsy was performed under local anesthesia with mepivacain epinephrine 2%(Septodont) using Erbium Cr:YSGG laser 2890nm tip MC6 chisel sapphire (Biolase). Image 2-A. Followed by photobiomodulation with diode laser of 810nm (DMC therapy). Image 2-B. the excised lesion was sent to the department of Oral Pathology and the results confirmed initial diagnosis. No pain or discomfort was referred to us by the patient during the procedure. Image 2; C-F.



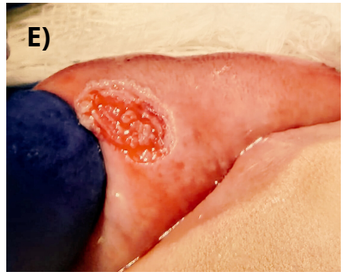


Image 2. *A) The Erbium Cr:YSGG laser 2890nm (Biolase); B) Diode laser of 940nm (Biolase) C) Mucocele before the procedure; D) Mucocele photoablation with Erbium laser; E)The wound inmediatly after mucocele removal; F) Photobiomodulation with diode laser of 940nm*

Third visit (3 days of follow-up)

Clinically, there is continuity in the mucosa but presents central erythema spots due to an accidental bite. Image 3.

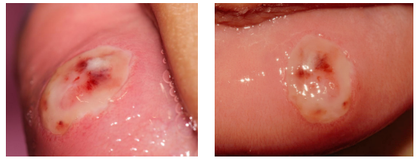


Image 3. Zone of repair *after 3 days of follow-up*

Fourth visit (2 months of follow-up)

Clinically, the labial mucosa has a normal color, it´s completely healed without signs of recurrence. Image 4.

Image 4. *2 months of follow-up*

Conclusions

- The use of Erbium lasers in dentistry have proven to be a useful method to conventional oral surgery, for both hard and soft tissue management.
- The Erbium lasers specifically provides an excellent system for pediatric dentistry as there is a minimal use of anesthesia, significant reduction in bleeding and discomfort during and after the surgery making unnecessary the use of stitches in most cases.
- Thanks to these benefits, it allows a more gentle procedure and is approachable to patients with anxiety and fear to conventional surgery.
- Finally, the use of photobiomodulation with different wavelengths leads to a faster cicatrization with a controlled swelling and analgesia.

References

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