

## Case Report

**Ray of Light in Treatment of Mucocele**Dr. Sonali Sarkar<sup>1</sup>, Dr. K. Karthick<sup>2</sup><sup>1</sup>Senior lecturer, Department of Oral Medicine & Radiology, Sathyabama University Dental College & Hospital, Jeppiar Nagar, Rajiv Gandhi Salai, Chennai- 600119, Tamil Nadu, India<sup>2</sup>Sonali's multispeciality Dental Clinic, Thousand Lights, Chennai- 600006, Tamil Nadu, India**\*Corresponding author**

Dr. Sonali Sarkar

Email: [dr.sonali\\_sarkar@hotmail.com](mailto:dr.sonali_sarkar@hotmail.com)

**Abstract:** Mucocele is an obstructive minor salivary gland lesion. It commonly occurs in the lower labial mucosa, its main etiology being trauma to the mucosa. The conventional treatment choice of mucocele would be excision of the lesion but it has its own disadvantage of the lesion recurring. The advent of laser has opened up a new hope of treating mucocele with Diode lasers which has more advantages such as no recurrence of the lesion and minimum pain with no bleeding during the procedure. The present case report deals on treatment of mucocele of the lower labial mucosa with 940 nm Diode laser and a review of the case with no recurrence after one year.

**Keywords:** Mucocele, Treatment, Diode Laser, no recurrence, bleeding, minimal pain

**INTRODUCTION**

Mucocele (latin term muco = mucus, coele = cavity ) is defined as accumulation of mucus secreted from salivary glands and their ducts in the oral cavity's subepithelial tissue [1]. It is the most common minor salivary gland lesion clinically presenting itself as a single or multiple lesion being spherical, well circumscribed nodule, fluctuant and generally asymptomatic [2]. The etiology of these lesion are related to mechanical trauma causing the rupture of the duct and extravasation of mucus into the surrounding tissue or due to the obstruction of the duct causing ductal expansion [3]. Different Treatment options have been used for mucoceles including needle aspiration, surgical excision, marsupialisation, micromarsupialization, cryosurgery, laser vaporization, corticosteroid injection and laser excision [4, 5]. In this case, mucocele of the lower lip was treated with Diode laser and the results are presented.

**CASE REPORT**

A 19 year old, male patient had come with the complaint of swelling in the lower lip region for past 2 months. He gave a history of the presenting illness being first observed 2 months ago after accidentally biting the lower lip. The swelling remained the same size for 2 months. Patient gave no relevant medical history.

On intra oral examination, on inspection, a single swelling was seen in the lower labial mucosa

[FIG.1] oval in shape, measuring about 1.5 cm x 1 cm in size extending medially 2 cm from the midline towards the right side of the lower labial mucosa and laterally 3 cm from the right corner of the mouth, anteriorly 1cm from the vermilion border and posteriorly 2 cm from the labial sulcus. The swelling was confined in relation to the right side lower labial mucosa opposite to 41, 42 region. The color of the mucosa appeared to have a bluish hue. No secondary changes such as any sinus opening seen. No ulceration over the swelling. On palpation, all inspeatory finding such as site, size, shape, extents were confirmed. The swelling was soft in consistency and fluctuant. Non tender. No reducability or compressibility seen. The swelling size remained same on palpation.



**Fig-1: Mucocele of The Lower Lip Right Side To The Midline**

Correlating the history of trauma and clinical findings, a provisional diagnosis of mucocele of the lower right labial mucosa was given. The patient was given an option of treating the mucocele with 940nm Diode laser (Biolase, USA). The patient was explained about the laser treatment and written consent form was taken before the procedure in both English and vernacular languages.

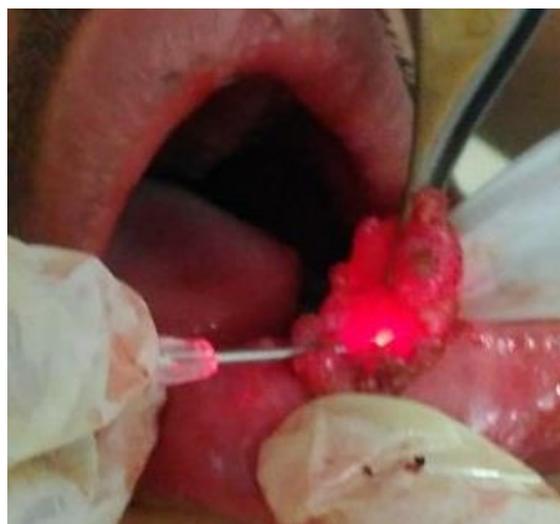
The patient, operator as well as the assistant wore protective eye glasses during the procedure. The swelling was laser excised along with the minor salivary gland with 940nm Diode laser (Biolase, USA) power setting of 1.5 watt, 615 joules using contact mode [FIG.2]. No topical or local anesthesia was administered. Throughout the procedure patient did not experience any pain and only minimal bleeding was observed. No suturing was done [FIG.3,4,5]. No analgesics or antibiotics were prescribed after the procedure. The excised lesion was then sent for histopathological analysis.



**Fig-2: Diode Laser Incision at The Edge Of The Lesion**



**Fig-3: Minor Salivary Gland Isolated Before Laser Excision**



**Fig-4: Diode Laser Excision Done**



**Fig-5: Immediately After Laser Excision**

The microscopic examination revealed parakeratinised stratified squamous epithelium with underlying connective tissue. The connective tissue showed a cavity with mucin pooled area and mucinophages. The cavity was lined by granulation tissue cell mainly composed of lymphocytes, mucinophages and plasma cells. The lesion was histologically diagnosed as mucocele of minor salivary gland.

The patient was called for review on the 1<sup>st</sup> day post operative, healing had initiated with no complications. Patient did not experience any discomfort or pain. Patient was recalled for review on the 7<sup>th</sup> [FIG.6], 14<sup>th</sup> day post operatively with satisfactory healing. The excised region had healed completely with no complication by the 21<sup>st</sup> day. The patient was then called for review at the 6<sup>th</sup> month as well as after a period of one year. No recurrence of the lesion was observed [FIG.7].



**Fig-6: One Week Healing After Excision**



**Fig-7: No Recurrence After One Year**

#### DISCUSSION AND CONCLUSION

In the presented case report, a male patient aged 19 years, was diagnosed clinically as mucocele of the lower lip and had undergone a surgical excision of the lesion with 940 nm of Diode laser which was then histopathologically confirmed as mucocele. During the procedure the patient did not experience any pain or discomfort and only minimal bleeding was observed. Post operative review was done right from the first day till the 2<sup>nd</sup> week. The patient did not complain of any discomfort post operative, no edema, with complete satisfactory healing by the 21<sup>st</sup> day. The patient was then recalled at the 6<sup>th</sup> month and after one year for review. No history of recurrence was observed.

Mucocele, a benign obstructive lesion of the minor salivary gland has been treated by many procedures including surgical excision, cryotherapy, marsupialisation, micromarsupialisation and very recently by laser ablation [6]. It has been observed that

these treatment modalities have their own challenges as well as post operative complications. It has been noticed that there has been recurrence of these lesions during marsupialisation, increased edema, prolonged healing time during cryotherapy and vaporization of the lesion by Nd: YAG laser were no tissue is available for histopathological confirmation [7-9].

In comparison to these above mentioned treatment modalities excision with Diode laser in the present case has been observed to be superior with no complications of recurrence after one year, minimal bleeding during procedure, no edema and with satisfactory healing after the procedure.

In accordance to the present case it can be concluded that Diode laser (940nm) can be a better treatment modality in the treating mucocele with no post operative complications.

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