

**MANAGEMENT OF LIP MUCOCELE – USING MICROSURGERY AND LASER****<sup>1</sup>Dr. Saket Kashyap and <sup>2</sup>Dr. Md. Zeeshan Arif**<sup>1</sup>Periodontist.<sup>2</sup>Oral and Maxillofacial Surgeon.

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**ABSTRACT**

Mucocele of the lip is one of the most common salivary gland pathology, presenting itself with soft tissue mass, often on the lower lip. The lesion is caused by extravasation or retention of mucous from the minor salivary gland, which may occur due to trauma or obstruction of the ducts of the salivary gland. Irrespective of the pathology, the management of the benign lesion mostly involves surgical removal of the mass. Due to the high recurrence rate, the involved salivary gland is also removed to prevent recurrence of the lesion. This case report presents the management of a mucocele lesion of the lower lip managed with a minimally invasive approach using microsurgery instruments and laser.

**KEYWORDS:** Mucocele, Aesthetic Dentistry, Minimally Invasive Surgery.**INTRODUCTION**

The term mucocele is derived from latin words, mucus and cocele means cavity. These are mucus-filled cavities, which may appear in the oral cavity, appendix, gallbladder, paranasal sinuses, and lacrimal sac.<sup>[1]</sup> Oral mucocele is a benign mass present mostly on the lower lip often as a result trauma or obstruction of the salivary duct. However, in many cases, history of trauma may not be present. Though rarely associated with systemic disorders, mucoceles has been observed in patient undergoing Anti-Retroviral therapy.<sup>[2]</sup> Mucocele, also known as the mucous extravasation cyst is a pseudo-cyst, without defined walls or linings and is formed due to the accumulation of mucous from an underlying salivary gland following trauma or injury.<sup>[3]</sup> The lower lip is the most commonly affected site, however, it has been observed at other sites in the oral cavity such as cheek tongue and palate. When present at the floor of the mouth, the condition is termed as ranula.<sup>[4,5]</sup>

The management of mucocele is based on accurate diagnosis and excision of the lesion. Before planning surgical procedure it is important that the lesion shall be differentiated from other similar conditions such as lipoma, irritation fibroma, oral hemangioma or benign or malignant neoplasm of the oral cavity.<sup>[3]</sup> The gold standard for a definite diagnosis involves a thorough history taking, clinical examination in conjunction with histopathological analysis. Also, a wide variety of clinical methods have been tried for the management of the lesion, which include surgical excision, marsupialization, use of lasers and electrocautery and steroid.<sup>[6]</sup>

This case report presents a case management of a patient with mucocele of lower lip, which was excised using laser and micro surgery.

**CASE PRESENTATION**

A 35 year old male patient reported to our practice with swelling on the lower lip. The patient reported the presence of swelling from 2 weeks. The patient also reported the intermittent nature of the swelling. Pain was not present; however, patient gave a history of burning sensation and ulceration at the offended site. On palpation, the lesion was soft and resilient measuring approximately 6mm in diameter (Fig 1a,1b). The lesion was located on the lower lip left of the midline, opposite to the left mandibular canine. The patient was informed about the treatment approach and written consent was taken.

The treatment plan involved a combined approach with use of microsurgery instruments and laser (Diode laser Indilase® 980nm) (Fig 2). The microsurgery blades were used for accurate and minimally invasive tissue manipulation to ensure a scar free uneventful healing. Laser assisted in control of haemorrhage as the lip is well supplied with capillaries and blood vessels and may bleed profusely during the procedure.

Patients vital were measured and patient was instructed to perform a pre procedural mouth rinse with 0.2% chlorhexidine mouthwash. The patients face and the surgical site were disinfected with povidone iodine. Local anaesthesia was administered by local infiltration of the anaesthetic solution around the lesion. After achieving profuse local anaesthesia of the surgical site,

the lower lips were everted and a superficial incision was made on the surface of the lesion (Fig 3). Under 3.5x magnification, an incision was made just enough to provide a purchase point for insertion of curved scissors for performing blunt dissection. Care has to be taken to ensure that the incision is not too deep to cause puncture of the mucus mass, which can make it difficult to identify and remove the minor salivary glands associated with the lesion. A blunt dissection was performed to separate the overlying epithelium from the underlying mucus mass. After the mucus mass was free from the overlying tissue, a diode laser was used to detach the mass from the underlying soft tissue attachment. This undermining helps in removal of the minor salivary gland and aid in prevention of recurrence of the lesion. Tissue tags were excised and the wound margins were

closed with multiple simple interrupted sutures (Fig 4-6). The mucus mass was sent stored in formalin solution and sent for histopathologic evaluation.

#### **HISTOPATHOLOGIC REPORT AND CLINICAL OUTCOME CLINICAL OUTCOMES**

Sutures were removed after 10 days and healing was observed. Healing of the site was uneventful. Patient did not report post-operative pain or discomfort. Recurrence of the lesion was not observed 1 month post operatively (Fig 7).

Histopathological analysis showed normal minor mucous salivary gland tissue with discontinuous excretory duct associated with fibrosis. Inflammatory cells, engorged capillaries and extravasated RBCs were present (Fig 8).



**Figure 1 a.**



**Figure 1 b.**

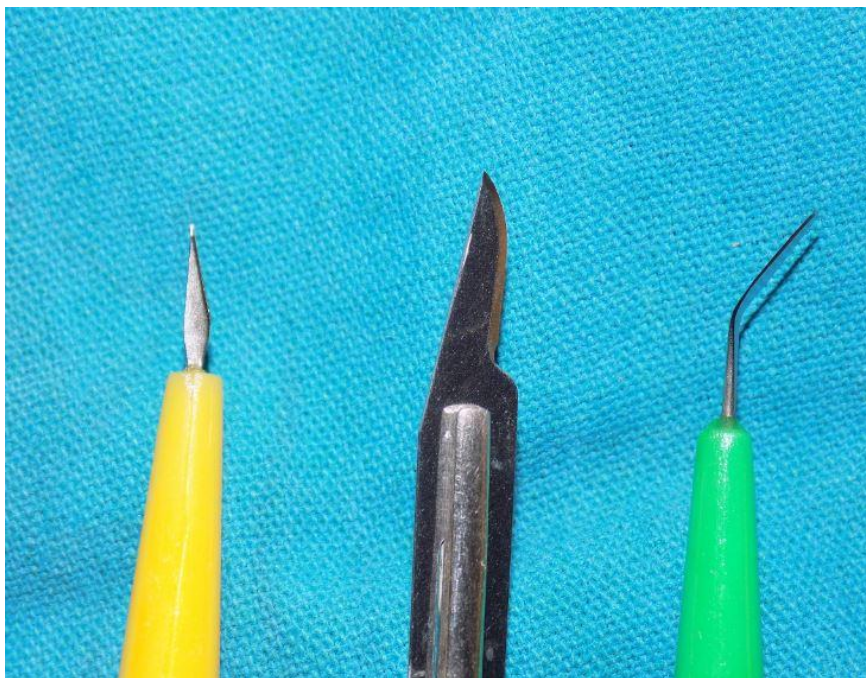


Figure 2.



Figure 3.



**Figure 4.**



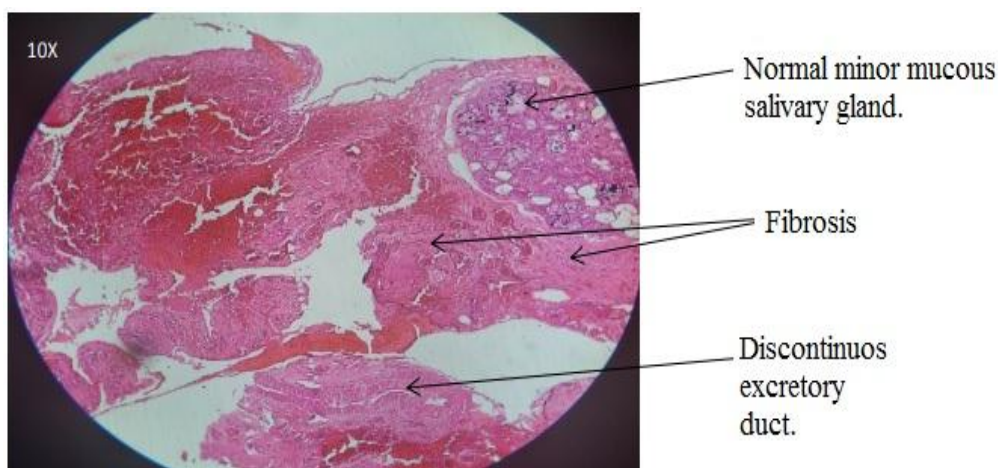
**Figure 5.**



**Figure 6.**



**Figure 7.**



**Figure 8.**

## DISCUSSION

Mucocele is a pseudocyst formed due to accumulation of mucus which occurs following trauma or obstruction of the salivary glands. The lower lip is the most commonly involved site and the lesion is self-limiting. Treatment of the lesion is fairly straight forward mostly involving the surgical removal of the mucus mass and the associated salivary gland, prevention of recurrence is the challenge more often faced by clinicians. Elimination of the traumatic etiology such as the use of thermoplasticised has been found to be effective in prevention of recurrence. Management of oral habits such as lip biting and thumb sucking has also been attributed to the etiology and cause of recurrence of the lesion.<sup>[5,7]</sup>

In this case report, a combination of laser and microsurgery blades were used for the surgical excision of the lesion. Micro surgery blades were used for making superficial incisions on the lesion to prevent rupture of the mucus mass. The diode laser was used in final excision of the mucus mass from the underlying tissue for quick excision and haemostatic properties.<sup>[8,9]</sup>

The conventional approach of management of mucocele involved a simple stab incision to drain out the mucus content. This approach provided an immediate relief with minimal healing time. However, removal of the accessory salivary gland is essential to prevent the lesion from recurring.<sup>[10,11]</sup>

The successful treatment of mucocele involves complete removal of the lesion of regular follow-up of the patients. Evaluation of traumatic local factors and prevention programs to intercept habits in children and adults can be beneficial in reducing the incidence of the lesion. Our patient was followed up for one month to evaluate recurrence of the lesion, however, a long term evaluation is essential to support any treatment approach particularly in lesions such as mucocele which has a high recurrence rate.

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