Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies *NLM ID: 101716117*

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr Indian Citation Index (ICI) Index Copernicus value = 100

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Case Report

Minimally Invasive Excellence: A Case Report On Laser- Assisted Mucocele Excision

Saladi Sai Durga Likhitha[1], Pallagani Bhanu Teja[2], Modugumudi Raveena[3], Mennem Amechitha[4], Navya Merugu[5], M. Swathi[6]

[1,2]Post Graduate Student, [6]Reader, Department of Oral Medicine and Radiology, St. Joseph Dental College, Duggirala, Eluru, Andhra Pradesh, India;
[3,4,5]BDS (Intern), St. Joseph Dental College, Duggirala, Eluru, Andhra Pradesh

ABSTRACT:
Mucocele is a common benign lesion of the oral cavity caused by trauma or obstruction of minor salivary gland ducts, leading to mucus accumulation. Clinically, they present as painless, soft, and translucent swellings, often other reactive or neoplastic lesions, such as fibromas. On the other hand, chronic lesions are caused by repeated irritation or trauma, are characterized by dense fibrous connective tissue proliferation. It can develop in areas such as the lacrimal sac, paranasal sinuses, oral cavity, appendix, or gall bladder and most commonly seen in the lower lip. This a case report of a female with Mucocele involving lower lip.
Key Words: excision, lower lip, minor salivary glands, mucocele, mucous cyst, laser excision, Extravasation, minimal invasive.

Received: 10 March, 2025 Accepted: 18 April, 2025 Published: 07 May, 2025

Corresponding Author: Pallagani Bhanu Teja, Post Graduate Student, Department of Oral Medicine and Radiology, St. Joseph Dental College, Duggirala, Eluru, Andhra Pradesh, India

This article may be cited as: Likhitha SSD, Teja PB, Raveena M, Amechitha M, Merugu N, Swathi M. Minimally Invasive Excellence: A Case Report On Laser- Assisted Mucocele Excision. J Adv Med Dent Scie Res 2025; 13(5):47-50.

INTRODUCTION

Mucocele or Mucoid cysts are defined as cavities filled with mucus that can appear in the oral mucous membrane and are benign tumoral diseases of the minor salivary glands. They most commonly occur in the labial mucosa. They can be caused by a break in the epithelium of the glands secreting saliva in the extra- glandular space and forming a pseudo cyst (extravasation mucoceles) or by a block in salivary flow due to an epithelial proliferation of the excretory duct forming salivary cyst (retention cyst).[1] Various therapeutic approaches can be used such Extravasation and Retention. Extravasation is the leakage of mucus from the excretory ducts or acini of the salivary glands in the tissue. This is the primary mechanism for formation of Mucoceles in the oral mucosa with trauma as an initiating factor. Retention which is much less frequent is the consequence of stenosis in the excretory ducts, responsible for ineffective expulsion of saliva leading to the dilation of the canals and surface swelling. [1,2] Mucocele often appear as soft, bluish, dome-shaped swellings and can fluctuate in size over time, sometimes spontaneously rupturing and recurring. It may resolve on their own, persistent or bothersome lesions typically require surgical intervention, such as complete excision of the cyst and associated gland tissue to prevent recurrence. Minimal invasive surgery with laser is a better option and leads to less pain, scarring, and muscle disruption. [2,3,4]

CASE REPORT

A 18-year-old female patient came to the Department of Oral Medicine and Radiology, St. Joseph Dental College, Duggirala, Eluru, with a chief complaint of growth in left lower lip region since 3 months. Patient gave history of lip bite in left corner of mouth 5 months agoThere is history of occasional lip biting habit, especially during period of stress or anxietyThere is history of occasional lip biting habit, especially during period of stress or anxiety.. Patient gave history of growth which is initially small in size and increased attain to present size. Patient gave history of discomfort while speaking and chewing food. The lesion ruptured on its own, releasing a clear, sticky fluid and then recur within a few days. There is

history of occasional lip biting habit, especially during period of stress or anxiety. There was no history of pain, bleeding, fever. Intra-oral examination revealed, on inspectary findings reveals A solitary dome-shaped growth with bluish hue in center, of size approximately 1 x 1 cm(Fig-2) seen involving left lower lip region extending antero- posteriorly 1cm away from the corner of the mouth to 5cm away from the left retromolar pad area superior-inferiorly 2cm away from vermillion border of lip and 2 cm from lower labial vestibule(Fig-1). Palpatory findings reveals that The lesion is non-tender, soft, fluctuant compressible, non-reducible. The fluctuation test was positive, confirming the presence of a fluid-filled cavity. Based on the above clinical findings, provisional diagnosis given as Mucocele involving lower labial mucosa. The differential diagnosis was given as Fibroma, Lipoma, Epidermoid cyst. Treatment plan was discussed with the patient and was advised to have a laser excision biopsy. A complete hemogram was performed, and all the values were in the normal range. An excisional biopsy was performed under local anesthesia in the lower labial mucosa (Fig-3), and the excised tissue was sent for histopathological analysis (Fig- 5). Histopathologic features shows non keratinized stratified squamous epithelium with retepeg formation. The underlying connective tissue is fibrovasular with fibroblasts, numerous endothelial lined blood capillaries filled with RBCs, mucin pooled areas surrounded by minor salivary glands. These features are suggestive of Mucocele. Based on the clinical and histological features, the final diagnosis is given as Mucocele involving lower labial mucosa.

Fig-1: Lesion involving lower labial mucosa

Fig-2: Showing size of the lesion

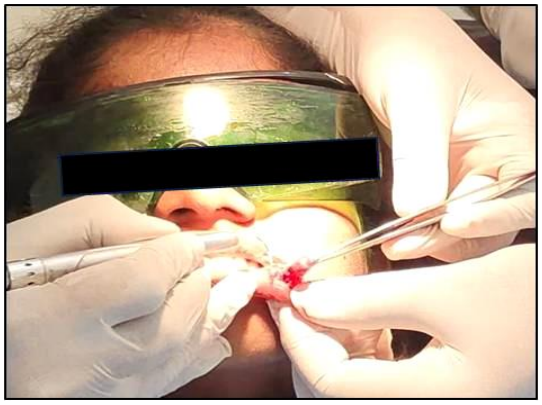

Fig-3: Laser diode excision of lesion

Fig-4: Site of lesion after post lesion excision

Fig-5: Excised tissue

Fig-6: Follow up after 30 days

DISCUSSION

Oral mucoceles, though benign, can significantly impact patient comfort and oral function, especially when they interfere with speech, mastication, or aesthetics. Traditional management through scalpel excision, while effective, often involves bleeding, discomfort, and a longer healing period. In recent years, diode laser excision has become a preferred modality in soft tissue oral surgery due to its many clinical advantages. The diode laser operates in a wavelength that allows for optimal absorption by soft tissue chromophores, facilitating effective tissue cutting with minimal collateral damage. Its ability to cauterize as it cuts significantly reduces bleeding, which enhances visibility during the procedure and contributes to a cleaner surgical field. This also leads to a reduction in post-operative edema and pain, enhancing the patient's overall experience and satisfaction. Furthermore, laser excision minimizes trauma to surrounding tissues and does not usually require sutures, making the procedure less invasive. Healing is often faster and smoother, with minimal scarring, which is particularly beneficial in areas with cosmetic significance such as the lips. Recurrence rates are lower with laser excision due to the complete removal of the lesion and sterilization of the surgical site during the procedure. These advantages underline the diode laser as an efficient and patient-friendly

option for the management of oral mucoceles.

CONCLUSION

Laser excision has emerged as a highly effective and patient-friendly technique for the treatment of oral mucoceles. This modern surgical method offers enhanced precision, significantly reducing intraoperative bleeding, post-operative pain, and overall recovery time compared to conventional approaches. One of the key advantages of laser technology lies in its ability to simultaneously excise and cauterize tissue. This not only minimizes the risk of recurrence but also promotes faster and more optimal healing. Moreover, the procedure is less invasive, preserving healthy surrounding tissues and resulting in minimal scarring—an important factor in achieving superior aesthetic outcomes. Overall, laser excision reflects significant advancements in oral soft tissue surgery. It underscores the growing role of laser technology in improving surgical efficiency, patient comfort, and long-term treatment success for those affected by mucoceles.

REFERENCES

1. Ghunawat DB, Marathe S, Thete SG, Chakraborty S, Lath H, Shehare NV, Laddha R. Mucocele: A Case Report. J Pharm Bioallied Sci. 2024 Jul;16(Suppl 3):S2962-S2964.
2. Nallasivam KU, Sudha BR. Oral mucocele: Review of literature and a case report. J Pharm Bioallied Sci. 2015 Aug;7(Suppl 2):S731-3.
3. Chaitanya P, Praveen D, Reddy M. Mucocele on Lower Lip: A Case Series. Indian Dermatol Online J. 2017 May-Jun;8(3):205-207.
4. Essaket S, Hakkou F, Chbicheb S. Mucocele of the oral mucous membrane. Pan Afr Med J. 2020 Apr 29;35:140. French.
5. Durga GV, Raju MS, Sree GY, Sri GJ, Mounika ID. Traumatic Fibroma Misdiagnosed As Mucocele: A Case Report. Int J Res Health Allied Sci 2024; 10(5):1-3.
6. Singh N, Chandra P, Agarwal S. Oral mucocele: A case report. J Dentofac Sci. 2014;3:47–50.
7. Seo Juliana, Bruno Ingrid, Artico Gabriela, Vechio Aluana dal, Migliari Dante A. Oral Mucocele of Unusual Size on the Buccal Mucosa: Clinical Presentation and Surgical Approach. The Open Dentistry Journal. 2012; 6:67–68.