JURNAL KEDOKTERAN DIPONEGORO
(*DIPONEGORO MEDICAL JOURNAL*)
Online : http://ejournal3.undip.ac.id/index.php/medico
E-ISSN : 2540-8844
DOI : 10.14710/dmj.v14i2.46230
JKD (DMJ), Volume 14, Number 2, March 2025 : 88-91

MANAGEMENT OF AN ORAL RANULA IN A HIV POSITIVE PATIENT: CASE REPORT

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Keywords:
Cyst,
HIV,,
Marsupialization,,
Ranula,
Salivary gland..

Received: 16 July 2024
Revised: 22 November 2024
Accepted: 19 December 2024
Available online: 11 February 2025

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ABSTRACT

Background: Ranula is a cyst resulting from obstruction of the major salivary gland which is a phenomenon of duct retention in the sublingual gland located at the floor of the mouth, resulting in swelling under the tongue and bluish. Ranula may occur in association with HIV. This article reports the management of ranula cases in HIV patients. **Case Presentation:** A 20-year-old male patient came with complaints of a lump under his tongue 1 month ago, often recurrence. The patient has a history of HIV. Extraoral examination showed a painless lump in the left submandibular region. On intraoral examination, it was found a translucent lump in the sublingual region, mobile, and painless. Diagnostic tests including OPG, thorax radiography, and MRI. Treatment was carried out by marsupialization under general anesthesia. **Conclussion:** Persistent chronic inflammation caused by HIV can lead to blockage of the small ducts, followed by distension that can lead to rupture of the ducts and extravasation of mucus into the surrounding tissue. The treatment was marsupialization under general anesthesia.

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INTRODUCTION

The oral cavity is often one of the earliest sites affected by HIV infection.[1,2] Salivary gland infiltrations are among the most frequently observed oral manifestations in HIV-positive individuals, with the parotid gland being the most commonly affected.[2–4] These infiltrations may occur as neoplastic or non-neoplastic conditions. Neoplastic examples include Kaposi's sarcoma and salivary gland lymphomas, while non-neoplastic conditions include benign lymphoepithelial lesions, diffuse infiltrative lymphocytosis syndrome, and parotid lymphadenopathy.[2,5]

Dentists need to develop strong skills in taking patient histories, as this plays a crucial role in achieving accurate diagnoses. When clinical suspicion arises, additional precautions are essential. Although the link between HIV and ranula remains poorly understood, studies have explored their potential association. Ranula, a condition affecting the salivary glands, serves as an example of oral diseases linked to this area.[5]

A ranula is a mucus extravasation cyst originating from the sublingual gland, classified as a type of mucocele located on the floor of the mouth.[1] It manifests as a swelling of connective tissue caused by the accumulation of mucin from a ruptured salivary gland, typically resulting from local trauma.[6] In cases where the ranula is small and asymptomatic, no further intervention may be required; however, surgical management may be necessary for symptomatic cases. Ranulas are categorized into two types: simple (intraoral) and plunging (cervical).[2,6,7] The simple ranula is confined to the floor of the mouth and, due to its characteristic appearance and location, is generally diagnosed through clinical examination.[5] Plunging ranulas often occur in children and adults between the ages of 8-21.5 years. In a study of 129 pediatric patients aged 3-16 years who experienced ranula plunging, 82 patients (63.57%) were male and 47 patients (36.43%) were female.

A study reported that the prevalence of ranula is in the range of 0.2% of 1000 patients.[8] The male-to-

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female ratio of ranula cases is reported as 1:1.4, with an age range spanning from 3 to 61 years. The prevalence of ranula associated with HIV infection is relatively low. In Zimbabwe, 5.1% of HIV-positive patients were found to have ranula.[5] Another study reported that 88.5% of 38 cases of ranula occurred in HIV-positive individuals. Similarly, a high prevalence of HIV-associated ranula has been observed in other studies, with 73.7% among 57 ranula cases and 63.7% among 113 referred cases of oral mucoceles. Despite variations in sample sizes, these findings consistently highlight a significant association between ranula and HIV positivity, although the majority of studies are from a single center.[5]

Although the pathogenesis of HIV-associated ranula remains unclear, several studies have explored the relationship between these two conditions. Clinicians should note that the age distribution of HIV-positive individuals closely parallels that of ranula patients, with most cases occurring in the second and third decades of life. Furthermore, the presence of oral white lesions is a strong indicator of an underlying immunocompromised state.[5] This case report highlights the importance of conducting a comprehensive clinical history and strictly adhering to universal precautions, particularly during surgical procedures.

CASE PRESENTATION

A 20-year-old male patient came with complaints of a lump under his tongue. The lump has been felt since 1 month ago, often recurrence. The patient has a history of Human Immunodeficiency Virus (HIV) and regularly takes Tenovofir Lamividine Dolutegravir. An extraoral examination showed a painless lump in the left submandibular region. On intraoral examination, it was found a translucent lump on the sublingual region, mobile, and painless. Diagnostic tests including panoramic radiography, thorax radiography, and MRI. Based on the history and clinical features a diagnosis of simple ranula was made.

The treatment plan decided for this case was marsupialization under general anesthesia. Before the procedure, the patient, operator, and assistant were prepared with universal precautions. The patient was positioned supine under general anesthesia. Prophylactic antibiotics were given with 2 grams of cefazolin. Asepsis was carried out at the surgical area both extraoral and intraorally using povidone-iodine and gauze. Injection of local anesthesia with lidocaine with epinephrin in the area where the incision will be made. An elliptical incision was then made on the mucosal surface of the floor of the mouth. A tissue specimen was obtained and sent for pathological examination. The edges of the incision were sutured to the margin of the mucosa with a continuous interlocking technique to keep the lesion open. Then gauze was inserted into the lesion. Patients were instructed to maintain gauze for up to 3 days postoperatively.

Figure 1. A. The patient presented with swelling in the left submental region. B. Mouth floor swelled

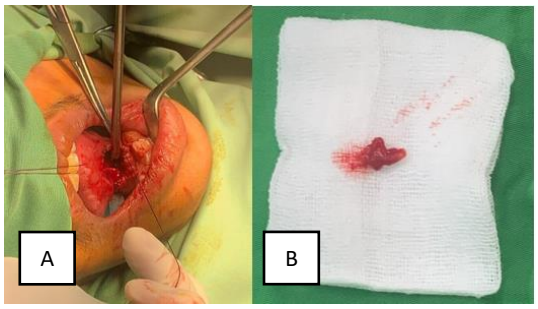

Figure 2. A. Durante op marsupialization of Ranula B. The rupture cyst of Ranula

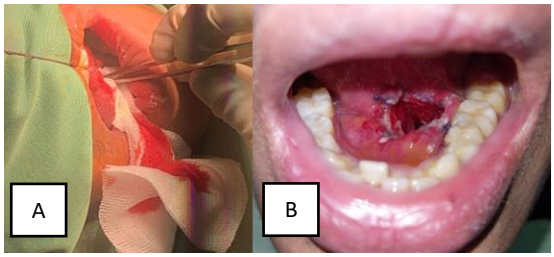

Figure 3. A. Addition of packing the entire cavity with gauze after its unroofing B. Control after 3 days

DISCUSSION

Ranula is a retention cyst, which is one of the oral manifestations associated with HIV infection.[6,9]

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These glands form due to extravasation of mucus from the sublingual glands, possibly caused by continuous saliva production due to duct obstruction.[9] Usually mucoceles or ranulas occur after trauma. However, there is no history of trauma in the current case or other studies that could explain the development of ranula.[5,7] Persistent chronic inflammation caused by HIV can lead to blockage of the small ducts, followed by distension that can lead to rupture of the ducts and extravasation of mucus into the surrounding tissue.[3]

Ranulas are classified into two types: simple (intraoral) and plunging (cervical).[6,7] Superficial (simple) ranulas are confined to the floor of the mouth. Due to their characteristic appearance and location, oral ranulas are typically diagnosed clinically. A temporary plunging ranula, located in the inframylohyoid region of the neck, may be mistaken for other causes of cervical swelling, particularly in the absence of an oral component.[5] In this case, the ranula was classified as a simple ranula because it was only found on the floor of the mouth, the extra-oral sublingual lump was suspected to be swollen lymph nodes due to the patient's systemic condition, namely HIV.

There are several methods for treating ranulas, with surgery being the most common.[5–7,10,11] Various treatment options have been proposed, including sclerotherapy with OK-432, marsupialization, incision and drainage, aspiration of cystic fluid, excision of the ranula alone, and excision of the sublingual gland with or without ranula excision.[7] Excision of the ranula is generally unnecessary, as it is not a true cyst. Attempting to excise the ranula along with the sublingual gland could place the lingual nerve and submandibular duct at increased risk due to the more invasive dissection required.[2,12] An alternative first-line treatment for oral ranulas is marsupialization, although recurrence rates tend to be higher.[11]

In this case, marsupialization was chosen as the preferred treatment option because it is a less invasive procedure compared to excision of the ranula and sublingual gland. The decision was based on the goal of preserving the functionality of the surrounding tissues, including the lingual nerve and submandibular duct, which could be damaged in more invasive surgical approaches. Additionally, marsupialization allows for the drainage of the cystic fluid, promoting healing while minimizing potential complications.[13] Although recurrence is a consideration, marsupialization provides a favorable balance between effective management and reduced surgical risk, making it a suitable choice for this HIV-positive patient.

Surgeons must follow universal precautions to ensure safety during surgeries. There is no reason to treat HIV-positive patients differently from others, as they deserve equal care and respect. Adhering to these standards ensures that all patients, regardless of HIV status, receive the appropriate treatment without discrimination.[5] Perioperative management and follow-up should be equivalent for patients with and without HIV presenting with ranula lesions.

The prognosis for this case after marsupialization is generally favorable. The procedure has a low recurrence rate when properly executed, especially with post-operative care and patient compliance. In HIV-positive individuals, the prognosis remains positive, though close monitoring is necessary due to potential immune suppression, which may increase the risk of recurrence. Regular follow-up visits are essential to ensure proper healing and early detection of any recurrence.[5]

CONCLUSION

Chronic inflammation caused by HIV can lead to the blockage of small ducts, resulting in distension and potential rupture, which allows mucus to extravasate into the surrounding tissue. In this case, treatment involved marsupialization under general anesthesia. Surgeons must follow universal precautions during surgeries and should not discriminate against HIV-positive patients with ranulas. Perioperative care and follow-up should be the same for all patients, regardless of HIV status.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

FUNDING

No specific funding was provided for this article.

AUTHOR CONTRIBUTIONS

Authorship must be limited to those who have contributed substantially to the work reported.

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