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Hepatitis and Its Association with Dentists on World Hepatitis Day

MANISHA SINGH^{*1}, HEMANT SAWHNEY², RICHA MISHRA¹, JAYANT KUMAR¹

INTRODUCTION

Hepatitis is an inflammatory disease of the liver. Hepatitis is of five clinical types - Hepatitis A, Hepatitis B, Hepatitis C, Hepatitis D, and Hepatitis E. Hepatitis B and Hepatitis C can cause severe liver disease because of liver cancer and cirrhosis of the liver.¹ Hepatitis is caused by viruses and non-infectious agents including alcohol, medications, and drugs. The transmission of the Hepatitis virus includes transfusion of blood, vertical transmission during pregnancy from mother to child, contaminated needles use, and unprotected sex.²

The symptoms of the liver disease are vomiting, nausea, fatigue, fever, malaise, jaundice, weight loss, and abdominal discomfort, hepatomegaly, angioedema. The oral manifestations of Hepatitis include petechiae, ecchymosis, hemorrhagic ulcers, color change in oral mucosa, and delayed healing. The oral manifestations are often seen associated with the signs and symptoms of liver disease.

Laboratory investigations that should be done for patients with Hepatitis infection include complete blood count, bleeding time, international normalized ratio, partial thromboplastin time, prothrombin time, serological tests for Hepatitis antigen, and antibody titers, liver function tests, and liver enzymes tests. Patients with Hepatitis infection recover after 3 months so only the emergency dental treatment is done for them. Ultrasonic scaling and the use of high-speed instruments are not recommended for patients with Hepatitis infection and instruments should be sterilized after use.

The World Health Organization reports 2 million injuries which result in 66,000 Hepatitis B infections among 335 million health care workers per year.³ These injuries can be due to sharp instruments and needle sticks. Dentists are exposed to contaminated aerosols, contaminated fluids, contaminated blood, and injuries due to sharp instruments. Dentists are more commonly affected by the Hepatitis B infection as they get more exposed to the patients with Hepatitis B. Hepatitis B

virus gets transmitted through the blood, saliva, gingival crevicular fluid,⁴ and blood-contaminated products from the infected person.

Dental professionals should be evaluated for antibody titers to reduce the risk of Hepatitis infection. Necessary measures should be taken to prevent the spread of the Hepatitis virus in the dental fraternity. Hand washing should be encouraged before and after the treatment along with the use of protective equipment such as gloves, eyewear, face mask and head caps. Disposable covers should be used for the dental X-ray light handles, sensors, and trays. Immunization against the Hepatitis infection is recommended for all dental professionals. Three doses of Hepatitis should be taken by all dental professionals for decreasing the spread of Hepatitis infection. All dental instruments should be sterilized, and sharp instruments should be handled carefully to prevent injury.

World Health Organization introduced post-exposure prophylaxis guidelines for occupational injuries to the dentist which will help in the prevention of infection.⁵ Dental professionals are supposed to clean the site of exposure with the water and test the patient for the antibodies against HBsAg. In case of a positive report of a Hepatitis infection in the patient, the exposed dentist should start with antiviral therapy. The nucleoside analogs (Lamivudine) and Fanciclovir are the treatment of choice for Hepatitis infection to decrease viral replication.

CONCLUSION

This short commentary will help in providing knowledge to the dental students and dental professionals regarding the prevention, and post-exposure prophylaxis with Hepatitis infection. Dental programs about Hepatitis B should be carried out among dentists to promote knowledge and safety measures for the prevention of Hepatitis infection. The organizations should provide treatment to the poor people with hepatitis infection to decrease the spread



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of new hepatitis infections and prevent death due to Hepatitis infection.

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Travel Guidelines, Isolation and Quarantine in Travel

RITIK SHARMA

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In this day and age, travelling is an essential part of humankind. However, Covid-19 is not over yet and travelling continues to be risky. Hence, World Health Organisation and Centers for Disease Control and Prevention (CDC) issue guidelines which everyone must follow during travel. From installation of hand sanitizers to wearing masks by everyone, Covid-19 has changed the world of travel.

KEYWORDS: Travel, WHO, CDC, COVID-19

INTRODUCTION

In December 2019, there was a sudden outburst of an inexplicable pneumonia. This outbreak was characterised by fever, dry cough, fatigue, and occasional gastrointestinal symptoms in Wuhan, Hubei, China. Moreover, this malady travelled to other nations like Thailand, Japan, Republic of Korea, Germany, United States, and Singapore. The first case of Covid-19 reported in India was on January 21st, 2020. Therefore, to cease spread of the cases of covid-19, The World Health Organisation (WHO) and Centers for Disease Control and Prevention (CDC) issued guidelines for travelling, which were focussed towards containing the spread of this disease.^{1,2}

Travel guidelines issued by the World Health Organisation (WHO)

It was on 30th January 2020 that the outbreak of novel corona virus Covid-19 was considered as Public Health Emergency of International Concern by the WHO Director General. As this was of international concern, the WHO recommended rules for travel and trade which are briefly explained as follows:

Measures to be followed before embarkation

- Communication, coordination and planning with competent authorities.
- The aircraft should be properly staffed with sufficient medical personnel with appropriate PPE and supplies to respond to an illness enroute.
- Temperature measurement and passengers to fill a questionnaire for early detection of symptoms.

Onboarding the aircraft

- The seat numbers of the passengers in the aircraft should be noted.
- In case of severe illness of a passenger, the crew should take the ill passenger to the medical personnel for treatment.
- Use of personal protective equipment when treating the patients.
- Adjacent seats should be kept empty, if possible.
- The information and contact details of the person who was in close vicinity with the unwell person should be recorded.
- Patient should maintain cough etiquette by sneezing into disposable tissues.
- Notifying appropriate health authority(ies) at the point of arrival.

Upon arrival of the aircraft

- Temperature screening alone may not be efficient because of the incubation period of the disease. Hence, temperature screening should be accompanied by health messages, primary questionnaire, data collection and analysis.

Travel guidelines by Centers for Disease Control and Prevention (CDC)

There are two types of situations in which people should not travel:

- People with known or suspected symptoms of Covid-19
- Individuals who have close contact with the exposed people.



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Prior to the Travel

- Always get information about the level of Covid-19 in the landing place.
- Travel should be planned keeping the restrictions of particular state or region which include wearing masks, vaccination certificate, test or quarantine requirements.
- Be ready for any situation as travel restrictions may change.

Patients are advised not to travel if they have tested positive, show symptoms or were in close contact with an exposed person or having a weak immune system.

During travel³

- People who are more than 2 years of age should wear proper masks in indoor public places or crowded places.
- People should follow rules to protect self and others from getting infected.

After travel

- First and foremost, get tested. If tested positive, one should isolate self to prevent others from getting infected.
- If one has recovered from Covid-19 in the past 90 days, one need not to get tested. However, if the person gets symptoms, isolate self immediately and get tested.

Isolation and Quarantine in Travel

According to CDC, Isolation and Quarantine helps to prevent spread of disease from the exposed people to unexposed ones.

Isolation: it separates exposed people from the people who are not sick.

Quarantine: separates and restricts the movement of people who were exposed to a contagious disease to see if they become sick.

Quarantine word was derived from the Italian word “*quaranta giorni*” which means 40 days. The practice of quarantine started during 14th century to protect the coastal cities from plague epidemics. Ships from Venice’s infected ports were asked to stay at the anchor for 40 days. After the establishment of United States, quarantine was introduced to prevent it from any foreign infectious disease. In the late 19th century, cholera outbreak from the Europe gave rise to the quarantine in 1892. The Public Health Act, 1944

established federal government’s quarantine authority for the first time.

Quarantine now

The Division of Global Migration and Quarantine is part of CDC’s National Center for Emerging and Zoonotic Infectious Diseases and headquartered in Atlanta. Quarantine stations are present in Anchorage, Atlanta, Boston, Chicago, Dallas, Detroit, El Paso, Honolulu, Houston, Los Angeles, Miami, Minneapolis, New York, Newark, Philadelphia, San Diego, San Francisco, San Juan, Seattle, and Washington, D.C.

The diseases that require quarantine are cholera, diphtheria, tuberculosis, Covid-19.

Many diseases like measles, mumps, rubella, chicken pox, do not require quarantine.

CONCLUSION

There are several contagious diseases like Covid-19 which are deadly. Thus, to control the spread of such diseases, every nation should have proper and restrictive guidelines. International bodies like World Health Organization and Centre for Disease Control and Prevention introduced rules to prevent both mortality and morbidity due to any disease.

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A Novel Modification of Semilunar Coronally Advanced Flap for the Treatment of Gingival Recession: A Case Report

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Recession of the gingival margin is still a common problem, with negative consequences for both aesthetics and periodontal health. Complete root coverage of gingival recession defects with periodontal plastic surgery is a necessity in this era where aesthetics are a top priority. Correction of mucogingival recession deformities has been described using a variety of periodontal plastic surgical procedures, each with varying degrees of success. The goal of this case report is to describe how a semilunar coronally advanced flap was modified to treat gingival recession in the maxillary anterior tooth.

KEYWORDS: Recession, Perioplastic Surgery, Coronally Advanced Flap

INTRODUCTION

A number of periodontal plastic surgery procedures for the correction and management of mucogingival deformities and defects have been described, with varying degrees of success.¹ Friedman defines mucogingival surgery as "surgical procedures performed to correct relationships between gingiva and oral mucosa." Periodontal plastic surgery is defined as surgical procedures performed to correct or eliminate anatomic, developmental, or traumatic deformities of the gingiva by the 1996 World Workshop in Clinical Periodontics.²

Gingival recession is defined as exposure of the tooth by the apical migration of the gingiva.³ It is a common problem faced by dental patients. Gingival recession is the result of supragingival and subgingival calculus, aggressive tooth brushing, improper flossing technique, high frenal attachment, position of tooth in the arch, excessive orthodontic forces and iatrogenic causes such as crown preparation. Other causes include inadequate width of attached gingiva, prominent roots & trauma from occlusion.^{4,5}

Due to root exposure, recession causes unsightly aesthetics and can lead to root caries and dentinal hypersensitivity.⁶ Mucogingival recession deformities can be corrected with a variety of periodontal plastic surgical procedures each demonstrating a variable degree of success. The different root coverage procedures are free gingival autograft, free C/T autograft, pedicle autograft such as a laterally positioned flap and coronally positioned flap - semilunar pedicle (Tarnow), sub-epithelial C/T graft (Langer), guided tissue regeneration, and the Pouch

and Tunnel technique. The different pedicle grafts are rotational flaps like the laterally positioned, double papilla, and transpositional flap, and advanced flaps like coronally advanced flap and semilunar flap.⁷

The advantage of pedicle over free soft tissue grafts is the retention of flap vascularity. Pedicle flaps, whether probably advanced or laterally rotated, can be carried out by either a partial-thickness, full thickness, or combination dissection. Partial- or split thickness flaps with periosteal and connective tissue retention have been shown to cause less resorption of the underlying alveolar bone.

The coronally advanced flap along with connective tissue graft has demonstrated highest rate of success for complete root coverage.⁸ However, the coronally advanced flap approach may result in shallowing of the vestibule and scarring of the vertical incisions.⁵ Additionally, the association with CTG requires a second surgical area and increases the surgical time as well as the technical difficulty of the approach.⁹ Other surgical approaches have been proposed to obtain root coverage with simplified techniques, such as the semilunar coronally advanced flap described by Tarnow.¹⁰

Treating gingival recession is a challenge for the general dental practitioner in today's practise. The purpose of this case report is to demonstrate the feasibility and ease of performing a semilunar coronally repositioned flap procedure in the case of maxillary class I gingival recession, as well as its long-term benefits.



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CASE REPORT

A 38-year-old male patient reported to the Department of Periodontics with a chief complaint of receded gums with respect to upper left front tooth. Medical history and family history was non- contributory. There was no history of trauma. Patient did not report of any deleterious oral habits. On eliciting the oral hygiene habits, patient revealed that he was using a hard toothbrush and horizontal brushing technique. He did not use any interdental aids.

On soft tissue examination, a thick gingival biotype with an adequate amount of keratinized gingiva was present. Millers Class I gingival recession with a depth of 2 mm was diagnosed as the gingival defect on 22.

The patient showed good plaque control and tissues showed no signs of inflammation. Modification of patient's brushing technique to modified Stillman's technique with a soft toothbrush was suggested. Root coverage procedure in relation to 22 was planned one week later. All the blood reports were within the normal range.

A modified semilunar coronally advanced flap technique was planned. Before the commencement of the surgical procedure he patient was instructed to rinse his mouth with chlorhexidine mouthwash (0.2%). Pre-operative photographs were taken (figure 1). A stent was used to measure the relative attachment level. Extra-oral disinfection was performed using 2% betadine. The surgical area was anesthetized using local anesthetic agent (lignocaine 2% with epinephrine 1:100,000).

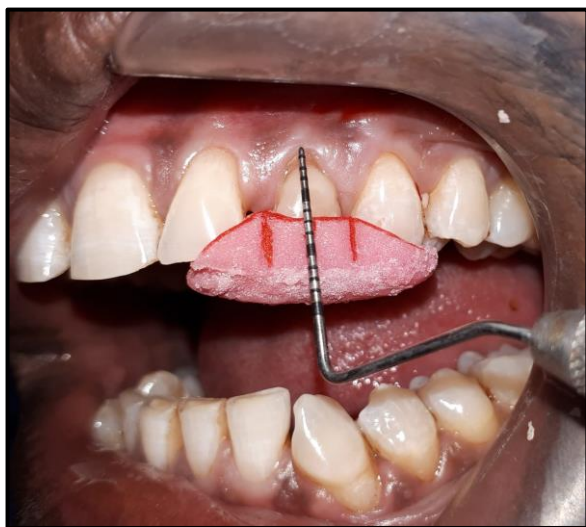


Figure 1. Pre-operative pic showing the gingival recession.

Following careful debridement of exposed root surface, a semilunar incision was given using No.15C BP blade from gingival margin in such a way that the outline of the incision is parallel to the curvature of the gingival margin (figures 2 & 3). The most apical extent of the arc of the incision was typically located in the mucosa. The incision was extended into the papilla region on each side of the tooth, but with a broad base of anchorage for adequate blood supply for the graft. An intracrevicular incision was given extending apically to the level of the semilunar incision and soft tissue graft was coronally repositioned to the level of the CEJ (figure 4). Sutures were placed on the papillary area to ensure adequate adaptation and better stabilization of the flap (figure 5).



Figure 2. Incision using No. 15C BP blade

After the procedure patient was advised to take analgesics for 3 days. He was advised to take soft diet and not to brush on the surgical site. During this period, plaque control was achieved with 0.12% chlorhexidine solution mouthrinse used twice a day. Patient was recalled after 7 days for suture removal (figure 6). On one week follow-up healing was found to be satisfactory.



Figure 3. Semilunar incisions placed.

On further follow up visit after one month, a 100 percent increase in relative attachment level was observed (figure 7). There was no any recurrence of recession on any of the follow up visits. On the recall visit, oral hygiene instructions were reinforced.



Figure 4. Intracrevicular incision given.

DISCUSSION

The changing face of dentistry has ushered in a new era where the present-day aim is to have a healthy and aesthetically pleasing dentition. Thus, esthetics has become an essential criterion of the overall treatment plan in dentistry, which comprises a healthy and beautiful smile at any age.¹¹ Gingival recession is of great esthetic concern associated with periodontal disease. Coronally advanced flap is one of the most reliable techniques for treatment of single recession defects, and different surgical flap designs have been proposed over time increasing the possibility of achieving root coverage.¹²



Figure 5. Sutures placed.

Semilunar coronally repositioned flap is one of the definitive, least invasive, and conservative one-stage

periodontal plastic surgical procedure. Technique was introduced by Tarnow. He described Coronal repositioning of the semilunar incision parallel to the free gingival margin of the facial tissue over the denuded root.¹¹



Figure 6. Suture removal

The modified semilunar coronally repositioned flap was first described by Kamran Haghighat in 2006.¹³ It also has the advantage of requiring a smaller surgical site with no vestibule shortening, as well as improved coronal mobility and stability of the repositioned flap. This technique allows for more control over flap repositioning and reduces apical tissue retraction while attempting to cover the root.⁷

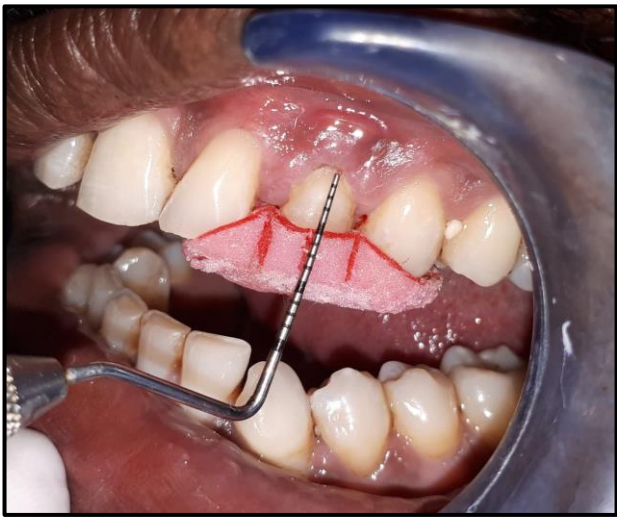


Figure 7. One month post-operative

The amount of recession coverage as measured by measuring the distance between the cemento enamel junction and the gingival margin is considered the primary outcome variable for the therapeutic endpoint

of success for root coverage procedures.⁷ This case report describes a one-month follow-up of a case in which a modified semilunar coronally advanced flap was used to treat a maxillary anterior tooth. The semilunar coronally advanced flap can be sutured through the midline papilla to stabilise the mobilised pedicle and, as a result, the marginal tissues in the desired location.¹³

One-month follow-up showed that the roots have been completely covered. The success of this technique is contingent on proper case selection, modification of patients' oral hygiene habits, and patience for recall visits.¹⁴ This case report also supports the literature by demonstrating that the modified semilunar coronally repositioned flap can be performed in a simple dental surgical setting with minimal post-operative complications using only the most basic instruments. The technique's greatest shortcoming is that it can't produce root coverage exceeding 2-3 mm. This technique can be successfully used to manage isolated gingival defects in maxillary teeth, as well as patients who have sensitive teeth due to exposed dentine as a result of gingival recession.¹⁵ It has no notable variation in technique from subepithelial connective tissue graft in terms of gaining coronal displacement of marginal gingiva.

Modified coronally repositioned flap technique is not time consuming and does not require high level of expertise unlike the other periodontal plastic surgeries. In the present case gingival aesthetics was improved and successful correction of recession was obtained.

CONCLUSION

The modified semilunar coronally advanced flap used in the present case is an uncomplicated technique which provides satisfactory results for treating Millers Class I and II gingival recession defects in the anterior region. When the case is properly selected and the procedure is performed correctly, this method can successfully treat teeth with narrow gingival defects.

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Ciprofloxacin Associated Renal Issue: A Case Report

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Ciprofloxacin is a very commonly prescribed antibiotic with a wide range of associated adverse events. Cases of renal issues have been reported in literature. We describe a case of an elderly male who suffered from renal insufficiency probably related to ciprofloxacin administered for Pseudomonas infection. Serum therapy was initiated and culprit drug was replaced resulting in satisfactory improvement.

KEYWORDS: Ciprofloxacin, Renal Insufficiency, Acute Renal Failure

INTRODUCTION

Ciprofloxacin is a quinolone that is used extensively in clinical practice. The most common adverse effects are gastrointestinal disorders and conditions of the central nervous system.^{1,2} Renal insufficiency secondary to this drug is listed as a rare adverse effect. Several cases of renal insufficiency have been reported in the literature due to interstitial nephritis^{3,4} and also due to precipitation of kidney crystals.⁵⁻¹⁰ We report the case of renal insufficiency in an elderly male with no relevant history of drug allergy.

CASE REPORT

The patient was a 69-year-old male, an ex-smoker and with no drug allergies. His medical history showed arterial hypertension, type 2 diabetes, chronic renal insufficiency, and severe COPD with multiple admissions. His background therapy included warfarin, pravastatin, azithromycin, paracetamol, amiodarone, furosemide, enalapril, bisoprolol, hydralazine, and calcium/vitamin D₃. The patient had been seen several times in the past year due to COPD. The patient was admitted due to HF decompensation and a 4-day course of low-grade fever. Blood cultures were performed and were negative, and given increased expectoration and changes in purulence, a sputum test was carried out, which was positive for Pseudomonas aeruginosa. Given this first isolation and clinical stability, treatment with ciprofloxacin 750 mg every 12 hours for 21 days was started, and the patient was discharged the day after treatment was started. Upon discharge, no other new treatment was started, and the patient followed his background medication. After

nine days, the patient returned due to clinical worsening. Lab tests showed: urea 103 mg/dL, creatinine 4.70 mg/dL, estimated glomerular filtration by CKP-EPI (GFR) < 15 mL/min/1.73 m², C-reactive protein 0.71mg/dL, and hemoglobin 10 g/dL, with the remaining values within the normal range. The previous lab tests showed urea 27.4 mg/dL, creatinine 1.02 mg/dL and estimated GFR 71 mL/min/1.73 m². As acute renal insufficiency with renal failure was suspected a renal ultrasound was performed, which ruled out an obstructive cause, and a urine sediment test, which was normal, with pH 8. For this reason, it was decided to admit the patient and start serum therapy initiated with bladder catheterization and close monitoring of diuresis. As it was suspected that ciprofloxacin was the cause of renal insufficiency, it was decided to stop the antibiotic and continue treatment with intravenous ceftazidime. The patient's progress was satisfactory, and within 10 days the laboratory values had almost returned to normal, with urea 76.6 mg/dL, creatinine 1.25 mg/dL and GFR 56 mL/min/1.73 m².

DISCUSSION

Acute community-acquired renal insufficiency is caused in 70% of cases by pre-renal causes and in 17% of cases due to obstructive causes.¹² The most common cases of acute renal insufficiency occur due to renal hypoperfusion and toxic causes, such as antibiotics and iodinated contrasts. Ciprofloxacin may cause acute renal insufficiency. Cases of acute IN have been reported as caused by ciprofloxacin^{3,4} with this being



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the main etiology of renal insufficiency by this drug. It has been reported in both patients with drug overdoses¹² as well as in patients using normal therapeutic doses. Interstitial nephritis is often caused by drugs such as antibiotics and nonsteroidal anti-inflammatory drugs, and is characterized by a skin rash, eosinophilia, and eosinophiluria, with these findings being inconsistent; however, if they are present, they support the diagnosis. Histological confirmation by means of renal biopsy shows interstitial inflammatory infiltrate that, rather than a toxic effect, is thought to be due to an immunoallergic process. Another less common cause of ciprofloxacin-induced renal insufficiency is crystal nephropathy. It is associated with renal insufficiency with elevated creatinine and urea values, with no oliguria or laboratory results showing rhabdomyolysis. The presence of urinary acidification has been reported in affected patients. Crystals can be identified both in the histology and urinary sediment. The treatment used to reverse this condition is drug discontinuation and the start of conservative treatment with serum therapy; in most cases this resolves the condition and values return to baseline laboratory values between the first and second week. The case herein shows increased creatinine and urea values without eosinophilia, with maintained diuresis. Crystals in urine sediment were not observed and nor could they be histologically verified; however due to urine alkalosis, and due to clinical and analytical evolution, this case is consistent with the few cases in the literature of renal insufficiency secondary to precipitation of ciprofloxacin crystals.

CONCLUSION

Commonly prescribed drugs can also lead to renal insufficiency. These adverse events may be precipitated by underlying conditions and factors like age and lifestyle. In such scenarios, it is important to carry out relevant tests and investigations timely to avoid major complications.

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Mucocele: A Case Report

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Mucocele is a common benign lesion in the oral cavity. It is caused by the excess of mucous secretion as a result of injury and lip biting habits or any abnormalities of minor salivary glands. Mucoceles are generally painless but can cause discomfort to the patients while eating and speaking. Mucoceles are mainly diagnosed with the help of clinical features. Very few mucoceles resolve without any treatment, but majority of mucoceles are surgically removed. The right management can remove mucoceles without causing any side effects. It is important for a practitioner to diagnose oral lesions such as mucocele and provide the right treatment. This paper describes a case of mucocele that has been surgically treated.

KEYWORDS: Lower Lip, Mucous, Salivary Gland, Mucocele

INTRODUCTION

The term “Mucocele” is a Latin derivative. “Mouco” means mucus and “Coele” means cavity. They are “cavities filled with mucus that are most commonly located in the mouth, lacrimal sac and paranasal sinuses.¹

Mucocele is the most prevalent minor salivary gland condition. They are the second most frequent benign soft tissue tumor of the oral cavity, the first being irritation fibromas.²

ETIOLOGY

Damaged or an obstructed salivary gland can result in mucocele formation. There are numerous salivary glands in the oral cavity. Saliva consists of three main components : water, mucus and enzymes. Saliva is transported from the salivary glands to the oral cavity via small tubes, known as ducts. When one of these ducts is injured, it causes accumulation of saliva at the injured site resulting in a swelling or a mucocele.

A mucocele can sometimes be formed around lip or tongue piercings. Intake of few medications can cause thickened saliva, which may clog a salivary gland and form a mucocele.³

CLASSIFICATION

Mucocele can be classified into two types:

- Mucus extravasation
- Mucus retention

Mucus extravasation:

- Most commonly seen in minor salivary glands.

- Occurs when fluid leaks from injured salivary gland ducts and acini into the adjacent soft tissues.
- Incidence: 90%

Mucus retention:

- Commonly occurs in major salivary glands.
- Due to the obstruction of salivary gland ducts.
- Incidence: 10%

There is no clinical difference between mucus extravasation and mucus retention.⁴

HISTOLOGY

Epithelial lining is missing in mucus extravasation cyst, hence have resemblance to pseudocyst. It is created by a mucus pool and granulation tissue surrounding it. However, mucus retention cyst is lined by epithelium, hence it's a true cyst.⁵

CLINICAL FEATURES

Mucocele is semi-transparent and resilient, with a diameter ranging from a few millimeters to centimeters. They are bluish, soft and transparent cystic swelling that usually regresses on their own. The blue color is caused by vascular congestion, tissue cyanosis, and fluid collection below. The color of the lesion, however, might vary depending on its size, proximity to the surface, and the flexibility of the surrounding tissue.⁶

When pressure is exerted to mucoceles, they do not change color. If a patient presents with a blue swelling that has resemblance to mucocele, the dentist must



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apply pressure on it during the intra oral examination and observe the color changes. A change in color may indicate a harmless growth composed of blood vessels. This may be diagnosed as hemangioma.

Mucocele often do not have any symptoms, unless they interfere with speech, chewing or swallowing.⁷

LOCATION

Extravasation mucoceles are most commonly present on the lower lip due to biting habit, followed by tongue, buccal mucosa and palate. They are infrequently seen in retromolar region and posterior dorsal part of the tongue. Retention mucoceles may be present in any sites of the oral cavity. When a mucocele is found in the floor of the mouth, it resembles the underbelly of a frog, therefore the name ranula. Mucocele which is seen on the gums is known as epulis.⁸

This article presents a case of mucus extravasation mucocele which was present on the inner aspect of the lower lip.

CASE REPORT

A female patient aged 17 years reported to the Department of Periodontics with a complaint of painless swelling in the inner aspect of the lower lip since 2 months. The swelling was initially small which has gradually increased to the present size. No history of trauma was reported by the patient. There was no significant dental and medical history. Extra-oral examination did not show any presence of swelling or palpable lymph nodes. On intra oral examination, the lesion was present in the inner aspect of the lower lip in 42,43 region (figure 1).



Figure 1. Pre-operative: Lesion on the lower lip

On examination of the lesion, it was found to be solitary, smooth, well defined, soft fluctuant and palpable measuring about 12 X 8 mm (Figure 2 & 3).



Figure 2. Measurement of the lesion

There was no rise in the temperature and it was round in shape with a bluish translucent hue.



Figure 3. Measurement of the lesion

Based on the clinical findings, provisional diagnosis was given as mucocele. Blood investigations were performed and it was within the normal limits. After administering adequate local anesthesia, superficial incision was placed over the lesion involving the superficial layers (Figure 4&5).



Figure 4. Incision



Figure 5. Exposure of the Lesion

The lesion was excised after the separation of the tissue (Figure 6).



Figure 6. Excised Lesion

The excised tissue was then sent for histopathological analysis to confirm the diagnosis. Intermittent sutures were placed after irrigation of the surgical site (figure 7). Post-operative instructions were given to the patient and analgesics were prescribed.



Figure 7. Sutures placed

HISTOPATHOLOGICAL REPORT

The H&E stained section showed stratified squamous non-keratinized epithelium overlying lesional tissue.

The tissue consisted of cystic space with scanty eosinophilic mucous substance. The cystine lining was made of capsule and granulation tissue with numerous blood vessels and few inflammatory cells. Few ducts and cross-sections of mucous salivary glands were also noted. All these features were suggestive of mucous extravasation cyst.

The patient was recalled after one week for suture removal and the healing was found to be satisfactory (figure 8). Follow up was done after one month and complete healing was observed and no recurrence of the lesion was observed.



Figure 8. One-Week Post- Operative Picture

DISCUSSION

A mucocele also known as mucous cyst is a mucus-filled cystic lesion of the minor salivary glands in the oral cavity. The exact mechanism by which a mucocele forms is not yet clearly understood.⁹ However, Yamasoba et al. identified two etiological aspects in formation of mucocele: trauma and constriction of salivary gland ducts.¹⁰

Menta et al. along with Yamasoba et al. and Oliveira et al. stated that more than 65% of their patients with mucoceles were under the age of 20 years.^{11,10,12} The patient presented in our case report was 17 years old.

The mucocele is most commonly found on the lateral part of the lower lip.¹³ Lip consists of adipose, connective tissue, nerves, blood vessels and salivary glands. Therefore, injury to any of the tissues may result in swelling in the lips.¹⁴

A mucus cyst appears as a prominent, fluctuant and painless enlargement of the mucosa. About 75% of lesions are less than 1 cm in diameter; however, the size

can vary from a few millimeters to several centimeters on rare occasions.⁴ Our patient had a lesion measuring 12 X 8mm. Superficial lesions have a bluish to transparent hue, however deep lesions have typical mucosal color and bleeding into the swelling can make it appear bright red and vascular.¹⁵

Out of the two types of mucocoeles, our clinical and histopathological findings confirmed the diagnosis of mucus extravasation cyst. In extravasation type, fluid leaks from the ducts or acini in to the surrounding tissue. They are mostly found near the site of accessory salivary glands and are rarely exceeds 1.5 cm in diameter.¹⁶

Lip swelling can be caused due to various conditions like mucocoele, lipoma, mucus retention cyst, sialolith, phlebolith, and salivary gland tumor. However, these can be differentiated from mucocoele based on their clinical findings, colour, consistency, etiology, and their area of occurrence.¹⁴ Palpation of the lesion can also aid in correct differential diagnosis. Cysts, mucocoeles, abscesses, and hemangiomas present with fluctuation, whereas lipomas and tumors of small salivary glands do not fluctuate.¹⁷

A mucocoele does not always go away without therapy. However, if some mucocoeles go untreated, they can result in scar formation. A thorough intra oral examination is mandatory for the dentist to rule out the presence of any swelling. Surgery is frequently used to remove mucocoeles. A scalpel or laser is usually preferred. The removed mucocoele tissue is send to laboratory for further analysis. There is chance of recurrence after the removal of mucocoele. Before attempting a surgical therapy, doctors can employ corticosteroid injections. These injections can sometimes reduce edema, which reduces the need for surgery.

Our case was managed by simple surgical excision of the lesion and removal of the mucosa around the lesion and glandular tissue beneath the muscle layer. Alternative treatment options include marsupialization, dissection, cryosurgery, carbon dioxide lasers, electrocautery, intralesional injection of sclerosing agent OK 432 and cryotherapy.¹⁸

CONCLUSION

Mucocoele is a commonly occurring benign lesion which is self-limiting and can cause distress and anxiety to the patient. Trauma is one of the most common causes of

mucocoele. The diagnosis of mucocoele is based on the history, clinical features, definitive diagnosis and histopathological investigation. The treatment of mucocoele is challenging since the rate of recurrence is high. If it is left untreated, they can cause scar formation, or increase in size which will interfere with mastication. Mucocoele of smaller size does not require any treatment and may regress on its own. However, a surgical excision may be required for those of the larger size. In this case, a simple surgical excision was carried out to achieve successful results.

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Complications of Third Molar Extraction done by BDS Interns under Supervision in a Dental College in Central India

MUJEEB BISWAS¹, ROHIT PUNIA², ANAM KHAN²

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INTRODUCTION: Third molar is the most commonly observed impacted tooth in the oral cavity, with a higher prevalence among mandibular teeth.
AIM: To assess the Complications of Third Molar Extraction done by BDS Interns under Supervision in a Dental College in Central India.
MATERIALS AND METHOD: This cross-sectional study was conducted over a period of three years. BDS interns between the years 2016-2018 posted in the department of oral surgery were observed while doing third molar extractions under supervision. All patients underwent standard surgical protocol. Routine follow-up was done after one week and suture was removed. Complications, if any were noted down by the faculty and appropriate management of the same was done by the OPD incharge. Patients not available for follow up were excluded from the analysis. Data was analyzed using SPSS version 23.0. and the student's independent samples t-test was applied to find out associations between the complications.
RESULTS: A total of 1368 patients were included and a total of 2369 third molars were extracted with a majority of the teeth being in the mandibular region (69.8%). Males (62.5%) formed a majority of the population. The most common intra-operative complication was Swelling/pain/ trismus (36.8%) followed by dry socket (14.9%). Whereas the most common intra-operative complication was soft tissue injury (1.9%) followed by bleeding at the extraction site (1.8%). Both soft tissue injury ($p=0.02$) and swelling/pain/trismus ($p=0.03$) were found to be significant.
CONCLUSION: The low percentages of intra-operative and post-operative complications among interns indicate adherence to proper exodontia protocols.

KEYWORDS: Third Molar, Extraction, Dentists

INTRODUCTION

It has been extensively reported in the literature that the third molar is the most commonly observed impacted tooth in the oral cavity, with a higher prevalence among mandibular teeth.¹ For oral and maxillofacial surgeons, the extraction of third molars is the most commonly performed procedure.² Due to the expertise, most surgeries do have any complication, but due to certain factors, complications can range from 4.6 to 30.9%.³

Every dentist was a student once and it was his teachers who corrected them on the mistakes done in the dental college. However, even while under supervision, these students tend to make mistakes due to a lack of experience.

Surgical complications can be classified as Minor or Major. Minor complications are generally defined as complications which recover without any further treatment. In major complications, further treatment is advised and may result in irreversible consequences.⁴

Complications related to third molar surgery can also

be classified as intraoperative or post- operative. Intra-operative complications include injury to surrounding soft tissue, damage to adjacent tooth, restoration, bleeding from the socket, dislodgement of tooth or tooth pieces into adjacent potential spaces, fracture of tooth, root –alveolar bone-maxillary tuberosity-mandible. In post-operative complications, patients may experience trismus, pain, rebound bleeding, pain, swelling, dry socket, infections, osteomyelitis sensory alterations of inferior alveolar nerve (IAN) or lingual nerve (LN).

Although impacted third molars may remain symptom-free indefinitely, they may be responsible for significant pathology.⁵ Factors thought to influence the incidence of complications after third molar removal include age, gender, medical history, oral contraceptives, presence of pericoronitis, poor oral hygiene, smoking, type of impaction, relationship of third molar to the inferior alveolar nerve, surgical time, surgical technique, surgeon experience, use of perioperative antibiotics, use of topical antiseptics, use of intra-socket medications, and anesthetic technique.⁶



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Irrespective of the various advancements in surgical dentistry, dental students need to gain considerable experience under supervision so there are no complications in their independent private practice. Hence, the present study was undertaken to assess the Complications of Third Molar Extraction done by BDS Interns under Supervision in a Dental College in Central India.

MATERIALS AND METHOD

This cross-sectional study was conducted over a period of three years. BDS interns between the years 2016-2018 posted in the department of oral surgery were observed while doing third molar extractions under supervision. These students had prior experience of extraction of teeth (except third molars) in their final year. During internship, they were first asked to assist atleast three staff/PG students in third molar extractions and then were permitted to do third molar extractions under direct supervision of the faculty incharge who noted all complications in a standardized proforma. To eliminate bias, the intern as well as the patient was blinded to this evaluation. All evaluating faculty were duly standardized prior to the start of the study.

All patients underwent standard surgical protocol. Patients with medical conditions like hypertensive, diabetic, kidney disease and other medical condition patients were consulted with their respective medical doctors, proper investigations were done. All needful precautions were taken and necessary local-haemostatic measures were used to control bleeding in needful conditions. In the majority of the cases Ward's incision were given, mucoperiosteal flap raised, bone guttering done and tooth resection were done in needed conditions using surgical drills. Elevators and forceps were used as per requirements. Once the surgical procedure was completed, the socket was irrigated using betadine and normal saline. The socket was packed using local haemostatic agent and sutured with black braided silk suture. Following the procedure, detailed postoperative instructions were given to the patients and suitable antibiotics and analgesics were prescribed.

Routine follow-up was done after one week and suture was removed. Complications, if any were noted down by the faculty and appropriate management of the same was done by the OPD incharge. Patients not available for follow up were excluded from the analysis. Data was analyzed using

SPSS version 23.0. and the student's independent samples t-test was applied to find out associations between the complications.

RESULTS

In the present study, a total of 1368 patients were included and a total of 2369 third molars were extracted with a majority of the teeth being in the mandibular region (n-1655, 69.8%). Males (62.5%) formed a majority of the population in the present study. A majority of the patients belonged to the age group of 25-34 years (51.4%). The most common reason of extraction was the buccal eruption of the third molar (39.7%) (Table 1).

CHARACTERISTIC	N (%)
Gender (n=1368)	
Male	855(62.5)
Female	513(37.5)
Age Range in Years	
15-24	386 (28.2)
25-34	703(51.4)
35-54	188(13.8)
>55	91(6.6)
Indication for Extraction	
Pericoronitis	413(30.2)
Buccally erupting tooth	543(39.7)
Cheek bite	27 (1.9)
Pain (Both acute/chronic)	357 (26.1)
Temporomandibular joint disorder	09(0.6)
Decayed Molar	16(1.2)
Any Other	3 (0.3)
Location of extracted third molars (N 2369)	
Mandible	1655 (69.8)
Maxilla	714(30.2)

Table 1. Preoperative and intraoperative characteristics of patients undergoing extraction of third molars

Table 2 describes the complications encountered by the patients. The most common post-operative complication experience by the patients was Swelling/pain/ trismus (36.8%) followed by dry socket (14.9%). The most common intra-operative complication was soft tissue injury (1.9%) followed by

COMPLICATION	FREQUENCY	PERCENTAGE	p-VALUE
		Intraoperative complications	
Root fracture	10	0.7	0.18
Bleeding	25	1.8	0.61
Tuberosity fracture	09	0.6	0.55
Soft tissue injury	27	1.9	0.02*
Damage to adjacent tooth	04	0.3	0.06
		Postoperative complications	
Swelling/pain/trismus	503	36.8	0.03*
Dry socket	205	14.9	0.16
Secondary bleeding	04	0.3	0.077

Table 2. Type and frequency of complications following extraction of third molars among patients

bleeding at the extraction site (1.8%). Both soft tissue injury ($p=0.02$) and swelling/pain/trismus ($p=0.03$) were found to be significant.

DISCUSSION

In the present study, it was reported that Swelling/pain/ trismus (36.8%) was the most common post-operative complication among patients. Extraction of third molars is often associated with expected and typically transient postoperative pain, swelling and trismus; however, at times, this pain may present beyond the first postoperative week and may require additional treatment such as placement of a dressing or administration of antibiotics during a follow-up visit.^{2,7} The prevalence of seeking postsurgical emergency appointments is around 10%.⁸

Buccal eruption of the third molar was the most common reason of its extraction (39.7%). However, alfadil et al reported 'asymptomatic; prophylactic indication' (66.8%) as the most common reason for extraction with vertical angulation was most common in the maxilla (56.5%), and mesioangular impaction in the mandible (40.5%).⁹ On the contrary, Iqbal and colleagues reported pain due to caries 49 (38%) as the most common reason for extraction of the third molar followed by pericoronitis.¹⁰

In the present study, the most common intra-operative complication was soft tissue injury (1.9%). This is in contrast to Sayed N. et al. and Desai B et al. who reported tuberosity fracture (1.2% & 0.78%) as their most common intra-operative complication.

CONCLUSION

It is a well-established fact that the third molars are the most common impacted teeth to be found in humans and their surgical extraction is one of the most common dentoalveolar surgical procedures in the oral maxillofacial surgical field. Dental students do undergo a through viva and practice on models, and have a staff, senior to guide them during their first extractions. The low percentages of intra-operative and post-operative complications among interns indicate adherence to proper exodontia protocols.

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