



CYSTIC LESIONS OF THE ORAL CAVITY: A CLINICOPATHOLOGICAL CASE SERIES OF 18 CASES FROM A TERTIARY CARE CENTER IN TRIPURA

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ABSTRACT

Background and Objective: Cystic lesions of the oral cavity represent pathological cavities lined by epithelium, presenting diagnostic challenges due to their diverse clinical and histopathological spectrum. The study was conducted to review the clinicopathological findings in various cases of cystic lesions of the oral cavity. **Materials and Methods:** A retrospective observational study was conducted over a period of 2 years (1st January 2022 to 31st December 2023) in the Department of Pathology, Tripura Medical College & Dr. BRAM Teaching Hospital, Agartala. All histopathologically confirmed oral cavity cyst biopsy specimens were included. **Results:** A total of 18 cases were analyzed. There was a male predominance with 10 male (55.6%) and 8 female (44.4%) patients (M:F ratio = 1.25:1). The mean age of the patients was 30.33 years. Intraoral swelling was the universal presenting symptom (100%), followed by difficulty in eating/swallowing in 61.11% of cases, and pain in 22.22% cases. Maxilla was the most commonly involved region. Radicular cysts were the most frequent histopathological diagnosis (44.4%), closely followed by mucous retention cysts (22.2%). Enucleation was the predominant surgical treatment performed. **Conclusion:** Oral cavity cysts predominantly affect young and middle-aged individuals with a male predilection. Accurate diagnosis requires a multidisciplinary correlation of clinical data, radiological imaging and histopathological examination, facilitating timely surgical management.

KEYWORDS : Oral Cavity, Cystic Lesions, Radicular Cyst, Histopathology, Odontogenic Keratocyst, Enucleation.

1. INTRODUCTION

Cystic lesions of the oral and maxillofacial region represent pathological cavities lined by epithelium that contain fluid, semi-fluid, or gaseous material^[1,2,3]. These lesions encompass a wide array of developmental, inflammatory, and neoplastic entities affecting the jaws and soft tissues of the oral cavity. Early diagnosis is critical for clinical management and requires a detailed clinical history with respect to the onset, duration, site, size of the swelling, and the presence of any antecedent trauma^[1]. While clinical presentation often provides initial clues, definitive diagnosis requires careful correlation of conventional radiographs, advanced cross-sectional imaging such as CT/MRI findings, and definitive histopathological examination^[1].

Management strategies vary depending on the specific lesion type, location, and size, ranging from conservative approaches like aspiration and marsupialization to intraoral surgical enucleation or transcervical excision^[1]. Given the histological diversity and potential for recurrence or bone destruction associated with certain cysts (such as odontogenic keratocysts), documenting regional epidemiological and clinicopathological patterns is essential for optimizing patient care.

The primary objective of this study was to review and analyze the clinicopathological findings, demographic distribution, presenting symptoms, radiological features, and histopathological spectrum in 18 cases of cystic lesions of the oral cavity diagnosed at a tertiary care center in Tripura.

2. MATERIALS AND METHODS

The present study was conducted in the Department of Pathology, Tripura Medical College & Dr. BRAM Teaching Hospital, Hapania, Agartala, over a duration of 2 years, from 1st January 2022 to 31st December 2023.

All biopsy specimens of oral cavity cysts received in the Department of Pathology for histopathological diagnosis during the study period were included. Exclusion criteria comprised of all non-cystic biopsy specimens of the oral cavity

and specimens that were inadequate for histopathological evaluation.

Clinical data including patient age, sex, presenting symptoms, anatomical site, and surgical intervention were retrieved from requisition forms and medical records. All tissue specimens had been fixed in 10% neutral buffered formalin, processed routinely, embedded in paraffin, sectioned at 4-5 μ m thickness, and stained with Hematoxylin and Eosin (H&E) for microscopic examination under light microscopy.

3. RESULTS

A total of 18 cases meeting the inclusion criteria were analyzed. Of the 18 patients, 10 were male and 8 were female, yielding a male-to-female ratio of 1.25:1. The age of the patients ranged widely, with a mean age of 30.33 years, demonstrating a predilection for young and middle-aged individuals.

Table 1: Distribution of Presenting Symptoms (n = 18)

Presenting Symptom	Number of Cases (n=18)	Percentage (%)
Intraoral Swelling	18	100%
Difficulty in Eating/Swallowing	11	61.11%
Pain at site of lesion	04	22.22%

All 18 patients (100%) presented with an intraoral swelling as the primary complaint. Difficulty in eating or swallowing was reported by 11 patients (61.11%), while localized pain at the site of the lesion was noted in 4 patients (22.22%).



Figure 1: Axial CT Showing a Well-defined Cystic Lesion Involving the Right Maxilla (16/F)



Figure 2: 3D CT Image Showing Involvement of Right Maxilla by the Cystic Lesion (16/F)

Histopathological evaluation revealed that the radicular cyst was the most common lesion, accounting for 8 cases (44.44%), followed closely by mucous retention cysts in 4 cases (22.22%). Odontogenic keratocysts (OKC) comprised 3 cases (16.67%). Mucous extravasation cysts, dentigerous cysts, and adenomatoid odontogenic tumors (AOT) represented 1 case each (5.56% respectively). Radiologically, maxilla was identified as the most frequently involved region, particularly serving as the commonest site for radicular cysts, whereas mucous retention cysts frequently involved the lower lip mucosa. Surgically, enucleation of the cyst was performed in the majority of cases (especially radicular and odontogenic cysts), followed by excisional biopsy for superficial soft tissue lesions.

Table 2: Histopathological Diagnosis Spectrum (n = 18)

Histopathological Diagnosis	Number of Cases (n=18)	Percentage (%)
Radicular Cyst	08	44.44%
Mucous Retention Cyst	04	22.22%
Odontogenic Keratocyst	03	16.67%
Mucous Extravasation Cyst	01	5.56%
Dentigerous Cyst	01	5.56%
Adenomatoid Odontogenic Tumor	01	5.56%

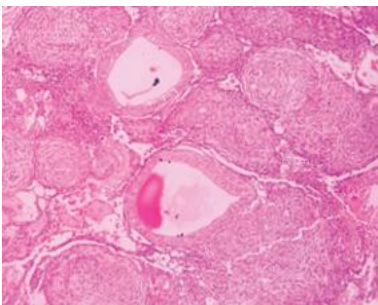


Figure 3: H & E Stained Section from Adenomatoid Odontogenic Tumor with Presence of Gland-Like Structures Amidst Cellular Areas Containing Spindle Cells in Whorled Pattern (Low power, 10x)

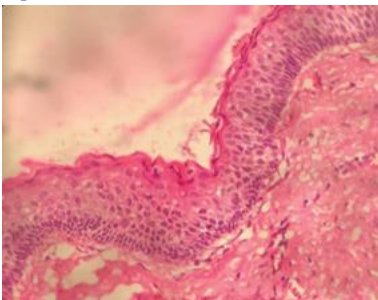


Figure 4: H & E Stained Section of Odontogenic Keratocyst Showing Corrugated Parakeratinised Surface and Prominent Palisaded Basal Cell Layer (High Power, 40X)

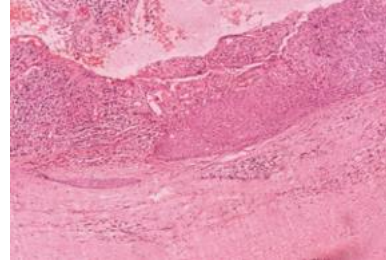


Figure 5: H & E Stained Section of a Mucous Filled Cyst Diagnosed as Mucous Retention Cyst (Low Power, 10x)

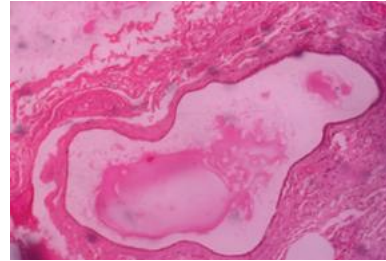


Figure 6: H & E Stained Section of a Mucous Retention Cyst Present Along with Salivary Gland (Low Power, 10x)

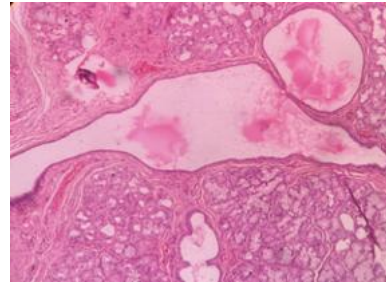


Figure 7: H & E Stained Section of a Dentigerous Cyst Lined by Stratified Squamous Epithelium and Containing a Dense Inflammatory Infiltrate (Low Power, 10x)

4. DISCUSSION

Cystic lesions of the oral cavity are frequently encountered in clinical practice. Our study observed that these lesions predominantly affect young and middle-aged individuals, a finding consistent with other published literature^[1, 2]. A male preponderance was noted in our study (M:F ratio = 1.25:1), which corroborates with related epidemiological studies on oral and maxillofacial cysts^[1, 2, 3].

Anatomically, maxilla was the most involved region, particularly serving as the primary site for inflammatory radicular cysts secondary to dental caries or pulpal necrosis. Mucous retention and extravasation cysts were frequently seen in minor salivary gland-bearing areas such as the labial mucosa^[1, 4, 6]. Histopathologically, radicular cysts constituted the largest share of cases (44.44%), matching standard pathological frequency data where inflammatory odontogenic cysts outnumber developmental counterparts. Odontogenic keratocysts also formed a significant subset (16.67%), requiring careful microscopic identification due to their distinct aggressive behavior and recurrence potential, characterized by a corrugated parakeratinized stratified squamous epithelial lining and prominent palisaded basal cell layer.

Surgical enucleation remains the mainstay of treatment for intraosseous cystic lesions, ensuring complete removal of the epithelial lining to prevent recurrence. For superficial retention phenomena, conservative surgical excision is curative.

5. CONCLUSION

Oral cavity cysts are relatively common lesions predominantly

affecting young and middle-aged patients with a slight male predilection. Timely surgical excision is the cornerstone of effective management, as delays can lead to local bone destruction, expansion, and secondary complications. A reliable and definitive diagnosis relies heavily on a synergistic approach combining detailed clinical evaluation, correlative radiological imaging, and precise histopathological examination.

Financial Support and Sponsorship: None

Conflicts of Interest: There are no conflicts of interest.

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