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Original Research Article

Klestadt Cyst: Case Series and Review of Literature

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Abstract

Klestadt cysts are rare but easily identifiable when they do occur. They are thought to arise from the remnants of the nasolacrimal ducts. Klestadt investigated nasolabial cysts in depth, after which the lesion was named Klestadt's Cyst. But it was Rao (1951) who first used the term nasolabial cyst. Thus, Klestadt and nasolabial cysts are synonymous with each other. Most of the available information on these cysts is limited to isolated case reports. The purpose of our study was to examine the clinical and pathologic features of nasolabial cysts in order to provide a basis for their correct diagnosis and treatment. Eleven patients with nasolabial cysts were treated at Kalpana Chawla Government Medical College, Karnal, Haryana between 2017 and 2020. All patients underwent surgery via the sublabial approach. There was no recurrence, and there were no surgical complications on follow-up. The results of our study provide a basis for better diagnosis and management.

Keywords: Klestadt cyst, Nasolabial cyst, diagnosis, enucleation.

Introduction

Nasolabial cyst is a rare non-odontogenic cyst originating in the maxillofacial soft tissues close to the nasal alar region of the face. The patient usually presents with a slowly enlarging asymptomatic swelling. [1,2,3,4]

Zuckerkandl originally described it in 1882 [5]. In 1953, Klestadt [6] investigated nasolabial cysts in depth, after which the lesion was named Klestadt's Cyst. But it was Rao (1951) [7] who first used the term nasolabial cyst.

Two main etiological theories have been proposed. One holds that the lesion arises from trapped nasolacrimal duct tissue, and the other affirms that it is an embryonic fissural cyst. Klestadt [6] postulated an embryologic origin for these cysts and considered that these lesions must originate from embryonic epithelium, entrapped in the development fissures between the lateral nasal and maxillary processes.

It is nonodontogenic, extrasseous cyst, is usually located in the area of the nasolabial sulcus, just below the ala nasi, accounts for

the approximately 7% of maxillary cysts, and is unilateral in 90% of cases. Nasolabial cysts predominantly affect women (75% of cases) and arise most commonly in the fourth and fifth decades of life [8,9,10].

The present case series aims to describe the clinical presentation, diagnosis, and surgical treatment of nasolabial cyst.

Material and Methods

A retrospective study was made of Eleven nasolabial cyst patients diagnosed between January 2017 and January 2020. Nasolabial cysts were diagnosed based on the Clinical examination and CT imaging. All of the patients underwent intraoral cyst enucleation technique with sublabial approach; histopathology confirmed the diagnosis. Collected data included the sex, age, race, clinical findings, duration of the disease, tests, cyst location, cyst size, surgical procedure, histopathology, postoperative follow-up and recurrence.

Results

There were seven female patients and four male patients with a mean age of 44.36 years. Right sided cyst (63.63%) was more common than left side (36.37%). There were, therefore, eleven nasolabial cysts in our analysis (Table 1). The predominant symptoms were nasal obstruction, pain upon local palpation and swelling in the nasal vestibule. The mean time between the onset of symptoms and a consultation with a specialist was 20.18 months. CT was done in all of the patients, showing well-defined cysts in the deep lateral nasal region. Bone remodeling resulting from compression due to a cyst was seen in 54.54% cases. The mean diameter of cysts was 2.09 cm. All of the patients underwent intraoral cyst enucleation technique with sublabial approach. Histopathology was done in all of the surgical specimens to confirm the diagnosis. The mean postoperative follow-up was 11.36 months. None of the cases recurred.

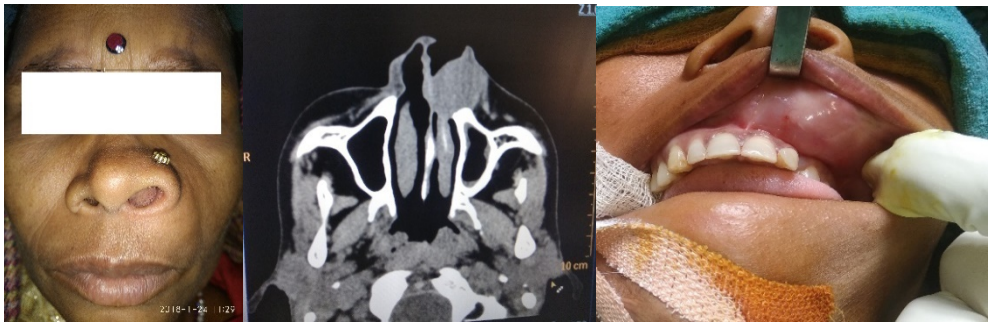

Figure1: Preop Photograph; Figure 2: CT Scan- globular thin walled fluid; Figure 3: Intra Operative Photographs attenuation lesion noted inferio to ala of nose on left side.

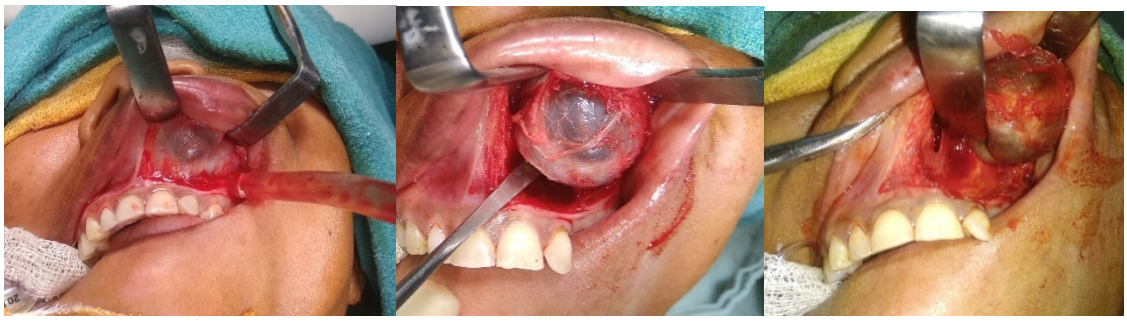

Figure 4: Intra Operative Photographs

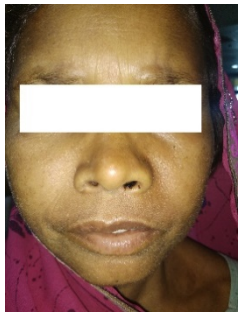

Figure 5: Post Operative Photograph on follow up

Histopathological examination findings were as follows- Pseudostratified ciliated columnar epithelium with goblet cells (H&E stain)

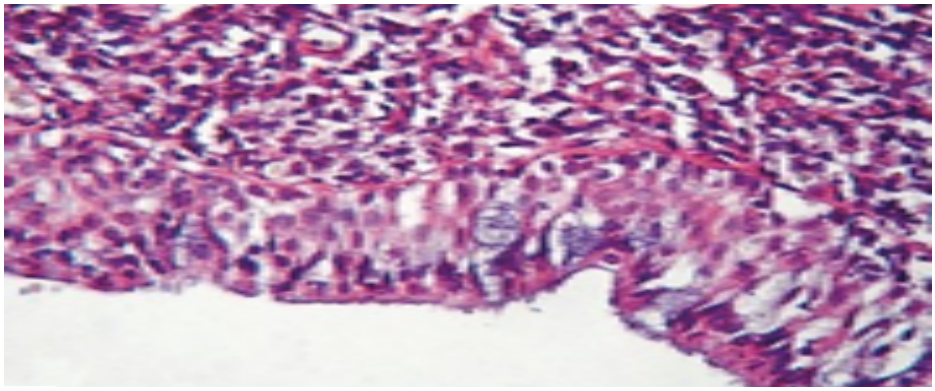

Figure 6:

Postoperative course was uncomplicated in all cases and patients are under regular follow up. (Figure 6).

Table 1: Age, sex, side on face where the cyst was located, data.

PATIENT	AGE(Years)	SEX	SIDE
1	48	FEMALE	RIGHT
2	50	MALE	RIGHT
3	38	FEMALE	RIGHT
4	40	FEMALE	LEFT
5	45	FEMALE	LEFT
6	35	MALE	RIGHT
7	42	FEMALE	RIGHT
8	50	MALE	RIGHT
9	52	FEMALE	LEFT
10	48	MALE	RIGHT
11	40	FEMALE	LEFT

Table 2: Symptoms, duration of disease, CT findings, size of cyst, type of surgery, postoperative follow-up, and recurrence data.

PATIENT	SYMPTOM	DURATION OF DISEASE	COMPUTED TOMOGRAPHY(CT)	SIZE(CM)	TYPE OF SURGERY	FOLLOW UP	RECURRENCE
1	Nasal obstruction/Pain	One year	Cyst	1.5	Intraoral enucleation	3 months	No
2	Nasal obstruction/Swelling	One and half years	Cyst/bone remodelling	2.5	Intraoral enucleation	2 years	No
3	Nasal obstruction/Pain	One year	Cyst	2.5	Intraoral enucleation	6 months	No
4	Nasal obstruction/Swelling	One and half years	Cyst	2	Intraoral enucleation	9 months	No
5	Nasal obstruction	Two years	Cyst/bone remodelling	2.5	Intraoral enucleation	1 year	No
6	Nasal obstruction/Swelling	Two and half years	Cyst/bone remodelling	2	Intraoral enucleation	1 year	No
7	Nasal obstruction/Pain	Three years	Cyst/bone remodelling	3	Intraoral enucleation	2 years	No
8	Nasal obstruction	One and half years	Cyst/bone remodelling	2	Intraoral enucleation	6 months	No
9	Nasal obstruction	One year	Cyst	1.5	Intraoral enucleation	11 months	No
10	Nasal obstruction	Two years	Cyst/bone remodelling	2	Intraoral enucleation	6 months	No
11	Nasal obstruction	One and half years	Cyst	1.5	Intraoral enucleation	1 year	No

Discussion

Nasolabial cyst are rare, comprising about 0.3% of maxillary cyst and 0.7% of all cyst in the maxillofacial region and 2.5% of nonodontogenic cyst[11,12]. In our cases all the cysts were unilateral more on right side (Table 1), patients were complaining of nasal obstruction, pain upon local palpation and swelling in the nasal vestibule (Table 2). A 3.5:1 female to male ratio in the incidence of nasolabial cysts has been noted in the literature; most of these cysts occur between the fourth and fifth decades of life, and are unilateral in 90% of cases [13,14,15]. In our cases female to male ratio was 7:4. The mean age at which cysts were detected in our study was 44.36 years, similar to other published results [13,14]. Nasolabial cysts, probably due to their slow growth, tend to be detected in older patient. A few nasolabial cyst patients may be asymptomatic, but most present at least one of three main symptoms: partial or total nasal obstruction, localized swelling or local pain [13,14]. The main symptoms in this study were: nasal obstruction (100 %), swelling in the nasal vestibule (27.27 %) and pain upon palpation (27.27 %). The mean time between the onset of symptoms and a consultation with a specialist was 20.18 months. Schuman [13] reported that 65% of the patients had symptoms for over 12 months before a diagnosis was made.

The differential diagnosis includes particularly the nasopalatine cyst, which is the most common maxillary non-odontogenic cystic lesion[16]. CT Scans usually reveal a homogenous, cystic lesion, with no contract uptake, anterior to the piriform aperture. Larger lesions may be associated with bone remodelling of the under- lying maxilla [17]. In our reported cases Bone remodeling underlying maxilla resulting from compression due to a cyst was seen in 54.54% with mean diameter of cysts was 2.09 cm.

Histopathology reveals a ciliated pseudostratified columnar epithelium and occasionally a stratified squamous epithelium lining the cystic lumen[14] .Su et al.[18] studied the inner surface of these cysts by electron microscopy, which showed a non-ciliated columnar epithelium associated with basal cells and mucous-producing cells (goblet cells). Histopathology was done in all of our surgical specimens (Figure 4); the general description was a cystic lesion with signs of chronic inflammation, a fibrous capsule, a smooth bright inner surface, and a yellowish seromucous liquid content.

Surgical enucleation is the preferred treatment reported in most of the published papers [11,12]. Other methods include-needle aspiration, cauterization, injecting sclerosants, and incision for drainage and marsupialization. These alternative methods, however, have high recurrence rates [19]. Therefore, we believe alternative methods should not be employed unless mandated by circumstance.

As nasolabial cyst is usually in close proximity with the floor of the nasal cavity, perforation of the nasal mucosa during surgical excision is not unusual[20]. So, to prevent the oronasal fistula, perforation should be closed with absorbable sutures and in our cases we repaired the nasal mucosa with absorbable sutures (Vicryl 3-0). Post operatively in follow up there was no oronasal fistula in our cases. The mean postoperative follow-up period was 11.36 months, during which there were no recurrences.

Conclusion

Klestadt cysts are infrequent in the general population. Although these cysts may be asymptomatic, the usual presentation is localized swelling, local pain and nasal obstruction. Computed tomography is the best diagnostic method. Histopathology reveals a non-ciliated columnar epithelium and mucus-producing cells. The treatment of choice is surgical enucleation, which has very low recurrence rates.

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