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Klestadt's cyst of nasal cavity: An unusual nasolabial cyst

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Abstract
Klestadt's cyst is a rare non odontogenic cyst arising in the sublabial area. The patients usually presents with a slowly enlarging asymptomatic swelling. We report a case of 35 year old female who presented with a painless swelling in the nasal alar region progressive over 3 years with an unusual histopathological finding of metaplasia which is rare to occur and discuss the immunohistochemical aspects of the same.

Keywords: Nasolabial cyst, klestadt's cyst, nonodontogenic cyst

Introduction

Klestadt's Cyst or Fissural Cyst is an uncommon non odontogenic cyst that occurs in the nasolabial region. It constitutes about 0.7% of all Maxillary Cysts. It is developmental in origin and was first described by Zuckerkandl in 1882.

Two theories of pathogenesis has been proposed. The first theory by Klestadt suggests that Nasolabial cyst is derived from trapped embryonic nasal respiratory epithelium in the mesenchyme, after fusion of medial and lateral nasal process of maxilla at 4th week of intrauterine life. This concept led to the term "Fissural cysts".

The second and recent theory postulated by Bruggemann suggested that Nasolabial cyst arises from the epithelial remnants of lower anterior part of nasolacrimal duct due to their histological similarities.

Women are most commonly affected, and generally occur in fourth to fifth decade. It presents as a painless swelling around nasal vestibule region, with increasing size. The cyst may impinge on inferior turbinate, which on long term may result in erosion of nasal floor. The usual histopathological finding in nasolabial cyst is multilayered cuboidal to columnar epithelium. The presence of Focal Squamous metaplasia is rare, which was seen in our case and it is demonstrated by immunohistochemical analysis with p63 and Ki67.

Case report

A 35 year old female patient presented with complaints of swelling in right vestibular region since 3 years which was insidious in onset, gradually progressive in nature. It was associated with nasal obstruction on the right side, insidious in onset, gradually progressive, aggravated on exposure to cold climate.

Anterior rhinoscopy revealed a 2 cm x 3 cm, small, fluctuant, mobile swelling in the right vestibular region elevating the inferior turbinate upwards and occluding the nasal passage. Swelling was seen to obliterate the right nasolabial fold. Intra-oral examination, revealed bulging of the buccoalveolar sulcus by the swelling.

CT Paranasal sinus showed well defined soft tissue density approximately measuring 1.5 cm x 2.1 cm in subcutaneous plane of pre-antral space along the right nasolabial fold causing scalloping of subjacent alveolar margin of maxilla suggestive of nasolabial cyst (Fig 1).

Excision of right nasolabial cyst (Sublabial Approach) under local anaesthesia was performed. 2% lignocaine with 1:100,000 adrenaline was injected at the incision site. Sublabial Incision was given at the upper gingivobuccal sulcus. This was followed by blunt dissection to free the cyst from surrounding tissues. The cyst was excised in toto. The aspirate from the cyst was serous. The excised tissue was sent for histopathological examination which was suggestive of nasolabial cyst.

Fig 1: CT Coronal section showing nasolabial cyst in right nasal alar region

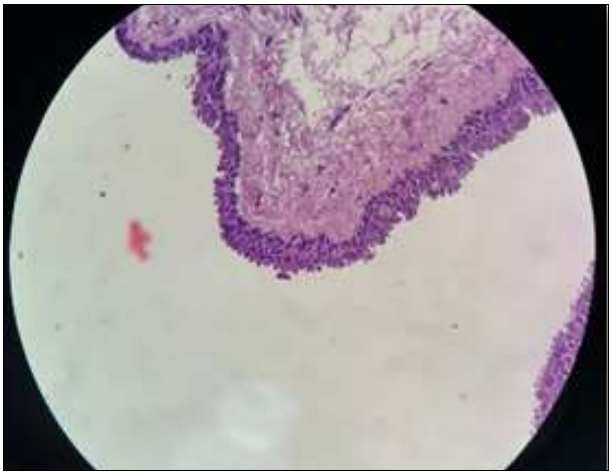

Fig 2: Histological Analysis of Epithelial Layers and Squamous Metaplasia

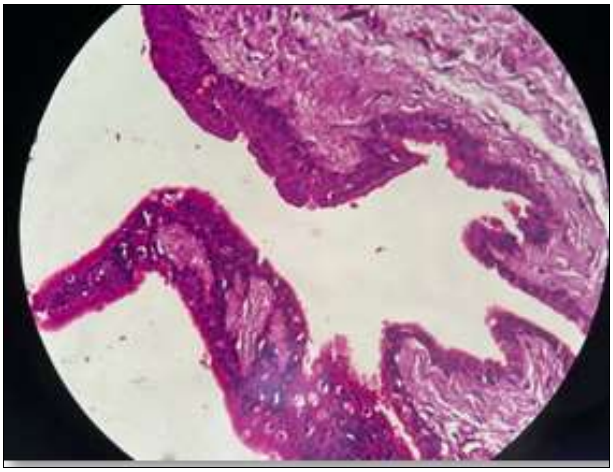

Fig 3: Detection of Goblet Cells with Periodic Acid Schiff (PAS) Staining

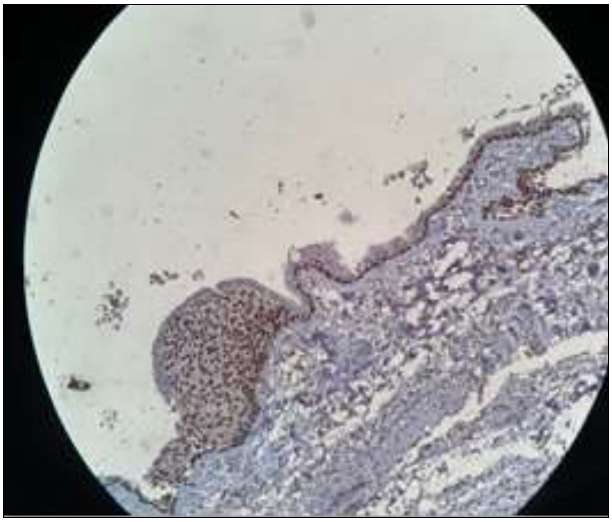

Fig 4: Immunohistochemical Analysis Showing p63 Positive Squamous Cells and Intact Basement Membrane

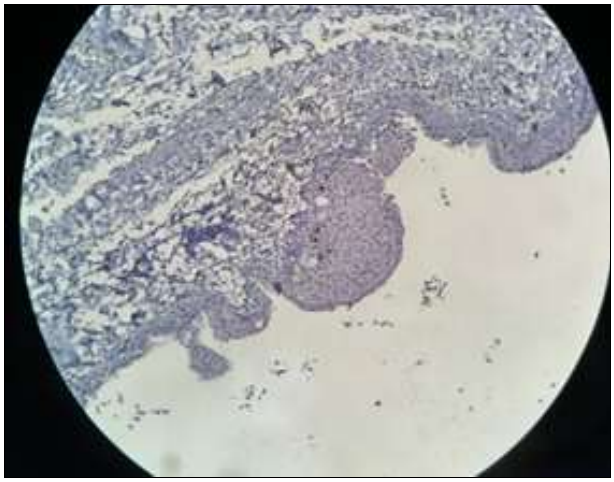

Fig 5: Low Proliferative Activity (Ki67 <5%) in Epithelial Cells Confirming Benign Nature of the Cyst

Further, sections stained with Haematoxylin & Eosin revealed double layer of columnar and cuboidal epithelium but at places focal squamous metaplasia was noted. (Fig 2). Sections with Periodic Acid Schiff (PAS) staining revealed goblet cells (mucin secreting cells) (Fig 3).

Immunohistochemical analysis was done using p63 and Ki67. Squamous cells showed positive nuclear reaction for p63 which revealed an intact basement membrane. (Fig 4). The Proliferative Activity of epithelial cells was low (Ki67 <5%), thus proving the benign nature of the cyst. (Fig 5).

Discussion

Klestadt did a detailed study of nasolabial cysts and proposed the possible origin of the same, and hence the name “Klestadt's cyst” was given in his honor.

The clinical presentation of fissural cyst is typical with a swelling beneath the nasal ala causing its elevation and obliterating the nasolabial fold. It may encroach the lateral wall of nasal vestibule and result in nasal obstruction. The differential diagnosis of odontogenic lesions are canine space abscess, periodontal and residual cysts, and salivary gland neoplasms.

Kajila *et al*. in their study conducted in the year 2014, mentioned that only one case of carcinoma progressing from a nasolabial cyst was found.

In most of the studies, only the clinical presentation, differential diagnosis and management options has been discussed, we report a case of nasolabial cyst with an unusual histopathological finding - which was demonstrated with immunohistochemical analysis with p63 and Ki67.
Sublabial approach for excision of nasolabial cysts has been the popular method for management of nasolabial cysts. Transnasal endoscopic marsupialization is an alternative approach for the same.

Conclusion

Nasolabial cysts are common clinical entity, uniquely in our case, along with the usual histopathological finding, squamous metaplasia was present which was demonstrated by nuclear staining with p63 and Ki67, thus proving the benign nature of the cyst.
Squamous metaplasia is reversible. The key factor for reversing metaplasia is removing the offending stimulus. If metaplasia undergoes another stage of transformation, the cells will become dysplastic. Dysplastic cells are considered a precancerous cell type and, if left untreated, will typically become cancerous.

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Author's Contribution

Not available.

Conflict of Interest

Not available.

Financial Support

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