True median palatal cyst; a rare case report

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Abstract
Median palatal cyst is rare nonodontogenic fissural cyst. Very few cases of true MPCs have been reported in literature. In the recent years, there is much controversy about midline fissural entities as embryologists and pathologists question epithelial entrapment during embryonic fusion. The WHO in 1992 advocates it to be posterior extension of nasopalatine duct cyst. Hadi et al. in 2001 published an article describing specific criteria for the diagnosis of midpalatal cyst.

1. Cyst must be present posterior to the palatine papilla
2. Cyst must be grossly symmetrical in the midline of palate
3. Cyst must not have any communication with incisive canal or associated with nonvital tooth
4. Radiographically, it should be round or ovoid
5. And histologically, it should not have hyaline cartilage, large vascular spaces or salivary glands in the cyst wall.

The purpose of this paper is to report a rare case of true median palatal cyst satisfying these criteria and discuss the current controversy about these cysts.

Keywords: Median palatal cyst, nasopalatine duct cyst, true midline cyst

INTRODUCTION
Median palatal cyst (MPC) is a rare nonodontogenic fissural cyst. Very few cases of true MPCs have been reported in literature. In the recent years, there is much controversy about midline fissural entities as embryologists and pathologists question epithelial entrapment during embryonic fusion. The WHO in 1992 advocates it to be posterior extension of nasopalatine duct cyst. Hadi et al. in 2001 published an article describing specific criteria for the diagnosis of midpalatal cyst.

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Case Report
A 26 year male patient reported to our department complaining of swelling in his palate. He observed the swelling 1 month back and was insidious in onset, which was of the same size since then. No pain or discharge associated with swelling. Medical history was noncontributory, and he is a smoker (8–10 cigarettes/day for 3 years). Oral hygiene was good with no carious tooth.

On examination, solitary oval swelling measuring 2 cm × 3 cm was found in midline of palate, 1.5 cm from palatal gingival margin [Figure 1]. Mucosa over the swelling was normal in color and texture, soft and nontender on palpation. Occlusal radiograph showed symmetrical oval radiolucency in the palate with sclerotic borders [Figure 2]. There was no involvement of nasopalatine duct. Provisional diagnosis of MPC was made. On aspiration, dirty brown...
fluid obtained and the smear was cellular with muciphages and cyst macrophages on proteinaceous background suggestive of an infected cyst.

Enucleation of the cyst was done under local anesthesia. Lesion was approached after raising palatal mucoperiosteal flap, and complete enucleation was done [Figure 3]. There was no recurrence seen after 6 months of follow-up.

**Histology [Figures 4 and 5]**
On microscopic examination cyst lined with pseudostratified ciliated columnar epithelium was observed. There were no features of hyaline cartilage, salivary glands or vascular spaces.

**DISCUSSION**

MPC is a rare nonodontogenic lesion as it represents only 7.14% of all jaw cysts. MPC presents as asymptomatic well-demarcated oval swelling and has a male predilection. MPC has raised controversy about pathogenesis of such fissural cysts.

Clinical presentation of MPC is classically nontender well-demarcated oval swelling in the midline of palate. The cysts which arise in the midline and expand are midpalatal cyst, enlarged nasopalatine duct and nasopalatine duct cyst. Nasopalatine duct cyst is developmental cyst arising from epithelial ruminants of nasopalatine duct. They can be central or unilateral. Radiographically, they appear as heart-shaped radiolucency because the cyst is notched by nasal septum during their development. One of the differential diagnoses should be radicular cyst and hence important to check vitality of teeth and periodontal condition. Donnelly et al. considered this association with vital teeth to be a necessary diagnostic criterion.

We did not encounter nasopalatine bundle during surgical removal, therefore distinguishing it from nasopalatine duct cyst. No carious tooth or periapical lesions were present and thus odontogenic etiology ruled out.
The controversy regarding its existence, originally thought to arise from epithelium entrapped in embryonic lines of fusion of lateral palatal shelves which is questionable. In 1992, the WHO wrote “it is now felt that those (cysts) in the maxilla represent a posterior extension of the nasopalatine duct cyst in the case of a median palatine cyst.” Other theories suggest that these arise from primordial cysts of supernumerary tooth buds or redundant dental lamina.

Twenty-two cysts have been reported in the past 40 years and have been greatly reduced, and after 1992, the WHO omitted from the classification. Only three cases have been reported after 1985. Allmendinger et al. recorded computed tomographic features of MPC and clearly demarcating incisive canal and central cyst in hard palate and therefore cannot be call posterior extension of the nasopalatine cyst. Therefore, multidimensional computed tomography can provide more details of the lesion.

MPCs are treated by enucleation although there is a case of marsupialization reported in literature. Marsupialization will not allow complete histological evaluation of the cyst, and there may be chances of recurrence.

After enucleation of the lesion, complete regeneration of bone will not occur, and the defect is filled by scar tissue and might lead to oronasal communications. Therefore, long-term follow-up is advised.

CONCLUSION

MPCs are rare nonodontogenic cysts and can be diagnosed by clinical criteria, radiological confirmation by computed tomography and histology. This case typically presented clinical, radiographical and histological features of MPC.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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