

Pyocele of the middle turbinate

A case report

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Summary

Pneumatization of the middle turbinate bone is a result of migration of ethmoid air cells. The accumulation of mucus when the ostium is blocked results in the formation of a mucocele or, if superadded infection is present, a pyocele (empyema).

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The nasal cavity and turbinates play an important role in moistening and warming the inspired air. Extension of ethmoidal cells into the middle turbinate bone is not uncommon. The accumulation of mucous secretion and secondary infection may result in a pyocele of the middle turbinate although this is exceptionally rare.

Case report

A 60-year-old woman presented with a 3-week history of nasal obstruction with slight rhinorrhoea on the left side. There was a large polypoid swelling occluding the left nasal passage and arising from the lateral wall of the nose. It was red in colour and tensely cystic. The provisional diagnosis was an allergic nasal polyp.

The postero-anterior (Fig. 1) and occipitontental radiographs (Fig. 2) showed a left-sided nasal mass and clouding of the left ethmoid air cells. Both maxillary antra were completely opaque and the nasal septum was deviated to the right.

At operation, the tense cystic mass with a pedicle in the ethmoid area was needled and found to contain 10 ml of thick inspissated pus. The chronically infected lining was excised, leaving behind the marsupialized stump of the middle turbinate. Bilateral maxillary antral wash-out revealed a large amount of thick inspissated pus. A specimen from the middle turbinate showed focal oedema, marked chronic inflammatory cell infiltration and evidence of bony trabeculae. The postoperative course was uneventful.

Discussion

The paranasal sinuses are lined by pseudostratified columnar ciliated epithelium. They vary individually in size and extension,

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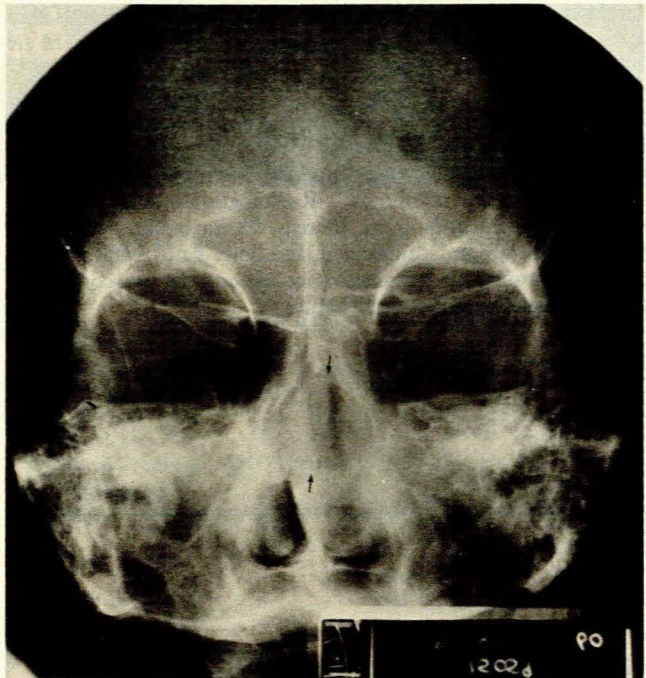


Fig. 1. Postero-anterior projection showing a mass in the left nasal cavity (arrows) with clouding of the left ethmoid air cells and frontal sinuses.

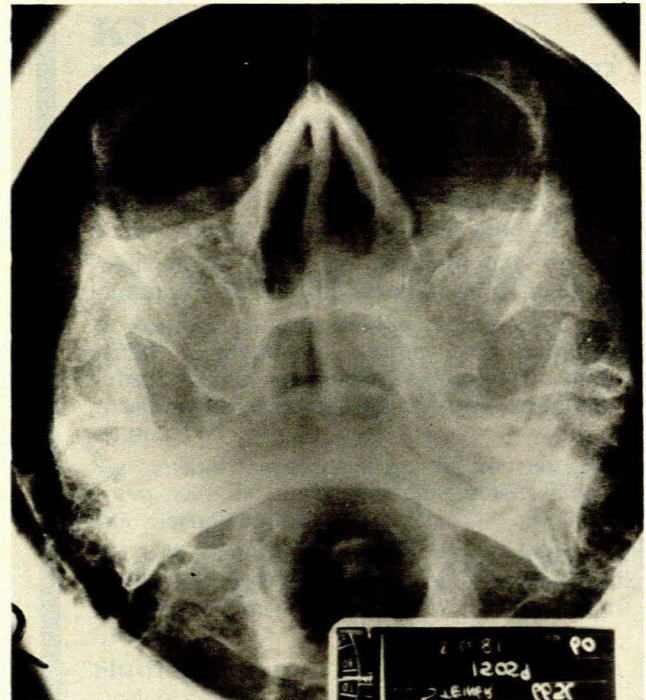


Fig. 2. Occipitontental view confirming the left nasal mass as well as opacification of both maxillary antra.

and all undergo major expansion after birth. The maxillary and ethmoidal cells are of appreciable size at birth but are not filled with air;¹ adult sinus proportions are reached at approximately 16 years of age.² The ethmoidal cells vary in number from 3 to 20 cells, occupying the lateral masses of the ethmoidal bones, and are divided into anterior, middle and posterior groups. The ethmoid cells may extend into the antral, frontal, palatine or sphenoid bone.¹⁻³

The inferior turbinate which is the largest of the three turbinate bones, is a separate bone, whereas the superior and middle turbinates are part of the ethmoid bone. The ethmoid cells may extend into the middle turbinate bone,¹⁻³ and sometimes the air cells dilate the turbinates enough to produce nasal obstruction.^{3,4}

A mucocele of the sinuses represents a dilated mucus-containing sac lined by sinus epithelium and is due to continuous fluid secretion into an obstructed sinus or air cell.^{3,5} The obstruction of the ostium may result from infection, trauma, tumour or cystic degeneration of mucosa.^{6,7} Radiological findings vary from a loss of translucency to an increased transradiancy resulting from expansion and thinning of the bony sinus walls.³ When infected, a mucocele becomes a pyocele and the two conditions are radiologically indistinguishable.

Ethmoidal mucocoeles were briefly discussed by Lloyd *et al.*⁵ A pyocele of the pneumatized middle turbinate bone is a rare entity, so that the diagnosis usually comes as a histological surprise. Operative removal is the only treatment.

Computed tomography (CT) plays an important role in delineating paranasal sinus lesions as well as in demonstrating surrounding bony destruction. A CT classification of ethmoid mucocoeles has recently been reported.⁸

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