

## Radiology in Focus

### Pneumatization of the uncinate process

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#### Abstract

We report one case of extensive and two of partial pneumatization of the uncinate process from a consecutive series of 250 CT scans of the paranasal sinuses. The CT findings are illustrated and the literature reviewed.

**Key words:** Tomography, X-ray computed; Ethmoid bone, uncinate process

#### Case histories

The first patient (Fig. 1) had a history of recurrent sinusitis to which the right concha bullosa and possibly the extensive left-sided uncinate pneumatization may have been predisposing factors.

The second patient (Fig. 2) had a history of recurrent right frontal headaches: the right frontal sinus was hypoplastic and the small bilateral anterosuperior areas of uncinate pneumatization were considered unlikely to be of pathological significance. However pneumatization in this region can impair frontal sinus ventilation whilst extensive pneumatization can impair maxillary and ethmoidal sinus ventilation (Bolger *et al.*, 1990).

The third patient (Fig. 3) presented with a history of cacosmia and the finding of small areas of anterosuperior uncinate pneumatization were similarly not considered pathological.

#### Discussion

Pneumatization of the uncinate process produces further narrowing of the infundibulum and can create new areas of mucosal contact (Stammberger, 1991). The process probably occurs due to excavation of the agger nasi cell into the most anterosuperior region of the uncinate process (Bolger *et al.*, 1991).

In a comparable consecutive series of 202 paranasal sinus CT scans, Bolger *et al.* (1991) found some pneumatization of the

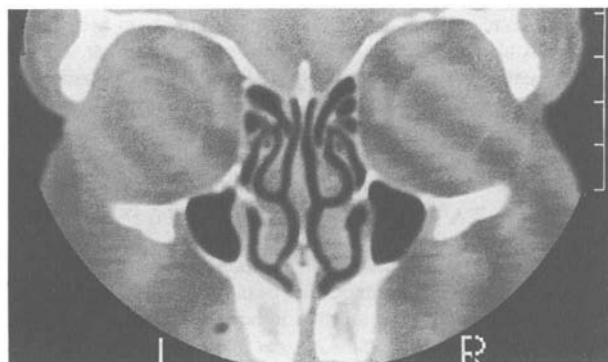


FIG. 2

Paranasal sinus CT scan showing bilateral anterosuperior uncinate pneumatization.



FIG. 1

Paranasal sinus CT scan showing extensive pneumatization of the left uncinate and a right concha bullosa.

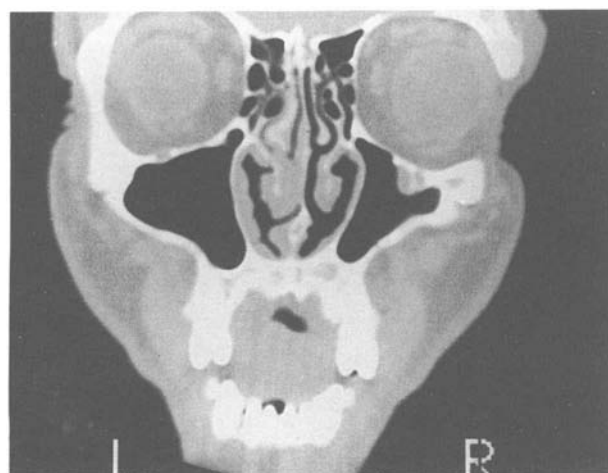


FIG. 3

Paranasal sinus CT scan showing bilateral anterosuperior uncinate pneumatization.

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uncinate in eight patients. This was extensive unilaterally in four patients and bilaterally in one, to indicate a 2.5 per cent incidence of an 'uncinate process bulla'. Our series indicates a 0.8 per cent incidence of partial pneumatization of the uncinate and a 0.4 per cent incidence of an uncinate process bulla—the same figure quoted by Kennedy and Zinreich (1988) from a series of 230 scans.

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