

CASE REPORT

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Retro-maxillary nasal recess: a case report with a new finding

Mohammad Waheed El-Anwar^{1*}

Abstract

Background Retro-maxillary recess of the nasal cavity is an area that has not yet described in the literature.

Objective To report, present, and describe a previously non-reported case which has bilateral retro-maxillary nasal recess by multi-slices computed tomography (MSCT).

Case presentation A CT of a 22-year-old male showed bilateral retro-maxillary nasal recess extends beyond the posterior maxillary sinus wall and anterior to the pterygopalatine fossa as an extension of the middle meatus laterally and bounded by the maxillary sinus anterior, the orbital floor superior, the inferior turbinates lateral attachment inferior, and the pterygopalatine fossa anterior. The retro-maxillary nasal recess anteroposterior, lateral, and vertical dimensions were 11.53, 8.24, and 11.6 mm respectively at the left side and 5.6, 4.61, and 6.16 mm respectively at the right side.

Conclusion This study reports and describes a new retro-maxillary nasal recess that could represent a new hidden challenging area for ESS.

Keywords Retro-maxillary recess, Endoscopic sinus surgery, CT, FESS, Maxillary sinus

Background

Proper radiology study of the nose and paranasal sinus (PNS) anatomy and their variants is critical for preoperative planning and intraoperative orientation during endoscopic sinus surgery (ESS) and represents the key for harmless and complete surgery [1, 2]. Despite that the literature reported many endoscopic and radiology studies that increase surgical orientation during ESS [1–4], still post-ESS residual diseases and complication are encountered [5–7].

The retro-maxillary recess of sphenoid sinus and retro-maxillary cell of the ethmoid sinus were previously described [8–10]. But, to the best of my knowledge,

retro-maxillary recess of the nasal cavity was not previously reported.

A new recess was reported and described in the current study, retro-maxillary nasal recess, as a newly described nasal recess.

Case presentation

A CT of a nonsmoker male aged 22 years showed bilateral nasal recess extends beyond the posterior maxillary sinus wall and anterior to the pterygopalatine fossa. The patient has no previous history of facial trauma or sinonasal or facial surgery. Informed consent was signed the patient. Patient complained of nasal obstruction and headache, post nasal discharge.

So, this retro-maxillary nasal recess is a continuation of the middle meatus laterally and bounded by the maxillary sinus anterior, the orbital floor superior, the inferior turbinates lateral attachment inferior, and the pterygopalatine fossa posterior (Fig. 1).

This recess creates a direct relation of the nasal cavity with orbital floor and the pterygopalatine fossa and

*Correspondence:

Mohammad Waheed El-Anwar
mwenteg1973@gmail.com

¹ Otorhinolaryngology-Head and Neck Surgery Department, Faculty of Medicine, Zagazig University, Zagazig, Egypt

also separate the maxillary sinus from the pterygopalatine fossa.

There was also bilateral concha bullosa, small maxillary sinus bilaterally, with well-formed uncinate process bilaterally (Fig. 2).

The retro-maxillary nasal recess anteroposterior, lateral, and vertical dimensions were 11.53, 8.24, and 11.6 mm respectively at the left side and 5.6, 4.61, and 6.16 mm respectively at the right side (Fig. 3).

Discussion

CT details of the nose middle meatus and the maxillary sinus should be clearly understood by the radiologist and the rhino-surgeon as a pre-request in the way to achieve safe and efficacious ESS.

Some hidden and challenging recesses from the paranasal sinuses were previously described such as El-Anwar recess (the retro-maxillary of the sphenoid sinus) [8] and the retro-maxillary recess of the ethmoid cells [9, 10].

We reported in the current study a new retro-maxillary recess from the nasal cavity. This newly reported retro-maxillary nasal recess is related anterior directly to

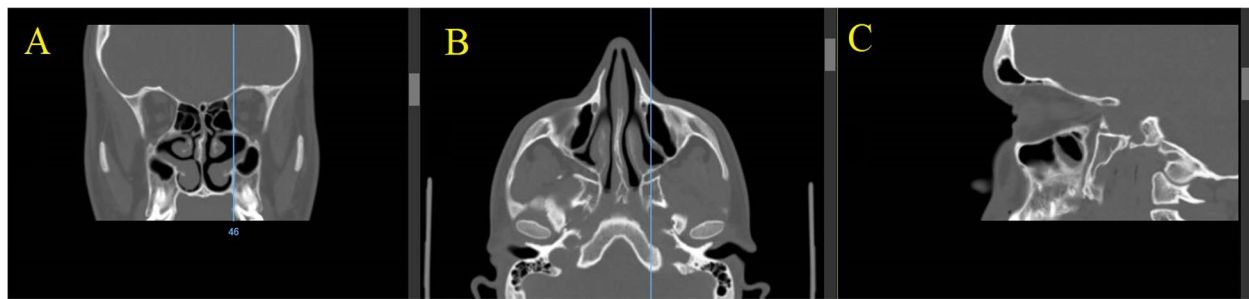


Fig. 1 CT shows bilateral retro-maxillary nasal recesses at coronal cut (A), axial cut (B), and sagittal cut (C)

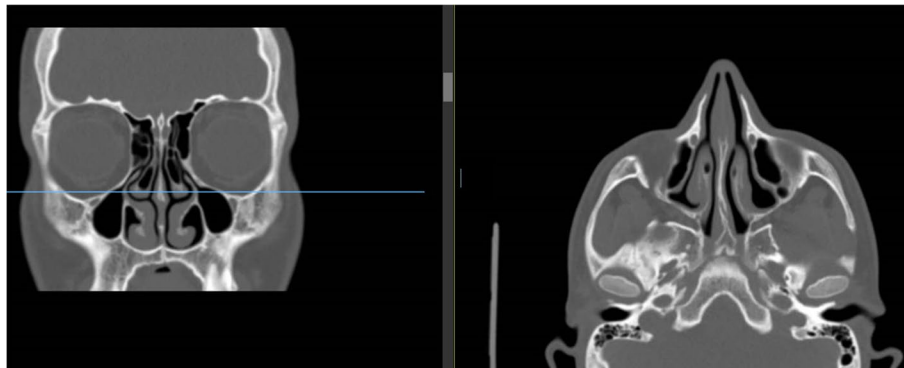


Fig. 2 CT shows small maxillary and normally appeared uncinate process

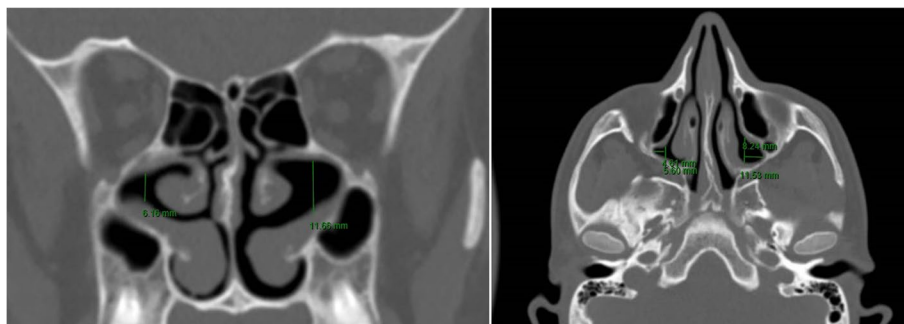


Fig. 3 CT shows the retro-maxillary nasal recess anteroposterior, lateral, and vertical dimensions which were illustrated and measured

posterior maxillary wall without intervening ethmoidal air cells and continues medially with the middle meatus and the nasal cavity (under the second part of the middle turbinate). Posteriorly, it is related to the pterygopalatine fossa, and superior, it has direct relation with the orbital floor. Its origin from the nasal cavity sharply differentiates it from ethmoidal cells.

This new retro-maxillary nasal recess should be differentiated from the retro-maxillary recess of the sphenoid sinus [8] that represents an air-filled recess protruding from the sphenoid sinus (originate from the sphenoid sinus) without direct connection to the middle meatus. This new retro-maxillary nasal recess has no connection to the ethmoidal air cells so it could easily be differentiated from the retro-maxillary sinus recess of the ethmoid sinus [9, 10].

The retro-maxillary nasal recess was not reported or described before in the literature. So, the current reported new recess represents a new variant and recess of the nose. This recess was reported on both sides and its relatively wide area that needs to be oriented about and well visualized if indicated for surgery for any residual pathology during ESS and might be indicated for utilizing the angled endoscopy (30°, 45°, or 70°) to completely visualize this hidden area.

We recommend adding the retro-maxillary nasal recess to the variation of the nose and paranasal sinus and to be considered during revising the CT of the nose.

Conclusion

This study reports and describes a new retro-maxillary nasal recess that could represent a new hidden challenging area for ESS. It is related anterior directly to posterior maxillary wall without intervening ethmoidal air cells and continues medially with the middle meatus and the nasal cavity.

Abbreviations

CT	Computed tomography
PNS	Paranasal sinus
ESS	Endoscopic sinus surgery

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None.

Authors' contributions

MWE reports and describes the case; reviews literature; prepares figures, data collection, and data interpretation; and write and revises the manuscript. The author has read and approved the manuscript.

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Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request. The data cannot be shared openly to protect study participant privacy.

Declarations

Ethics approval and consent to participate

Informed written consent was signed by the patient to share in the study after explanation of its purposes. Zagazig University Hospitals IRB approval was obtained.

Consent for publication

The patient included in this research gave written informed consent to publish the data contained within this study.

Competing interests

Dr. Mohammad Waheed El-Anwar is the author of this study and co-editor of this journal, and he has not been involved in handling this manuscript during the review process.

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