

Letters to the Editor

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Regarding 'Radiological and clinical correlations of the anterior ethmoidal artery in functional endoscopic sinus surgery'

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Dear Editors,

We read with great interest the article titled 'Radiological and clinical correlations of the anterior ethmoidal artery in functional endoscopic sinus surgery', by Gupta *et al.*,¹ in your esteemed journal. It is a very well written paper, and we would like to congratulate the authors on this effort. This is an area of interest for us, and we are currently conducting a study on the same topic. Therefore, we would like to highlight other points that we consider pertinent to this content.

The authors pointed out that high-resolution computed tomography scanning prior to functional endoscopic sinus surgery is mandatory to identify the anterior ethmoidal artery, and the axilla and basal lamella of the middle turbinate can serve as dependable reference points to identify the artery endoscopically; in addition, cadaver dissection improves understanding of anatomy.¹

The position of the anterior ethmoidal artery is also challenging when an approach to the frontal sinus is planned – the anterior ethmoidal artery with its nasal branch is located at the most posterior extent of dissection, near the first olfactory fibre (Fig. 1), with its injury leading to retraction of the vessel behind the orbit and ultimately resulting in a retro-orbital haematoma.^{2–4}

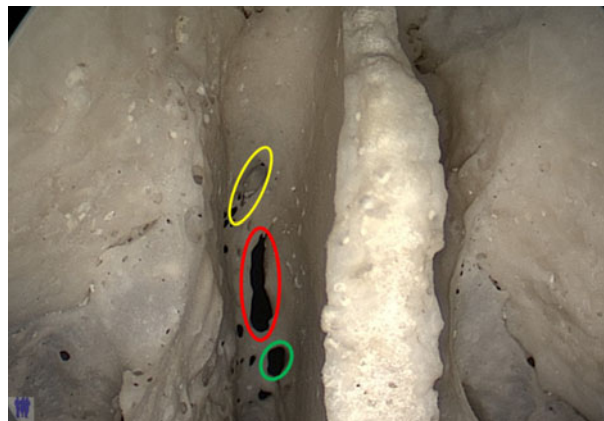


Figure 1. Bottom view (endoscopic view) of the anterior ethmoid artery region in a representative scheme. The red circle shows the region of the anterior ethmoidal artery, the yellow circle indicates the region of the frontal infundibulum, and the green circle is the first olfactory fibre.

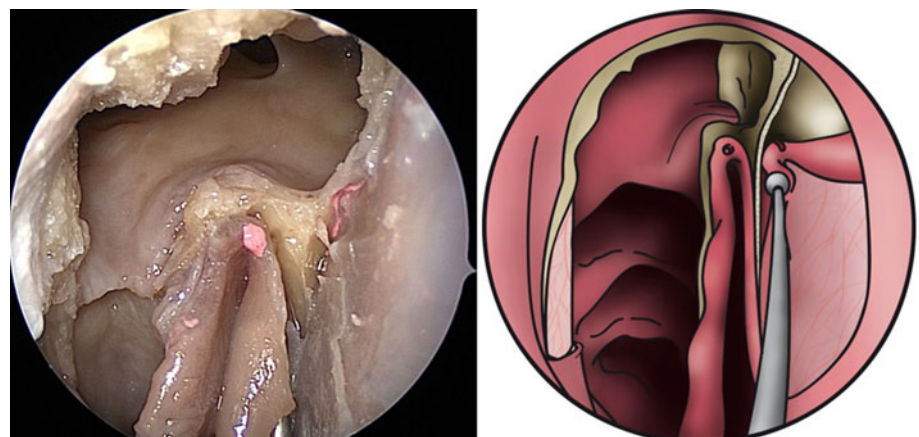


Figure 2. (a) The anterior nasal branch of the anterior ethmoidal artery has been cut, and is a useful landmark for the posterior limit of a median drainage procedure. (b) Representative scheme of the same view.

The dissection of 20 halves of dry injected skulls was performed by the authors in order to understand the location of the anterior nasal artery in relation to the lamina cribrosa and the first olfactory fibre, and to determine its utility as a landmark to the correct coronal trajectory into the frontal sinus and away from the anterior skull base. In 100 per cent of the specimens, the nasal branch of the anterior ethmoidal artery was found to be located anterior to the first olfactory fibre, being the first medial and anterior structure in the lamina cribrosa area (Fig. 2).

These findings are in line with those described by Sahu and Casiano, who previously addressed this issue but with different landmarks.⁵

We consider that the landmarks proposed by the authors are useful when the frontal sinus is approached.

References

- 1 Gupta A, Ghosh S, Roychoudhury A. Radiological and clinical correlations of the anterior ethmoidal artery in functional endoscopic sinus surgery. *J Laryngol Otol* 2022;**136**:154–7
- 2 Dassi C, Demarco F, Mangussi-Gomes J, Weber R, Balsalobre L, Stamm A. The frontal sinus and frontal recess: anatomical, radiological and surgical concepts. *Int Arch Otorhinolaryngol* 2020;**24**:364–5
- 3 Simmen D, Jones N. *Manual of Endoscopic Sinus Surgery and its Extended Applications*. New York: Thieme, 2005
- 4 Roussel L-M, Patron V, Maubert E, Escalard C, Goux D, Beaudouin V *et al*. New landmarks in endonasal surgery: from nasal bone to anterior cribriform plate including branches of anterior ethmoidal artery and nerve and terminal nerve. *Int Forum Allergy Rhinol* 2020;**10**:395–404
- 5 Sahu N, Casiano R. Nasal branch of the anterior ethmoid artery: a consistent landmark for a midline approach to the frontal sinus. *Int Forum Allergy Rhinol* 2019;**9**:562–6