

## Unilateral membranous choanal atresia

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Images of a case of unilateral choanal atresia diagnosed in a 35-year-old woman are presented. This is an uncommon diagnosis in an adult patient, and a less frequently encountered form of the condition. In more than 90% of cases of choanal atresia, the abnormality is partly or completely osseous; pure membranous atresia is rare.<sup>1</sup> It is unilateral in 50 - 60% of cases, and more than 75% are associated with syndromes and systemic anomalies.

Unilateral choanal atresia may go unrecognised until adulthood, as in our patient, when she presented with rhinorrhea and unilateral recurrent nasal obstruction.

Failure of perforation of the buccopharyngeal membrane during midface development in the developing fetus produces membranous choanal atresia.<sup>2</sup> The imaging modality of choice for suspected choanal anomalies is computed tomography (CT). Image reconstruction with a bone algorithm is required to clearly depict partially ossified/unossified structures. Careful suctioning prior to the scan may be helpful in some patients.

The purpose of CT scanning is to:

- confirm the diagnosis, determine if it is uni/bilateral, and assess if it is bony/membranous or mixed
- determine if it is a stenosis or atresia, and assess vomer bone width and choanal airspace distance in atresia. Normal choanal orifices measure >0.37 cm in children <2 years.<sup>2</sup>
- exclude other possible sites of obstruction.

CT virtual endoscopy is a post-processing tool that can aid in depicting disorders of the airways and may assist in preoperative planning. In choanal atresia, the posterior view provides a look at the abnormality and surrounding anatomical relationships.<sup>3</sup>

Membranous choanal atresia is usually treated with endoscopic perforation. Osseous atresia may require choanal reconstruction or transpalatine resection of the thick vomer.

1. Valencia MP, Castillo M. Congenital and acquired lesions of the nasal septum: A practical guide for differential diagnosis. *Radiographics* 2008;28:205-223.
2. Castillo M. Congenital abnormality of the nose: CT and MR findings. *AJR* 1994;162:1211-1217.
3. Thomas BP, Strother MK, Donnelly EF, Worrell JA. CT virtual endoscopy in the evaluation of large airway disease: Review. *AJR* 2009;192:S20-230.

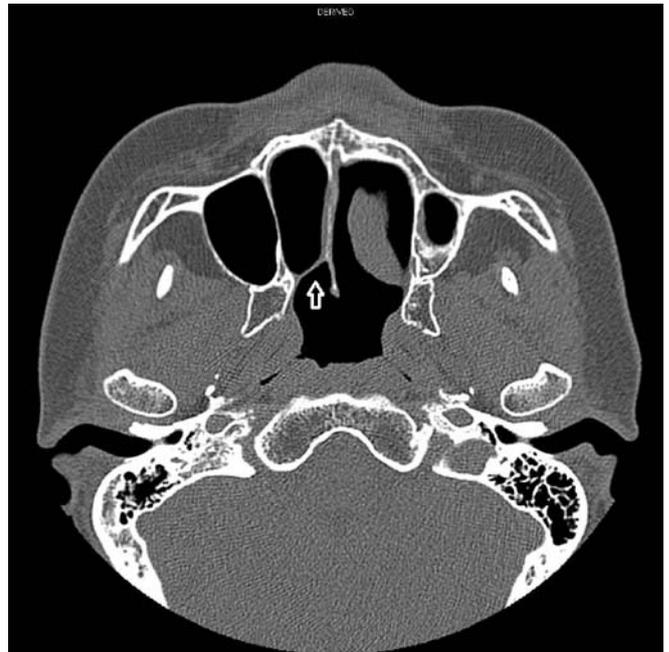


Fig. 1. Axial CT image demonstrates thin membrane occluding the right choanal lumen. No ossification is seen.

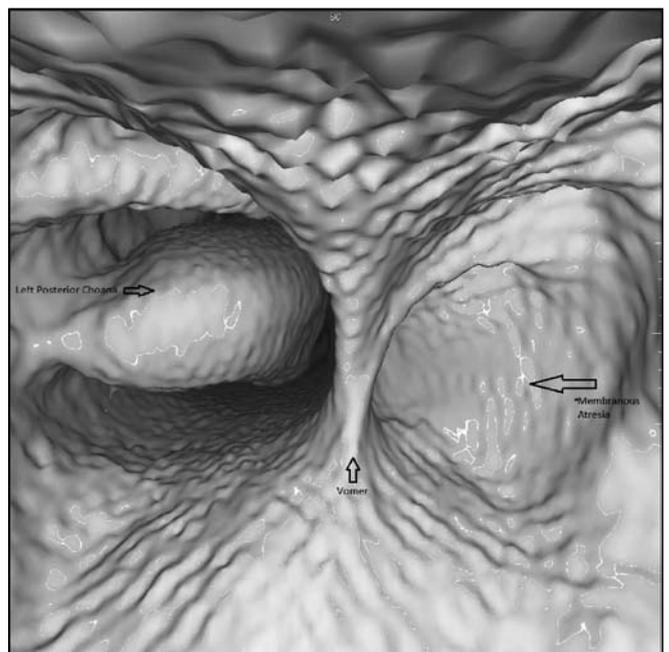


Fig. 2. Posterior nasopharynx CT virtual endoscopic view. Roof of nasopharynx above and soft palate below. Right-sided membranous atresia shown.