

# Clinical Quiz

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## Chronic unilateral nasal obstruction in children

### Clinical Presentation

An 11-year-old girl referred to us for evaluation of snoring and persistent right sided nasal obstruction and discharge, physical examination was unremarkable. Computed tomography (CT) of the nose was carried out (**Figure 1**).



**Figure 1** - Computer tomography of the sinusal region.

## Questions

1. Mention a differential diagnosis.
2. Describe the image.
3. What is the likely diagnosis?

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## Answers

1. Chronic rhinosinusitis, deviated nasal septum, foreign body in the nose, chronic specific infection such as diphtheria, syphilis, antrochoanal polyp, neoplasm and choanal atresia.
2. Axial CT scan of the nose and paranasal sinus without contrast shows obstruction of the right side posterior nares with air fluid level and medialized right pterygoid lamina.
3. Right-sided membranous choanal atresia.

## Discussion

Choanal atresia (CA) occurs in approximately 1 in 10,000 live births;<sup>1</sup> it is due to failure of the bucconasal membrane to rupture at the first trimester of gestation.<sup>2</sup> The atresia may be unilateral, bilateral, membranous or bony. Although bilateral atresia is a medical emergency in newborns, as they are obligate nasal breathers, unilateral atresia may go undiagnosed in infants, since it is possible to breathe with one patent nasal passage. Respiratory distress in the newborn, bilateral nasal drainage, and a physician's inability to place a pediatric nasal catheter should raise a high level of suspicion of bilateral CA.<sup>3</sup> The CA may be associated with CHARGE syndrome.<sup>1</sup> When CA is suspected; a complete nasal and nasopharyngeal examination should be performed using a flexible fiberoptic endoscope to assess the deformity. Computed tomography is the radiographic procedure of choice in evaluation of CA.<sup>4</sup> The CA repair can be performed by many different surgical methods. Each of these techniques has its advantages and disadvantages. With the introduction of the endoscope and powered instruments for the transnasal approach, better precision and minimal complications and restenosis have made it the procedure of choice.<sup>5</sup>

## References

1. Harris J, Robert E, Kallen B. Epidemiology of choanal atresia with special reference to the CHARGE association. *Pediatrics* 1997; 99: 363-367.
2. Hengerer AS, Strome M. Choanal atresia: A new embryologic theory and its influence on surgical management. *Laryngoscope* 1982; 92: 913-921.
3. Muntz HR. Choanal atresia. In: Gates GA, editor. Current therapy in otolaryngology head and neck surgery. St. Louis (MO), Mosby; 1998. p. 389-391.
4. Crockett DM, Healy GB, McGill TJ, Friedman EM. Computed tomography in the evaluation of choanal atresia in infants and children. *Laryngoscope* 1987; 97: 174-183.
5. Hackman TG, Ferguson BJ. Powered instrumentation and tissue effects in the nose and paranasal sinuses. *Curr Opin Otolaryngol Head Neck Surg* 2005; 13: 22-26.