

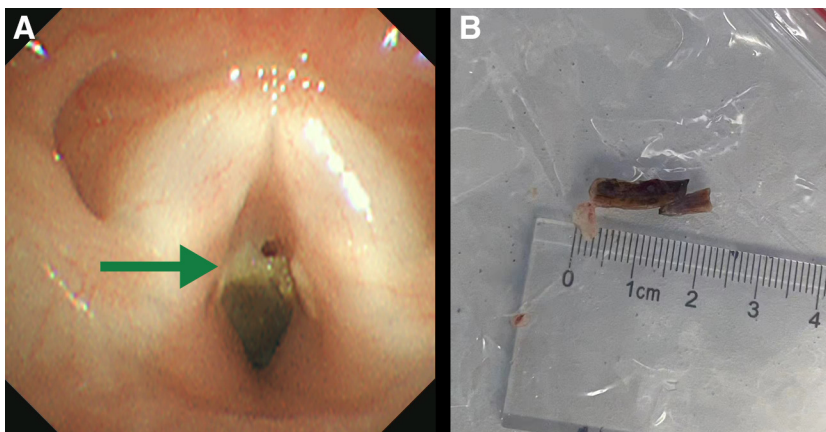
# Subglottic airway foreign body in an 18-month-old girl

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A previously healthy 18-month-old girl presented to a local hospital with a 2-day history of dry cough, hoarse voice and difficulty breathing. There was no history of aspiration. Despite therapy with nebulized budesonide (4 mg/d, twice daily) and oral dextromethorphan syrup (1 mg/kg/d, twice daily) for 2 days for presumed croup, the patient's respiratory status did not improve and she was referred to our institution. Stable vital signs, biphasic stridor, increased work of breathing and intercostal retractions (for a video, see Appendix 1 at [www.cmaj.ca/lookup/doi/10.1503/cmaj.220544/tab-related-content](http://www.cmaj.ca/lookup/doi/10.1503/cmaj.220544/tab-related-content)) prompted further investigations for a foreign body. Computed tomography of her neck and chest showed normal findings. On day 2, a flexible bronchoscopy examination found a thin, sharp shell of a sunflower seed embedded in the patient's subglottic airway, which was removed with a grasping basket (Figure 1A and 1B). We discharged her on day 6 with complete, uneventful recovery.

Foreign body aspiration accounts for 7% of accidental deaths in children aged 4 years and younger.<sup>1</sup> Upper airway foreign body aspiration often manifests with stridor that can mimic croup. This patient presented with biphasic stridor owing to a fixed airflow obstruction from a shell of a sunflower seed. Nuts and seeds are the most commonly aspirated foreign bodies and should be avoided for children aged 4 years and younger. Oral dexamethasone is recommended for children with croup, although inhaled budesonide was chosen in this case.<sup>2,3</sup> The antitussive dextromethorphan, available in many over-the-counter cough and cold preparations, is not suggested for use in children aged 6 years and younger in Canada.<sup>4</sup> Computed tomography has been used to identify airway foreign bodies, but has notable radiation exposure and may not identify small radiolucent objects; bronchoscopy is the definitive test and facilitates removal.<sup>5</sup>



**Figure 1:** (A) Flexible bronchoscopy image of the subglottic airway of an 18-month-old girl with stridor showing an embedded thin, flat and sharp foreign body (arrow). (B) The shell of a sunflower seed (about 2.0 cm in length) that was removed from the patient's airway with a grasping basket.

Upper airway obstruction from inhaled foreign bodies should be considered in children presenting with fixed or biphasic stridor, or stridor unresponsive to typical therapy for croup.

## References

- Okonkwo OC, Simons A, Nichani J; North West ENT Research Collaborative. Paediatric airway foreign body — the human factors influencing patient safety in our hospitals. *Int J Pediatr Otorhinolaryngol* 2016;91:100-4.
- Bjornson CL, Klassen TP, Williamson J, et al; Pediatric Emergency Research Canada Network. A randomized trial of a single dose of oral dexamethasone for mild croup. *N Engl J Med* 2004;351:1306-13.
- Gates A, Gates M, Vandermeer B, et al. Glucocorticoids for croup in children. *Cochrane Database Syst Rev* 2018;(8):CD001955.
- Concerns about children's medication (Avoiding cough and cold medications). Ottawa: Health Canada; 2021. Available: <https://www.canada.ca/en/health-canada/services/drugs-medical-devices/concerns-about-children-s-medication.html> (accessed 2021 Jan. 18).
- Chen Q, Chu H, Tao Y, et al. Lessons learned from 35 cases of laryngeal foreign bodies undergoing misdiagnosis in pediatric population. *Ann Otol Rhinol Laryngol* 2017;126:146-51.

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