CHAPTER 123

Stridor and Drooling in Infants and Children

Elisa Mapelli
Vikram Sabhaney

REFERENCES

1. Hardison SA, Dodson KM, Rhodes JL: Subglottic hemangioma treated with propranolol. Eplasty. 2014. http://www-ncbi-nlm-nih-gov.ezproxy.library.ubc.ca/pmc/articles/PMC3897218/. Accessed September 10, 2014.
2. Bajaj Y, Kapoor K, Ifeacho S, et al: Great Ormond Street Hospital treatment guidelines for use of propranolol in infantile isolated subglottic haemangioma. *J Laryngol Otol* 127: 295, 2013. [PMID: 23369213]
3. Fuchsmann C, Quintal M-C, Giguere C, et al: Propranolol as first-line treatment of head and neck hemangiomas. *Arch Otolaryngol Head Neck Surg* 137: 471, 2011. [PMID: 21576558]
4. Marx A, Török TJ, Holma RC, Clarke MJ, Anderson LJ: Pediatric hospitalizations for croup (laryngotracheobronchitis): biennial increases associated with human parainfluenza virus 1 epidemics. *J Infect Dis* 176: 1423, 1997. [PMID: 9395350]
5. Petrocheilou A, Tanou K, Kalampouka E, Malakasioti G, Giannios C, Kaditis AG: Viral croup: diagnosis and a treatment algorithm. *Pediatr Pulmonol* 49: 421, 2014. [PMID: 24596395]
6. Miller EK, Gebretsadik T, Carroll KN, et al: Viral etiologies of infant bronchiolitis, croup and upper respiratory illness during 4 consecutive years. *Pediatr Infect Dis J* 32: 950, 2013. [PMID: 23694832]
7. Rihkanen H, Rönkkö E, Nieminen T, et al: Respiratory viruses in laryngeal croup of young children. *J Pediatr* 152: 661, 2008. [PMID: 18410770]
8. Bjornson C, Johnson D: Croup in children. *CMAJ* 185: 1317, 2013. [PMID: 23939212]
9. Moore M, Little P: Humidified air inhalation for treating croup. *Cochrane Database Syst Rev* 3: CD002870, 2006. [PMID: 16855994]
10. Neto GM, Kentab O, Klassen TP, Osmond MH: A randomized controlled trial of mist in the acute treatment of moderate croup. *Acad Emerg Med* 9: 873, 2002. [PMID: 12208675]
11. Guideline for the diagnosis and management of croup. Alberta, Ontario, Canada: Alberta Medical Association, 2008. http://www.topalbertadoctors.org/informed_practice/clinical_practice_guidelines/complete%20set/Croup/croup_guideline.pdf. Accessed December 11, 2008.
12. Westley CR, Cotton EK, Brooks JG: Nebulized racemic epinephrine by IPPB for the treatment of croup: a double-blind study. *Am J Dis Child* 132: 484, 1978. [PMID: 347921]
13. Taussig LM, Castro O, Beaudry PH, et al: Treatment of laryngotracheobronchitis (croup): use of intermittent positive-pressure breathing and racemic epinephrine. *Am J Dis Child* 129: 790, 1975. [PMID: 1096594]
14. Waisman Y, Klein BL, Boenning DA, et al: Prospective randomized double-blind study comparing L-epinephrine and racemic epinephrine aerosols in the treatment of laryngotracheitis (croup). *Pediatrics* 89: 302, 1992. [PMID: 1734400]
15. Fraser B: Nebulised levo-epinephrine as an alternative to racemic epinephrine in pediatrics. *Can J Hosp Pharm* 48: 303, 1995.
16. Bjornson C, Russell K, Vandermeer B, Klassen TP, Johnson DW: Nebulized epinephrine for croup in children. *Cochrane Database Syst Rev* 10: CD006619, 2013. [PMID: 24114291]
17. Ledwith CA, Shea LM, Mauro RD: Safety and efficacy of nebulized racemic epinephrine in conjunction with oral dexamethasone and mist in the outpatient treatment of croup. *Ann Emerg Med* 25: 331, 1995. [PMID: 7864472]
18. Prendergast M, Jones JS, Hartman D: Racemic epinephrine in the treatment of laryngotracheitis: can we identify children for outpatient therapy? *Am J Emerg Med* 12: 613, 1994. [PMID: 7945599]
19. Geelhoed GC, Macdonald WB: Oral dexamethasone in the treatment of croup: 0.15 mg/kg versus 0.3 mg/kg versus 0.6 mg/kg. *Pediatr Pulmonol* 20: 362, 1995. [PMID: 8649915]
20. Russell KF, Liang Y, O'Gorman K, Johnson DW, Klassen TP: Glucocorticoids for croup. *Cochrane Database Syst Rev* 1: CD001955, 2011. [PMID: 21249651]
21. Dobrovoljac M, Geelhoed GC: How fast does oral dexamethasone work in mild to moderately severe croup? A randomized double-blinded clinical trial. *Emerg Med Australas* 24: 79, 2012. [PMID: 22313564]
22. Fifoot AA, Ting JY: Comparison between single-dose oral prednisolone and oral dexamethasone in the treatment of croup: a randomized, double-blinded clinical trial. *Emerg Med Australas* 19: 51, 2007. [PMID: 17305661]
23. Chub-Uppakarn S, Sangsupawanich P: A randomized comparison of dexamethasone 0.15 mg/kg versus 0.6 mg/kg for the treatment of moderate to severe croup. *Int J Pediatr Otorhinolaryngol* 71: 473, 2007. [PMID: 17208307]
24. Weber JE, Chudnofsky CR, Younger JG, et al: A randomized comparison of helium-oxygen mixture (heliox) and racemic epinephrine for the treatment of moderate to severe croup. *Pediatrics* 107: E96, 2001. [PMID: 11389294]
25. Terregino C, Nairn S, Chansky M, et al: The effect of heliox on croup: a pilot study. *Acad Emerg Med* 5: 1130, 1998. [PMID: 9835482]
26. Vorwerk C, Coats TJ: Use of helium-oxygen mixtures in the treatment of croup: a systematic review. *Emerg Med J* 25: 547, 2008. [PMID: 18723697]
27. Johnson D: Croup. Clin Evid 2009, Online. http://www-ncbi-nlm-nih-gov.ezproxy.library.ubc.ca/pubmed/19445760. Accessed November 19, 2014.
28. Moraa I, Sturman N, McGuire T, van Driel ML: Heliox for croup in children. *Cochrane Database Syst Rev* 12: CD006822, 2013. [PMID: 24318607]
29. Moore M, Little P: Humidified air inhalation for treating croup: a systematic review and meta-analysis. *Fam Pract* 24: 295, 2007. [PMID: 17602176]
30. Tibballs J, Watson T: Symptoms and signs differentiating croup and epiglottitis. *J Paediatr Child Health* 47: 77, 2011. [PMID: 21091577]
31. Salamone F, Bobbitt D, Myer C, et al: Bacterial tracheitis reexamined: is there a less severe manifestation? *Otolaryngol Head Neck Surg* 131: 871, 2004. [PMID: 15577783]
32. Santiago R, Rittichier K: Bacterial tracheitis: a case report and review of the literature. *Int Pediatr* 18: 213, 2003.
33. Hopkins A, Lahiri T, Salerno R, Heath B: Changing epidemiology of life-threatening upper airway infections: the reemergence of bacterial tracheitis. *Pediatrics* 118: 1418, 2006. [PMID: 17015531]
34. Brook I: Aerobic and anaerobic microbiology of bacterial tracheitis in children. *Clin Infect Dis* 20: S222, 1995. [PMID: 7548559]
35. Shargorodsky J, Whittemore KR, Lee GS: Bacterial tracheitis: a therapeutic approach. *Laryngoscope* 120: 2498, 2010. [PMID: 21108480]
36. Tebruegge M, Pantazidou A, Thorburn K, et al: Bacterial tracheitis: a multi-centre perspective. *Scand J Infect Dis* 41: 548, 2009. [PMID: 19401934]
37. Sersar SI, Rizk WH, Bilal M, et al: Inhaled foreign bodies: presentation, management and value of history and plain chest radiography in delayed presentation. *Otolaryngol Head Neck Surg* 134: 92, 2006. [PMID: 16399187]
38. Wiseman NE: The diagnosis of foreign body aspiration in childhood. *J Pediatr Surg* 19: 531, 1984. [PMID: 6502421]
39. Zerella JT, Dimler M, McGill LC, Pippus KJ: Foreign body aspiration in children: value of radiography and complications of bronchoscopy. *J Pediatr Surg* 33: 1651, 1998. [PMID: 9856887]
40. Martinot A, Closset M, Marquette C, et al: Indications for flexible versus rigid bronchoscopy in children with suspected foreign-body aspiration. *Am J Respir Crit Care Med* 155: 1676, 1997. [PMID: 9154875]
41. Righini CA, Morel N, Karkas A, et al: What is the diagnostic value of flexible bronchoscopy in the initial investigation of children with suspected foreign body aspiration? *Int J Pediatr Otolaryngol* 71: 1383, 2007.
42. Black RE, Johnson DG, Matlak ME: Bronchoscopic removal of aspirated foreign bodies in children. *J Pediatr Surg* 29: 682, 1994. [PMID: 8035283]
43. Brown JC, Chapman T, Klein EJ, et al: The utility of adding expiratory or decubitus chest radiographs to the radiographic evaluation of suspected pediatric airway foreign bodies. *Ann Emerg Med* 61: 19, 2013. [PMID: 22841172]
44. Mortellaro VE, Iqbal C, Fu R, Curtis H, Fike FB, St. Peter SD: Predictors of radiolucent foreign body aspiration. *J Pediatr Surg* 48: 1867, 2013. [PMID: 24074659]
45. Zerella JT, Dimler M, McGill LC, Pippus KJ: Foreign body aspiration in children: value of radiography and complications of bronchoscopy. *J Pediatr Surg* 33: 1651, 1998. [PMID: 9856887]
46. Gupta P, Jain A: Foreign bodies in upper aero-digestive tract: a clinical study. *Int J Res Med Sci* 2: 886, 2014.
47. Tan HKK, Brown K, McGill T, Kenna MA, Lund DP, Healy GB: Airway foreign bodies (FB): a 10-year review. *Int J Pediatr Otorhinolaryngol* 56: 91, 2000. [PMID: 11115682]
48. Al-Sabah B, Bin Salleen H, Hagr A, et al: Retropharyngeal abscess in children: 10-year study. *J Otolaryngol* 33: 352, 2004. [PMID: 15971649]
49. Craig F, Schunk J: Retropharyngeal abscess in children: clinical presentation, utility of imaging, and current management. *Pediatrics* 111: 1394, 2003. [PMID: 12777558]
50. Lee S, Schwartz R, Bahadori R: Retropharyngeal abscess: epiglottitis of the new millennium. *J Pediatr* 138: 435, 2001. [PMID: 11241059]
51. Coticchia JM, Getnick GS, Yun RD, Arnold JE: Age-, site-, and time-specific differences in pediatric deep neck abscesses. *Arch Otolaryngol Head Neck Surg* 130: 201, 2004. [PMID: 14967751]
52. Martin CA, Gabrillargues J, Louvrier C, Saroul N, Mom T, Gilain L: Contribution of CT scan and CT-guided aspiration in the management of retropharyngeal abscess in children based on a series of 18 cases. *Eur Ann Otorhinolaryngol Head Neck Dis*. http://www.sciencedirect.com/science/article/pii/S1879729614000325. Accessed November 19, 2014.
53. Chuang SY, Lin HT, Wen YS, Hsu FJ: Pitfalls of CT for deep neck abscess imaging assessment: a retrospective review of 162 cases. *B-ENT* 9: 45, 2013. [PMID: 23641590]
54. Grisaru-Soen G, Komisar O, Aizenstein O, Soudack M, Schwartz D, Paret G: Retropharyngeal and parapharyngeal abscess in children—epidemiology, clinical features and treatment. *Int J Pediatr Otorhinolaryngol* 74: 1016, 2010. [PMID: 20598378]
55. Freling N, Roele E, Schaefer-Prokop C, Fokkens W: Prediction of deep neck abscesses by contrast-enhanced computerized tomography in 76 clinically suspect consecutive patients. *Laryngoscope* 119: 1745, 2009. [PMID: 19551850]
56. Vural C, Gungor A, Comerci S: Accuracy of computerized tomography in deep neck infections in the pediatric population. *Am J Otolaryngol* 24: 143, 2003. [PMID: 12761699]
57. Stone ME, Walner DL, Koch BL, Egelhoff JC, Myer CM: Correlation between computed tomography and surgical findings in retropharyngeal inflammatory processes in children. *Int J Pediatr Otorhinolaryngol* 49: 121, 1999. [PMID: 10504018]
58. Brook I: Microbiology and management of peritonsillar, retropharyngeal, and parapharyngeal abscesses. *J Oral Maxillofac Surg* 62: 1545, 2004. [PMID: 15573356]
59. Ozbek C, Aygenc E, Tuna EU, et al: Use of steroids in the treatment of peritonsillar abscess. *J Laryngol Otol* 118: 439, 2004. [PMID: 15285862]
60. Parhiscar A, Har-El G: Deep neck abscess: a retrospective review of 210 cases. *Ann Otol Rhinol Laryngol* 110: 1051, 2001. [PMID: 11713917]
61. Mark DG, Granquist EJ: Are prophylactic oral antibiotics indicated for the treatment of intraoral wounds? *Ann Emerg Med* 52: 368, 2008. [PMID: 18819178]
62. Brietzke SE, Jones DT: Pediatric oropharyngeal trauma: what is the role of CT scan? *Int J Pediatr Otorhinolaryngol* 69: 669, 2005. [PMID: 15850688]

USEFUL WEB RESOURCES

Radiology Cases in Pediatric Emergency Medicine—http://www.hawaii.edu/medicine/pediatrics/pemxray/pemxray.html

Virtual Pediatric Hospital—http://www.virtualpediatrichospital.org/providers/ElectricAirway/ElectricAirway.shtm