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## Recurrent croup: Predictors of ENT referral and microlaryngobronchoscopy findings in a 10-year cohort

Noon Nassr

Mid Yorkshire Teaching Hospital Trust, UK

**Introduction:** Croup is common in early childhood, but a subset experience recurrent episodes requiring repeat hospital visits. Indications for ENT referral and microlaryngobronchoscopy (MLB) remain unclear, with variable practice across centres. This study evaluated characteristics, MLB yield, and predictors of referral and abnormal findings in children with recurrent croup.

**Methods:** A 10-year retrospective cohort study (2013–2023) was conducted at Mid Yorkshire Teaching NHS Trust, UK. Children <18 years with recurrent croup ( $\geq 2$  episodes in 12 months or clinician diagnosis) were identified from A+E and ENT records. Outcomes were ENT referral, MLB performance, and abnormal MLB findings. Associations were tested using logistic regression.

**Results:** Of 1,995 children presenting with croup, 128 met recurrent criteria. Median age at first episode was 13.5 months (IQR 8–22) with a median of 5 episodes (IQR 3–8). ENT referral occurred in 62/128 (48.4%), and 34/62 (54.8%) underwent MLB. Findings were normal in 13/34 (38.2%). Abnormalities included subglottic lesions/stenosis (10/34, 29.4%), dynamic airway collapse (4/34, 11.8%), reflux/inflammatory changes (3/34, 8.8%), and vocal cord pathology (3/34, 8.8%). Children with abnormal MLB had more hospital admissions than those with normal scopes (median 2 vs 1,  $p=0.006$ ). ENT-referred children were more likely to be premature (25.8% vs 10.6%,  $p=0.025$ ) or have GORD (24.2% vs 9.1%,  $p=0.021$ ), but in multivariable models only the total number of croup episodes independently predicted referral (aOR 1.09 per episode, 95% CI 1.01–1.19,  $p=0.031$ ). No factors predicted abnormal MLB.

**Conclusion:** Almost half of children with recurrent croup were referred to ENT, but only one in four of the full cohort underwent MLB, and most scopes were normal. Clinically significant pathology was uncommon and not predicted by baseline features. These findings support reserving MLB for red-flag cases rather than recurrence alone and highlight the need for standardised referral thresholds.

### Recent Publications

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3. Hiebert JC, Zhao YD, Willis EB. Bronchoscopy findings in recurrent croup: A systematic review and meta-analysis. International Journal of Pediatric Otorhinolaryngology. 2016 Nov;90:86–90.
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## Biography

Noon Nassr is a core surgical trainee in the United Kingdom with the aim of specialising in otolaryngology. She has a strong clinical interest in paediatric ENT, with experience across emergency, inpatient and outpatient services. Beyond research, she is actively involved in surgical training and teaching, supporting junior colleagues and contributing to multidisciplinary learning.

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