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Title: Heterogeneity of findings in exercise induced inspiratory stridor (EIS)

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Body: Introduction EIS has been attributed to inappropriate adduction of the vocal cords (VCD), often without laryngoscopic verification. Some researchers have argued that VCD may be diagnosed from a medical history or symptoms alone, and that laryngoscopy is difficult and unnecessary. This strongly contradicts our experience, with EIS being associated with a broad spectrum of abnormalities in more than 500 patients tested since 1998, without adverse events. Aim To demonstrate the heterogeneity of findings from continuous laryngoscopy performed during maximal exercise (CLE-test) during 2012 at our institution. Method Patients presenting with EIS at our institution during the past 15 years have been offered diagnostic examination with the CLE-test, according to our published method; in 2012 performed in 64 new referrals. Results Sixty-three successful tests were performed (72% female; age range 7-62 years of whom 65% range 13-18). Despite similar symptoms, laryngeal findings varied widely. Inappropriate movements of supraglottic structures were the primary obstructing event in 60%, severely impeding the laryngeal inlet in 10% with corresponding severe respiratory distress. In 36% epiglottic abnormalities were observed, seemingly disturbing airflow. Secondary adduction of vocal folds was observed in a large proportion, while primary vocal fold adduction was rare (9%). Extra-laryngeal abnormalities were suspected in seven (11%). Conclusion EIS has different origins. Adduction of supraglottic structures and not the vocal folds was the inciting event in a majority. EIS should not be linked to VCD without laryngoscopic verification, which is a safe procedure revealing findings of therapeutic consequences.