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Life-threatening, first reported, paradoxical bronchospasm after Nebulised Salbutamol in a 10 year old child
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Introduction: Paradoxical bronchospasm describes an unexpected, rare and under recognised, adverse life threatening reaction of bronchoconstriction following β2 adrenergic receptor agonist inhalation. Several previous case reports have been described in adults, but to our knowledge, none in children.

Case Report: A 10-year-old boy, with a history of intermittent asthma and sensitisation to dust mites was admitted for an asthma exacerbation. Following an initial improvement, he developed a sudden unexplained severe cyanotic episode with loss of consciousness and bradycardia a few seconds after salbutamol neb. He was admitted to ICU where prednisolone, aminophylline and nebulised salbutamol were administered. He was discharged on a Formoterol/budesonide inh. combination. One month later, during a scheduled visit, a spirometry test with bronchodilation was performed. A few second after salbutamol inhalation, a sharp drop of FEV1 was noted (from 96% to 35% of predicted value) while the boy developed severe respiratory distress and ultimately silent chest and cyanosis. He was transferred to ICU and treated with oxygen, nebulised ipratropium, systematic corticosteroids with gradual clinical improvement. The patient's respiratory distress resolved over 20 min and completely normalised within 2 h. Both events were attributed to paradoxical bronchospasm following salbutamol. In the past, when the patient had tolerated salbutamol on several occasions, there has always been a co-administration of systematic steroid treatment, that may have had a protective effect. It is also worth noting that there is a family history of similar adverse bronchoconstrictive reactions to salbutamol.

Conclusion: Salbutamol is one of the most common and effective rescue bronchodilator medications used to treat asthma. Yet, paradoxical life threatening bronchospasm, is a well described adverse effect in adults. While a massive influx of eosinophils has been proposed, the exact mechanism remains unknown. A high index of awareness of this adverse effect can be life saving to the patient.