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IMAGES IN PAEDIATRICS

# Severe asthma resistant to biological treatment?

## ¿Asma grave resistente a tratamiento biológico?

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A female adolescent aged 13 years referred from another centre for assessment of cervical dyspnoea, stridor and dry cough associated with exercise from age 11 years. She practiced gymnastics and reported symptoms with decreasing levels of exertion and refractory to salbutamol.

The values in the baseline spirometry were: $FEV_1$, 105%, $FEV_1$/FVC 81%, normal PBD and FeNO. The total IgE level was 680 kU/L, with evidence of sensitization to pollen, Alternaria and dogs.

Although the stridor and cervical dyspnoea did not support it, the patient eventually received a diagnosis of asthma after the positive results of the exercise challenge test ($FEV_1$ drop, 39%). The patient was given a prescription for fluticasone, budesonide-formoterol, montelukast and ipratropium, but did not improve. For this reason, at age 12 years she started treatment with omalizumab, but the lack of response called for considering alternative diagnosis or comorbidities.[1,2] The findings of the high-resolution CT scan and the fibreoptic bronchoscopy examination were normal.

The stridor and cervical dyspnoea suggested some form of exercise-induced laryngeal obstruction (EILO). A continuous laryngoscopy during exercise test was conducted to assess for the development of laryngeal obstruction,[3] during which the symptoms recurred, with observation of and paradoxical adduction of the vocal cords and glottal closure during inspiration, which confirmed the diagnosis (Appendix A, video/image 1). The post-exercise spirometry showed flattening of the inspiratory loop.

The patient was managed with relaxation techniques and physical therapy, which achieved improvement of symptoms. In subsequent evaluations, she reported cough and wheezing in the spring responsive to salbutamol, which resulted in diagnosis of mild intermittent asthma, although the symptoms attributable to EILO continued to predominate.

We concluded that, as is the case with asthma, EILO is a fundamentally clinical diagnosis, so that tests like high-resolution CT or flexible fibreoptic bronchoscopy are not indicated. This case demonstrates that asthma and EILO may co-occur.

## Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.anpede.2024.03.018.

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