We report the clinical cases of three male children, two aged 6 and the other 9 years old. None had a known previous history of respiratory or allergic disease. Clinical presentation in all was with dry cough for one to two days, associated with chest pain in two cases and dyspnea in the other. Physical examination at the emergency service showed polypnea and lung auscultation was positive for increased expiratory time and bilateral wheezing in all 3 patients. Hypoxaemia (peripheral oxygen saturation ≤ 92%) was noticed in two and only in one subcutaneous cervical emphysema was detected. A chest radiograph was performed in all the 3 patients which were diagnostic for pneumomediastinum and subcutaneous emphysema (Figs. 1 and 2). All patients were hospitalized and treatment consisted of oxygen therapy, analgesia, rest, avoiding manoeuvres that would increase intra-abdominal pressure, inhaled bronchodilators and systemic corticosteroids. Clinical evolution was favourable and the patients were discharged between the third and sixth day. All patients were referred to outpatient pediatric respiratory clinic and in all allergen sensitivity was diagnosed. Spirometry with bronchodilatation test revealed bronchial and bronchiolar obstruction with a positive bronchodilatation test in two of the cases (Fig. 3). The acute episode of pneumomediastinum was the inaugural manifestation for the diagnosis of asthma in all three cases.

Spontaneous pneumomediastinum is a rare situation in the paediatric population and the most frequent cause is asthma. The literature emphasizes the occurrence of under-diagnosis in children and there are few descriptions of cases with this association. An episode of spontaneous pneumomediastinum should imply a structured clinical history with a high degree of suspicion for an exacerbation of asthma, because in addition to the conservative treatment, an appropriate treatment of the cause is needed. With a safety interval, at least spirometry with bronchodilatation test should be carried out. We emphasize that in cases of exacerbation of asthma with intense chest pain or dysphonia, subcutaneous emphysema should be investigated and chest radiograph performed to exclude pneumomediastinum.
Keywords: Asthma/diagnosis; Child; Mediastinal Emphysema/complications; Mediastinal Emphysema/diagnosis; Pneumothorax/complications; Pneumothorax/diagnosis

Conflicts of Interest
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Protection of human and animal subjects
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Confidentiality of data
The authors declare that they have followed the protocols of their work centre on the publication of patient data.

WHAT THIS REPORT ADDS

• Spontaneous pneumomediastinum is a rare situation, under-diagnosed in the emergency service.

• Children with an episode of spontaneous pneumomediastinum should be referred, after discharge, for specialized clinic, and after a safety interval, perform at least spirometry and bronchodilation test.

• Chest pain, dyspnea and dysphonia in a child, without a previous history of chest trauma, requires the diagnosis work-up for the existence of cervical and chest emphysema and after resolution the reference to an asthma clinic.

References