Spontaneous Pneumomediastinum: Is It a Sign of Severity, or Does It Depend on the Underlying Respiratory Process? 1,2

El neumomediatino espontáneo: ¿indica «gravezada» o esta depende del proceso respiratorio subyacente?

Dear Editor,

With regard to the question we pose in the title, we would like to comment on spontaneous pneumomediastinum (SPM).

We have read with great interest the recently published Letter to the Editor, “A Child With Severe Pneumomediastinum and ABCA3 Gene Mutation: A Puzzling Connection”.1 We are interested in the relationship described between mutations of the ABCA3 gene and certain pulmonary pathologies associated with alterations in the surfactant. However, we disagree with the transcendental role that the authors attribute to SPM and its status of severity, which we believe to be inaccurate. Furthermore, we believe that what should be explored is the relationship between these genetic alterations and the pulmonary pathology that leads to the SPM, as the latter is just a consequence (presence of air in the mediastinum with no known cause).

SPM is a rare pathology in children and adults.2,3 It is observed as a consequence of an increase in intra-alveolar pressure, alveolar rupture and migration of the air dissecting the peribronchial and perivascular sheaths of the pulmonary hilum, extending to the mediastinum.2–5 This, at the same time, can propagate towards the subcutaneous, endothoracic and peritoneal tissue, and even to the spinal canal. This mechanism is also known as the “Macklin effect”, as Macklin was able to demonstrate this experimentally in 1937 by inflating the bronchi of cats. A few years later, Hamman made the first clinical report.4

Predisposing conditions that have been described include asthma, interstitial pulmonary diseases, COPD, bronchiectasis, lung cysts and lung cancer, among others. An increase in intra-alveolar pressure produced, for example, during vomiting, the inhalation of toxins, intense cough, physical exercise or childbirth, together with bronchopulmonary infections or the ingestion of a foreign body, may trigger an SPM.5 The patient who was reported had presented acute respiratory infection associated with cough.1

SPM is considered a process with little clinical impact and a good prognosis.2–5 It requires no more than oxygen therapy, analgesia, follow-up and treatment of the underlying cause, after which it completely resolves in a matter of a few days. Poor patient evolution is usually caused by the associated underlying lung disease. Tension pneumothorax and pneumopericardium are the exceptions: these should be considered severe and required specific treatment (emergency drainage).3,6

In our setting, pneumomediastinum and later subcutaneous emphysema are often a cause for panic in patients, family members and even some health-care staff, which may sometimes lead to inappropriate behavior and treatment. We therefore believe that it is important to clarify the true meaning of SPM.

References


Peripheral Polyneuropathy in a Patient With Severe Chronic Obstructive Pulmonary Disease

Polineuropatía periférica en un paciente con enfermedad pulmonar obstructiva crónica grave

Dear Editor,

Peripheral neuropathy (PN) is a disease that affects the peripheral nerves due to any number of causes (hereditary, infectious, toxic, etc.). It may be classified according to the number of nerves that are affected, as mono or polyneuropathy, and according to the affection of the nerve structure, as demyelinating, axonal or mixed.

We present an 80-year-old patient, who has been an ex-smoker for the last 30 years, with an accumulated tobacco consumption of 70 pack-years. The subject had been diagnosed with chronic obstructive pulmonary disease (COPD) with severe airflow obstruction (post-bronchodilator forced expiratory volume in 1 s [FEV1.] of 40%) and had been treated with long-term home oxygen therapy at 2 l/min, 24 h/day (PaO2 in stable phase 64 mmHg with oxygen and 46 mmHg without) for more than 10 years. The last COPD exacerbation was in 2010.

The patient came to our pulmonology consultation for a scheduled visit in May 2011. During this visit, he reported having a burning chest pain which made it difficult to breathe. The pain was daily and continuous, although it improved when lying down, and became more intense in the evening. The patient also complained of a tickling sensation in both feet and in the right thigh, with numbness of the internal dorsum of the left foot. Given the clinical suspicion for PN, an EMG was ordered, which revealed normal nerve conduction velocity with decreased nerve amplitude and with no positive sharp waves in either leg. The patient was sent to the neurology consultation for a complete study.

During follow-up, the patient presented neuropathic pain in both legs, and treatment was initiated with Hidroxil B1,B6,B12 and pregabalin at an increasing dosage until reaching 300 mg/day, with poor pain control. This therapy was therefore substituted with carbamazepine, which provided better control of the symptoms, although the patient currently continues to have paresthesia in the legs and occasional pain.

The actual prevalence of PN in COPD is currently unknown, although there are several studies that indicate a frequent affection of the peripheral nervous system, which on most occasions is subclinical.

In the physiopathology of PN in COPD, several factors have been implicated. Although for the moment we do not precisely understand its contributing role, hypoxemia could be the main factor in the development of this type of PN. The neurophysiological characteristics are compatible with an axonal polyneuropathy with predominantly motor involvement (Table 1) and greater affection of the legs, although it may involve any region.

Table 1
Electromyographic Characteristics of Peripheral Neuropathies (PN).

<table>
<thead>
<tr>
<th>Motor fibers</th>
<th>Sensory fibers</th>
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<tbody>
<tr>
<td>Axonal PN</td>
<td>Low</td>
</tr>
<tr>
<td>Demyelinating PN</td>
<td>Low</td>
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</tbody>
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Modified from Gupta and Agarwal.

In conclusion, PN seems to be a relatively frequent affection in patients with COPD, especially in more hypoxic patients who are treated with home oxygen, as in the case of our patient. Although the affection is usually subclinical, we should be alert to the appearance of compatible symptoms in order to reach a correct diagnosis and initiate early treatment of symptoms.

References
5. Gupta PP, Agarwal D. Chronic obstructive pulmonary disease and peripheral neuropathy. Lung India. 2006;23:25–33.

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