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Roberto Fornell-Pérez,* José Manuel Santana-Montesdeoca, and Paula Junquera-Rionda

Servicio de Radiodiagnóstico, Complejo Hospitalario Universitario Insular-Materno Infantil, Las Palmas de Gran Canaria, Spain

*Corresponding author.
E-mail address: feanim2000@yahoo.es (R. Fornell-Pérez).

Air Travel Pneumothorax as a First Sign of Metastasis of Cancer of theTongue

Neumotórax itinerante como primera manifestación de metástasis de un cáncer de lengua

To the Editor:

The case that we present (table 1), corresponds to a 68 year old woman with a 4 month history of squamous cell carcinoma of the tongue border treated with surgery and radiotherapy. After pneumothorax was overlooked in an emergency X-ray, the patient was admitted for 20-30% pneumothorax seen on a control CT. While studying this pneumothorax several metastases were discovered.

Coexistence of pneumothorax with malignant lung disease is very rare (0.37[1]-2%[2] of the total number of pneumothoraxes), and is the cause of pneumothorax in only 0.03-0.85% of spontaneous pneumothoraxes. When this malignant aetiology corresponds to secondary tumour disease, it is usually due to metastasis of osteogenic tumours, soft tissue sarcomas and germ cell tumours, and is especially frequent in cases in which chemotherapy has been administered.[3]

Four main theories exist to explain pneumothorax secondary to a metastasis, and these are; (1) direct tumour necrosis due to ischaemia of the tumour due to rapid growth, this conditions the bronchopleural fistula which causes the persistent air leakage[4]; (2) valvular mechanism due to bronchial stenosis due to growth of the neoplasm, which causes distal hyperinsufflation, which results in a bulla that finally ruptures towards the pleural cavity[4], (3) the existence of previous bronchitis or emphysematous bulla, which break due to perturbation of the pulmonary architecture secondary to cancer[2] and (4), on rare occasions, tumour involvement of the pleura.

The aetiopathogenic mechanism in this case could be on one hand due to rupture of subpleural cystic cavities towards the pleura, although it is not possible to rule out direct pleural involvement as a mechanism both of production and of perpetuation, given the fact that the pleural fluid obtained was positive for cells compatible with squamous cell carcinoma.

Head and neck squamous cell carcinomas have a great tendency to spread. Although the most frequently affected organs are the lungs, the production of spontaneous pneumothorax secondary to these carcinomas is extremely rare, and only 2 cases are described in the literature.[5,6]

To conclude, spontaneous pneumothorax associated with lung metastasis is a rare condition. Even so, pneumothorax may be the first sign of lung metastatic disease, and therefore in patients with a history of cancer it is necessary to rule this out.

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Table 1
Timelines of the patient's clinical evolution

4 months PRE admittance	• 68 year old woman • Moderately differentiated squamous cell carcinoma of the tongue border • Left hemiglossectomy+bilateral dissection (2 positive lymph nodes)
3 months to 1 month PRE admittance	• RT (110 Gy) from 3 months to 1 month PRE admittance
1 month PRE admittance	• RIGHT pneumothorax overlooked on X-ray • Clinical condition infection of upper airways+herpes zoster: Antibiotic therapy
Day 1 Admittance	• CT: 20-30% RIGHT pneumothorax. Multiple thin walled cysts. Solid node formation in RLL • Weight loss 4 kg • Placement of right ETD
Day 4 Admittance	• Resolution pneumothorax. ETD withdrawal
Day 6 Admittance	• Upper left lobe moderately differentiated squamous cell carcinoma
Day 8 Admittance	• Complete LEFT hydropneumothorax • Placement of left ETD • Pleural fluid: squamous cell carcinoma
Day 12 Admittance	• Resolution pneumothorax. ETD Withdrawal • Recurrence left pneumothorax. ETD placement
Day 16 Admittance	• CT: LUL pneumatocele. Costal and liver metastasis (PA: squamous cell carcinoma)
Day 30 Admittance	• Death

ETD, endothoracic drainage; LUL, left upper lobe; PA, pathological anatomy; RLL, right lower lobe; X-ray, chest X-ray.

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Néstor J. Martínez-Hernández,* José Marcelo Galbis-Caravajal, and Santiago Figueroa-Almanzar

Servicio de Cirugía Torácica, Consorci Hospital General Universitari de València, Valencia, Spain

*Corresponding author.
E-mail address: nessmartinez@hotmail.com (N.J. Martínez-Hernández).

Solitary Pulmonary Nodule in a Patient Exposed to Welding Fumes

Nódulo pulmonar solitario en paciente con exposición a humos de soldadura

To the Editor:

Pneumoconiosis, especially less common forms of the disease, can sometimes be difficult to diagnose. We present the case of a patient who is suffering from one of the rarer forms, whose differential diagnosis is worth presenting.

The patient was a 53-year-old male, an ex-smoker (44 pack-year exposure), with history of gastric ulcers, prostatitis and manic-depressive disorder. The patient records showed that a pulmonary nodule had been removed three years before in the right superior lobe, being histologically diagnosed as benign. He was referred to our department because an 0.8cm solitary pulmonary nodule was found in the left superior lobe. A bronchoscopy was performed which did not show any endobronchial lesions. The bronchial aspirate showed a negative result for malignant cells and negative culture. The patient's medical records indicated that he had been working as an iron welder for 30 years, being exposed to welding fumes without protective measures. It was for this reason that the nodules were diagnosed as being associated with pneumoconiosis. The biopsy of the nodule removed 3 years before was studied: the lesion was formed by a dense, fibrous nodule made up of layered concentric collagen fibres surrounded by abundant siderophages which were on the fibrosis, filling the small airways. Abundant birefringent particles were detected with the polarizing microscope, meaning that the final diagnosis was siderosis. No changes were found in the 3-year radiology follow-up for the nodule in the left lung, and the patient remained asymptomatic.

Siderosis is a type of pneumoconiosis which is not considered as fibrotic. Pulmonary nodules are often detected in radiographs and in most cases do not involve a serious condition. Diffuse pulmonary nodules are easier to recognise, as a diffuse multinodular pattern is detected on the chest x-ray. From a clinical point of view, continuous exposure to iron dust or fumes can produce chronic bronchitis or unspecific persistent symptoms such as coughing, occasional wheezing or sporadic flu-like symptoms. Cases of spontaneous pneumothorax have been noted in patients with siderosis,[1] while development of pulmonary fibrosis is rare.

Histological diagnosis of siderosis is of interest to us, given that there are no such cases published in Spain. However, the patient's medical records have also been highlighted as being important in the differential diagnosis of lung diseases. In effect, in cases where pneumoconiosis is presented in the form of solitary nodules,[3] the exposure that the patient has had is essential information. However, neoplasm diagnosis should always be rejected, especially if the patient is a smoker. In the series published regarding pulmonary nodules that were surgically resected, pneumoconiosis ranges between 2 and 3% of all pulmonary nodules, and just under 20% of benign pulmonary nodules.[2]

Siderosis is related (but not exclusively) to prolonged inhalation of welding fumes.[4] We believe that this case shows the need to emphasise how important it is for workers exposed to occupational agents, and more specifically welding fumes, to use preventative measures. Furthermore, we believe that pneumoconiosis and siderosis should be considered during the differential diagnosis of pulmonary nodules.

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Maria Asunción Seminario,[a,b,*] Maria Ángeles Montero,[c] and Jaume Ferrera,[b]

[a] *Servicio de Neumología, Hospital Universitario Vall d'Hebron, Universitat Autònoma de Barcelona (UAB), Barcelona, Spain*
[b] *CIBER de Enfermedades Respiratorias (CIBERES), Instituto Carlos III, Madrid, Spain*
[c] *Servicio de Anatomía Patológica, Hospital Universitario Vall d'Hebron, Barcelona, Spain*

*Corresponding author.
E-mail address: luceret_83@hotmail.com (M.A. Seminario).