

Phantom tumor of the lung

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The patient, S.B.E., was a 79-year-old black male, widowed, retired metallurgical employee from Espírito Santo, who had been living in Nova Iguaçu-RJ for 40 years, with uncontrolled hypertension and diabetes. He was admitted with a history of progressive dyspnea over the previous two months and currently had dyspnea at rest, orthopnea, paroxysmal nocturnal dyspnea, dry cough, and lower-limb edema.

At physical examination he was hydrated, afebrile, anicteric, acyanotic, tachypneic, and had normal skin color, jugular venous distension, and generalized body edema (anasarca). His respiratory system presented reduced vesicular murmur in the right lung and bibasilar crackles. His cardiovascular system showed presence of third heart sound, muffled heart sounds, and systolic murmur in the mitral area ++/6+. His abdomen was rounded, with wall edema, and slightly painful hepatomegaly. The lower limbs presented edema 4+/4+, free calves, and preserved pulses.

Laboratory tests showed no alterations, except for fasting glucose: 117 mg/dL. Posteroanterior (AP) and lateral chest X-rays showed an enlarged cardiac silhouette, bulky homogeneous rounded opacity (mass type) with well-defined borders, near the right horizontal fissure, and heterogeneous opacities in the lower thirds bilaterally, with opacification of the costophrenic sinuses, especially to the right (Figure 1A and 1B). Electrocardiogram showed left atrial overload, second-degree left bundle branch block (LBBB), first-degree atrioventricular block (AVB), and ventricular extrasystoles. The echocardiogram showed significant systolic dysfunction, diffuse hypokinesis, ejection fraction of 28%, moderate mitral regurgitation, mild tricuspid regurgitation, and evaluation of diastolic function impaired by frequent extrasystoles.

The diagnostic hypothesis was decompensated congestive heart failure (CHF) with the presence of phantom tumor of the lung.

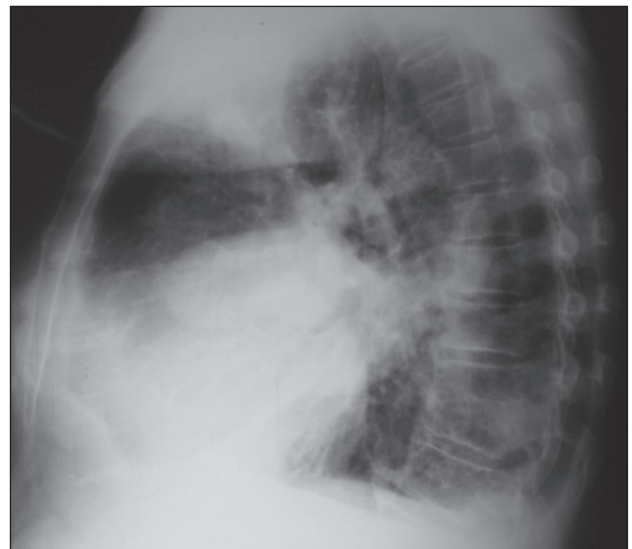
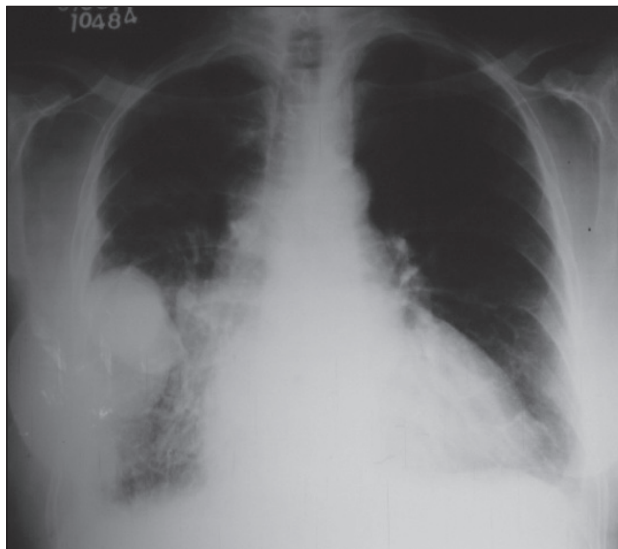


Figure 1 – PA (A) and lateral (B) chest X-rays show a well-delineated phantom tumor of the lung in the right horizontal fissure, enlarged cardiac silhouette and heterogeneous opacities in the lower thirds bilaterally, with opacification of the costophrenic sinuses, especially to the right.

The patient showed satisfactory improvement with the use of loop and potassium-sparing diuretics, angiotensin-converting enzyme inhibitors, and beta-blockers, compensating the CHF picture.

The diagnosis of phantom tumor was confirmed with the disappearance of the radiological image located at the right horizontal fissure after seven days of treatment (Figure 2); the patient was clinically compensated when discharged, and was referred to outpatient follow-up.



Figure 2 – Complete radiological resolution after seven days of treatment for congestive heart failure.

CHF can cause bilateral pleural effusion in the lower portions of the costal pleura, obliterating the costophrenic sinus when the patient is in the standing position. However, although infrequent, septated pleural effusion is a classical condition in this pathology, which is observed in the horizontal fissure to the right. This presentation has been termed phantom tumor of the lung, as it simulates a mass on the chest X-ray, which disappears after treatment of the underlying disease¹⁻⁴.

The diagnosis of phantom tumor is facilitated when there is evidence of fluid in the large pleural cavity. The phantom tumor is not always located in the horizontal fissure to the right; it can also be less often located to the left, or close to the mediastinum⁴.

The radiological appearance of the phantom tumor is variable, depending on the volume of septated liquid and its location⁴. It often presents as a homogeneous spherical or elliptical opacity at the horizontal fissures, with well-defined borders³⁻⁵. Lateral chest X-ray is important to better determine the location of the lesion in the pleural fissures.

After intravenous infusion of potent diuretics, radiological resolution can be observed in less than 24 hours. Injury recurrence can happen whenever there are subsequent cardiac decompensations⁴.

The early identification of this radiological finding related to CHF is important to prevent unnecessary diagnostic procedures and therapeutic errors, as the main differential diagnosis is pulmonary nodule and/or mass.

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