Apparent right mid-lung mass in a dyspneic man: The phantom lung tumor

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CASE REPORT

A 70-year-old male presented with complaints of dyspnoea on exertion of two years duration with recent worsening and additional orthopnoea and paroxysmal nocturnal dyspnoea. There was no history of chest pain, syncope or pedal edema. He had no significant past medical illness like diabetes, hypertension or coronary artery disease. Clinical examination revealed low volume regular pulse with blood pressure of 100/80 mmHg. His JVP (jugular venous pressure) was normal. There was no pedal edema. The cardiovascular system examination revealed aortic stenosis (AS), ejection systolic murmur at the aortic area and early diastolic murmur at the second aortic area (aortic regurgitation/AR). Auscultation over his lungs revealed florid bi-basal crackles. There was no evidence of free fluid or congestive hepatomegaly per abdomen. His electrocardiogram showed sinus tachycardia with low voltage complexes. The Chest X-ray posteroanterior view (Figure 1) showed cardiomegaly, congested lung fields and bilateral minimal pleural effusion. Of note, was a dense rounded opacity in the right midzone. His echocardiogram revealed mild MS (mitral valve size 1.75 cm²), moderate AS, mild AR/MR (aortic regurgitation/mitral regurgitation) with ejection fraction of 31%. He was managed with injectable furosemide 80 mg per day and oral digoxin 0.25 mg per day and oral penicillin v 250 mg twice daily. He improved symptomatically, with the above medications. Chest X-ray repeated after two week’s treatment with diuretics and digoxin (Figure 2). It showed decrement of cardiomegaly with good resolution of congestion and pleural effusions. But the most conspicuous finding is the total disappearance of the tumor like shadow visible in Figure 1.

Figure 1: Chest X-Ray posteroanterior view shows cardiomegaly, congested lung fields and bilateral minimal pleural effusion. There is a dense rounded opacity in the right midzone.

DISCUSSION

This patient’s chest X-ray shows the classical features of what is known as the Phantom Tumor or the ‘Vanishing Lung Tumor’ [1, 2]. The term ‘Phantom Lung Tumor’ is applied to a transudative interlobar fluid collection in congestive heart failure, which disappears spontaneously with compensation and may reappear...
with each bout of cardiac decompensation [3, 4]. On a posteroanterior chest film it appears as a dense, well-delineated shadow of variable shape, not infrequently resembling pulmonary tumor. The pseudotumors of the lung [5] are transient collections of pleural fluid in the interlobar pulmonary fissure predominantly on the right, usually seen in congestive heart failure, renal failure or hypoalbuminemia by transudation from the pulmonary vasculature. The interlobar fluid collection occurs most commonly on the right side, in the transverse fissure. Infrequently, it occurs in the transverse and oblique fissures simultaneously. The pathogenesis of this condition is not clear [3, 4]. Several theories have been proposed like: (a) recurrent pleuritis with pleural adhesions due to antecedent infection leading to interlobar localization of the transudate, (b) repeated episodes of heart failure with hydrothorax leading to pleural reaction with subsequent adhesions. The interlobar fissures are the least affected, however, once the general pleural cavity is obliterated, the fluid collects in the interpleural spaces, (c) an interlobar fluid collection remains as the residue of a general pleural effusion. When fluid extends from the general pleural cavity into the interlobar space, it may become encapsulated by deposition of fibrin. Thus in all three hypotheses pleural adhesions are considered the factor responsible for the localization of the transudate.

CONCLUSION

Hence we conclude that familiarity with this form of pleural effusion is important because it may be the sole manifestation of heart failure. It also avoids unnecessary workup for a pulmonary malignancy. Managing the underlying condition leads to resolution of the 'pseudotumor'.

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Author Contributions

B Kavitha – Substantial contributions to the conception and design, acquisition of data. Drafting the article, revising it critically for important intellectual content, Final approval of the version to be published

R Balasubramanian – Substantial contributions to the conception & design, acquisition of data, Drafting the article, revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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