CASE REPORT

Aggressive diuretic therapy for a large solitary lung lesion

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SUMMARY

Pseudotumour of the lung is a rare chest x-ray finding among patients who present with fluid overload. It is caused by loculated pleural effusion in the lung fissures. Unfortunately, the occurrence of pseudotumour can be misleading and sometimes can lead to unnecessary investigation and emotional stress to the patient. We present here a case of a 61-year-old gentleman with a known history of hypertension, diabetes mellitus and dyslipidemia who presented at University Malaya Medical Centre with symptoms of fluid overload and a right middle lobe mass on chest x-ray. The right middle lobe mass disappeared entirely after being treated with aggressive diuretic therapy. A diagnosis of pseudotumour was made and described in this case report.

INTRODUCTION

The chest x-ray is an important and widely available modality. It serves as a first-line investigation for clinicians when dealing with patients who present with any respiratory complaints. In this case report, we would like to share a known but rare chest x-ray finding that can be misleading even to an experienced physician. Pseudotumour of the lung is a loculated pleural effusion in the pulmonary fissures that can be misinterpreted as a lung mass.[1] The condition is benign, albeit can lead to non-necessary further investigations and can lead to emotional stress to patients.

CASE REPORT

A 61-year-old man with a known history of hypertension, diabetes mellitus and dyslipidemia, presented at University Malaya Medical Centre (UMMC). However, he had defaulted all his medication and follow-ups since two years earlier. He presented with two weeks history of shortness of breath and cough. He also had reduced effort tolerance of three months. He denied any fever, chronic cough, hemoptysis, loss of weight or appetite and a nonsmoker. He also had noticed that he needed to use two pillows instead as one to sleep at night for the past one month, but he denied any paroxysmal nocturnal dyspnoea. He was a clerk and had never been exposed to dust or chemical substances. He had never been hospitalised earlier.

On examination, he was mildly tachypnoeic with a respiratory rate of 24 breaths per minute, blood pressure was 110/55mmHg, and his heart rate was 110 beats per minute. On auscultation, both hearts sounds were heard with no additional sounds; however, lung examination revealed fine crepitation bi-basally. There was no cervical lymphadenopathy, but the jugular venous pressure was elevated. There was also the presence of bilateral leg oedema. Blood investigations showed Hb of 12.4g/dL; TWBC of 10.4x10^9/L and platelet count 277x10^9/L. His kidneys were impaired with urea of 6.7mmol/L and creatinine of 172mmol/L. HBa1C was 8.6%, total cholesterol was 5.4mmol/L, and LDL was 3.34mmol/L. Urine protein creatinine index revealed a high count of 1481 with low albumin level of 29g/L. Sitting chest x-ray (figure 1 panel A) displayed a right middle lobe well-defined mass with bilateral lower homogeneous opacities and blunted bilateral costophrenic angle. The heart also appeared to be enlarged. He was admitted in the ward and treated as decompensated heart failure and was given aggressive diuretic treatment. A transthoracic echocardiogram revealed an ejection fraction of 47% with no valvular abnormality or significant pericardial effusion. Computer tomography (CT) scan of the thorax was arranged to investigate the right lung mass, and it revealed a loculated fluid in the right transverse fissure sized 1.8cm with no other significant lung and mediastinal pathology (Figure 2). He had prolonged hospitalisation as he had complications with acute on chronic kidney injury due to aggressive diuretic therapy. Chest x-ray was repeated before discharge, and it showed that the right lung well-defined mass has completely disappeared (Figure 1 Panel B). The final diagnosis of the patient was pseudotumour secondary to loculated pleural effusion. He was given one month and six months follow-up at the outpatient clinic of UMMC. His Hba1C and LDL level were reduced to 7.6% and 2.79mmol/L, respectively. His creatinine level was also decreased to 158mmol/L, but he still had persistent proteinuria. A repeat transthoracic echocardiogram showed improvement in the left ventricular ejection fraction of 55%. Coronary angiogram was done, and the left anterior descending coronary artery was stented with a drug-eluting stent. He is currently well and has no failure symptoms.

DISCUSSION

The diagnosis of pseudotumour, phantom tumour or vanishing tumour is a known but rare clinical entity in x-ray findings among patients who present with fluid overload secondary to heart failure, nephrotic syndrome or hypoalbuminemia.[1] The diagnosis of pseudotumour is usually made from clinical acumen and retrospectively after

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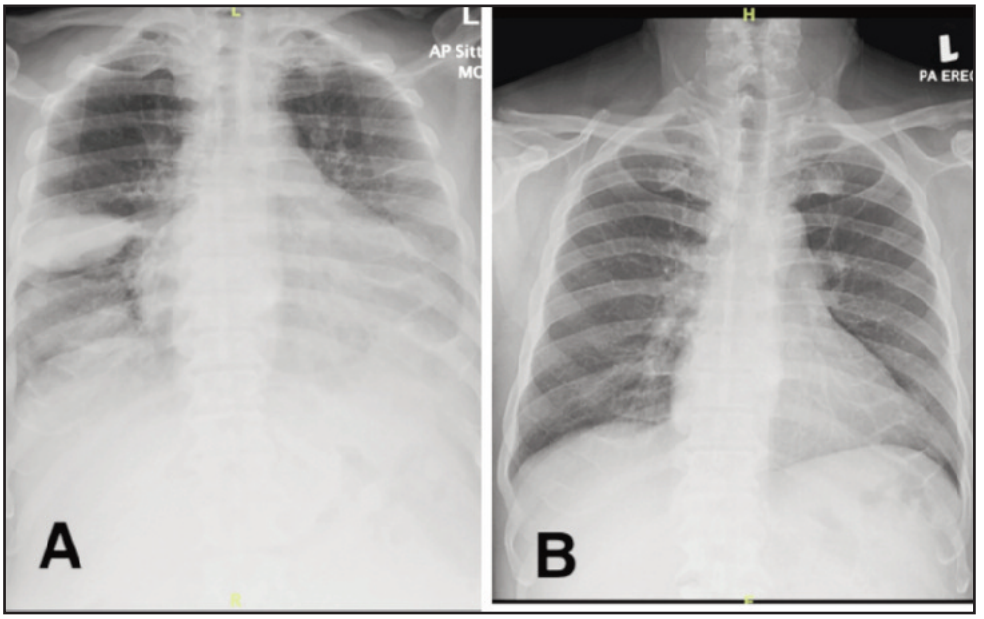

Fig. 1: Panel A shows a well define semi-rounded mass with bilateral lower zone homogenous opacities and blunted costophrenic angles. Panel B shows an x-ray of the same patient taken 10-day apart, which shows a complete resolution of the changes described in panel A.

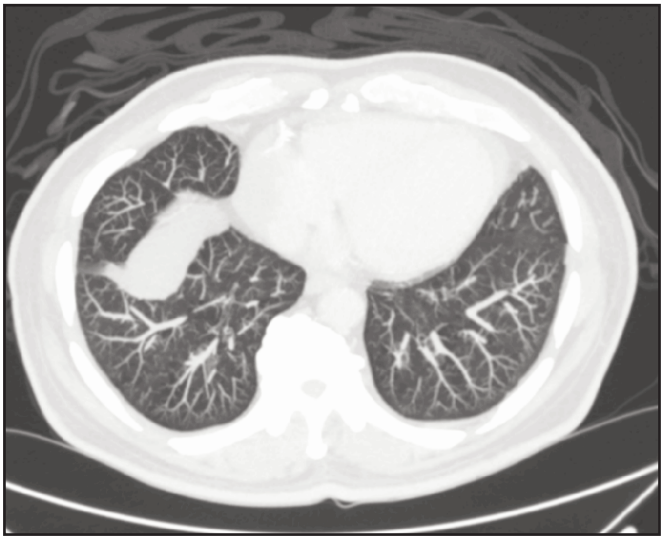

Fig. 2: CT-scan thorax shows there was a loculated fluid in the right transverse fissure.

diuretic therapy and the disappearance of the mass on repeated chest x-ray. Pseudotumour usually affects the right transverse fissure and present with lenticular shape, solitary right middle zone mass, but there were reported cases where multiple pseudotumours were present when there are other pulmonary fissures that are affected.[2,3] The pseudotumour can recur if the patient develops another episode of decompensated heart failure.[1] Our patient had systolic dysfunction associated with diabetic nephropathy and hypoalbuminemia. The proposed mechanism of this condition is due to atelectasis, pleuritis and adhesion.[4] Most of the time, there is no indication to proceed with further investigation, and serial chest x-ray is adequate especially if the patient has low clinical suspicion for other differential diagnoses.[5] However, in our patient, the right lung mass size did not reduce in size despite the patient being clinically dry; hence we proceeded with CT-thorax. Clinician also must be aware of the other possible differential diagnosis (lung metastasis, pulmonary infarction, pneumonia, loculated lung abscess, arteriovenous fistula and tuberculosis) in a patient who present with similar chest x-ray features.[3]

CONCLUSION

A pseudotumour is a relevant entity that needs to be identified among patients with fluid overload and right lenticular middle zone mass on chest x-ray. This finding is essential to clinicians so that they can avoid unnecessary investigations and unnecessary emotional stress to the patient.

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DECLARATION

Declaration of interest: None

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