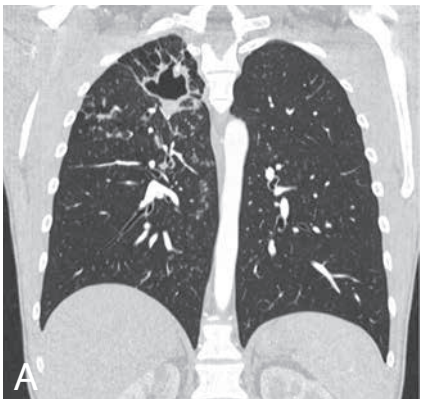
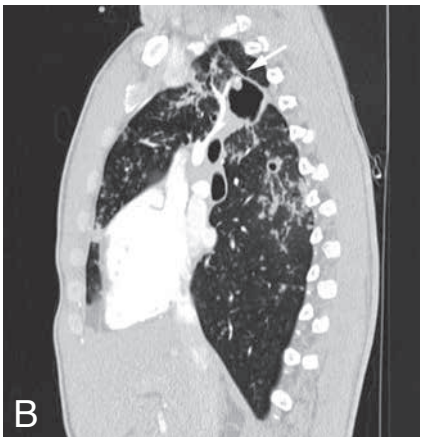
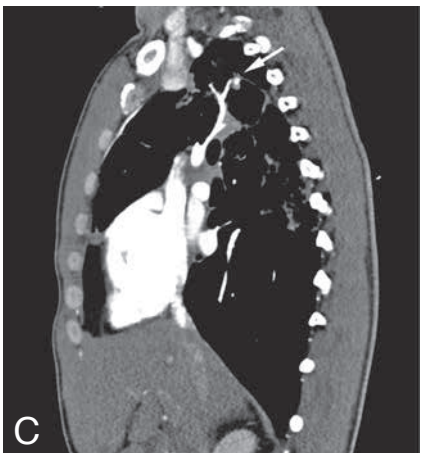
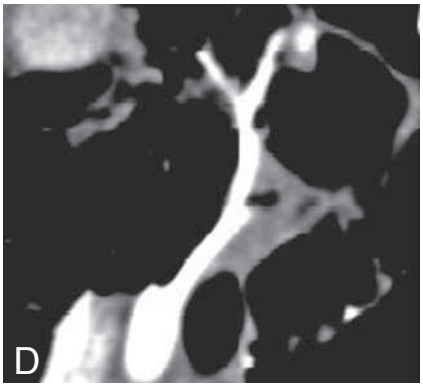
JBR–BTR, 2014, 97: 372.

IMAGES IN CLINICAL RADIOLOGY









Rasmussen aneurysm

M.A. Lombardi, M. Gheur, J.B. Faivre, M. Remy-Jardin, J. Remy[1]

A 28-year-old native Romanian homeless man presented to emergency department with two episodes of hemoptysis (estimated 300 ml) in the previous three days. For about two months he had been suffering from a dry cough with concurrent right-sided chest pain, asthenia, weight loss and a slight fever. Clinical examination revealed crepitations over the right lung fields. He was hemodynamically stable and no sign of respiratory distress was detected. Blood tests revealed a high CRP (72 mg/l).

A thoracic CT angiographic study showed a large thick-walled cavity in the right upper lobe (Fig. A, B). An intracavitary mural nodule about 5 mm wide showing strong contrast enhancement protruded into the cavity at its upper border, close to a branch of the pulmonary artery (Fig. B, C white arrow, D). These findings were consistent with a pseudo-aneurysm adjacent to a tuberculous cavitary lesion (a "Rasmussen aneurysm"). Two more cavitary consolidations and centrilobular micro- and macronodules were found in the right upper lobe and in the superior segment of the lower lobe. Hilar and mediastinal lymphadenopathy was associated. The presumptive diagnosis of tuberculosis was confirmed by sputum smear examination for acid-fast bacilli and PCR for Mycobacterium tuberculosis. Conservative management was proposed, because the patient's hemoptysis had ceased and there was no sign of contrast extravasation to indicate active bleeding. The patient started standard antituberculous treatment with isoniazid, rifampicin, ethambutol and pyrazinamide and his clinical condition improved.

Comment

Pulmonary tuberculosis is being diagnosed more often than in the past in the Western countries. Low socioeconomic status and immigration from high-incidence areas are among known risk factors. Rasmussen aneurysm is a rare complication of pulmonary tuberculosis caused by erosion of a pulmonary artery wall by an adjacent tubercular cavity. Involved arteries are small-to medium sized branches, therefore the aneurysm is usually peripherally located. We can presume that progressive weakening of the arterial wall occurs as granulation tissue replaces both the adventitia ant the media. This granulation tissue is then gradually replaced by fibrin and this results in thinning of the arterial wall, pseudoaneurysm formation and subsequent rupture.

A review of autopsy findings in patients with a history of chronic cavitary tuberculosis by Auerbach (1939) showed a 4% prevalence of Rasmussen aneurysm. The most common presenting symptom is hemoptysis, which may be life-threatening if massive.

In the appropriate clinical context, an arterial aneurysm close to a tuberculous cavity is almost pathognomonic.

In our case, the aneurysm was small, hemoptysis was self-limiting and there was no sign of active bleeding. In such instances, conservative management with antibiotics and a close follow-up documenting resolution may be an option. Otherwise, endovascular aneurysm occlusion is indicated.

Reference

1. Remy J., Lemaitre L., Lafitte J.J., Vilain M.O., Saint-Michel J., Steenhouwer F.: Massive hemoptysis of pulmonary arterial origin: diagnosis and treatment. *AJR Am J Roentgenol*, 1984, 143: 963-969.

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