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PHOTO QUIZ

A breathtaking response to tuberculosis therapy

B.G. Boerrigter*, M.S. van Sandwijk, G.E.L van den Berk

Department of Internal Medicine, Onze Lieve Vrouwe Gasthuis, Amsterdam, the Netherlands,
*corresponding author: b.g.boerrigter@olvg.nl

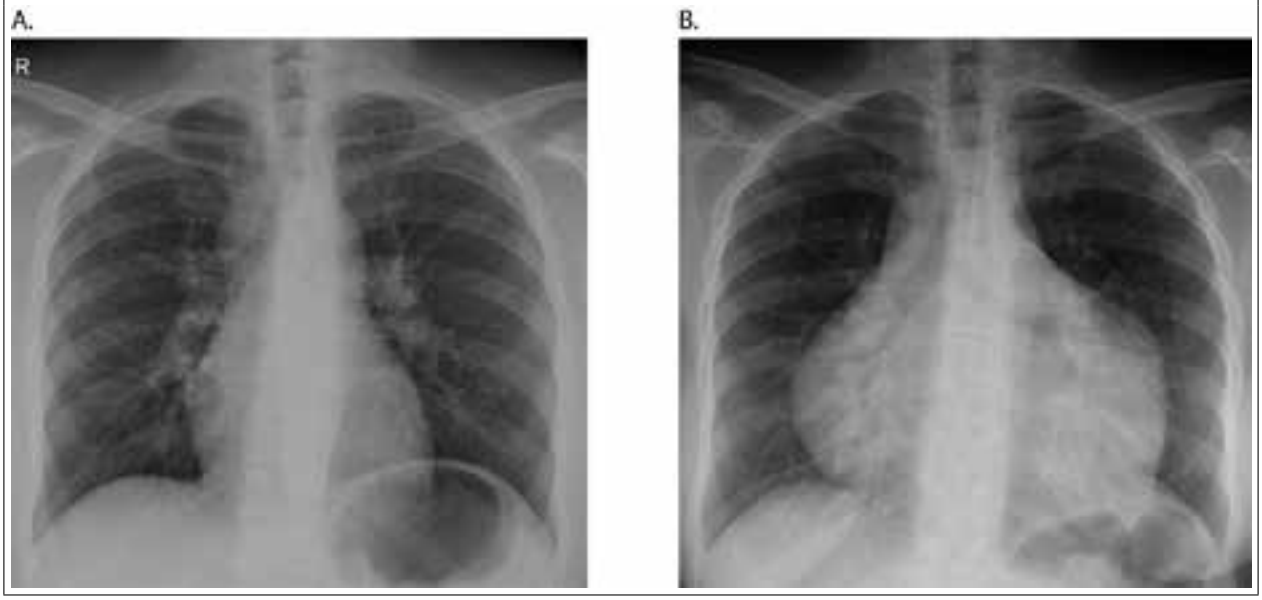
A 31-year-old Malaysian woman, diagnosed with tuberculosis (TB) of the mediastinal lymph nodes, presented to our outpatient clinic because of progressive dyspnoea and malaise three weeks after initiation of anti-TB therapy. The patient reported severe dyspnoea, orthopnoea and high fever. At that moment she was taking rifampicin, isoniazid, pyrazinamide and ethambutol. Before treatment she had complained of fever, weight loss and night sweating, but no dyspnoea was reported.

On physical examination she had a blood pressure of 121/74 mmHg with a tachycardia of 120 beats/minute. Her temperature was 40.1 °C and she had a breathing frequency of 30/minute with an arterial oxygen saturation of 99% without supplemental oxygen. Laboratory findings revealed a mild leucocytosis (11.3 x 10^9/l) and a C-reactive protein of 248 mg/l. Electrocardiogram showed a sinus tachycardia with nonspecific T-wave abnormalities.
The chest X-ray after three weeks of therapy is shown in *figure 1,* together with the chest X-ray before the start of therapy.

WHAT IS YOUR DIAGNOSIS?

See page 262 for the answer to this photo quiz.

Figure 1. *Chest X-ray before (A) and after (B) three weeks of anti-TB treatment*



ANSWER TO PHOTO QUIZ (PAGE 258)

A BREATHTAKING RESPONSE TO TUBERCULOSIS THERAPY

TUBERCULOUS PERICARDITIS

In this case the pericardial effusion which started three weeks after initiation of anti-TB treatment was highly suggestive of tuberculous pericarditis, as a sign of a paradoxical reaction. Cardiac ultrasound confirmed the presence of pericardial effusion and signs of inflow obstruction. Pericardial drainage was performed and 700 ml of serous fluid was drained. Polymerase chain reaction of the pericardial fluid was positive for mycobacterium tuberculosis. We continued the anti-TB regimen, and started prednisolone treatment in a dosage of 60 mg a day according to current guidelines.[1]

Paradoxical reactions during TB treatment are thought to occur in 20-25% of the patients.[2,3] Although no strict definition of a paradoxical reaction exists, an often used definition is: clinical or radiological worsening of pre-existing tuberculous lesions or the development of new lesions not attributable to the normal course of disease in a patient who initially improves on anti-tuberculosis therapy and in whom the onset of the paradoxical response is at least two weeks after initiation of this treatment.[4] The most common sites involved in paradoxical reactions are the central nervous and respiratory system.[4] The pathophysiology of paradoxical responses in TB, as well as the subsequent restoration of the skin test,[5] is not well known. Suggested mechanisms include: 1) reversal of immunosuppression due to the TB itself, 2) release of large amounts of endotoxins from destroyed bacilli and 3) improvements in the nutritional status.[5] The therapeutic approach to paradoxical reactions has not been well studied; guidelines state that that prednisone or methylprednisolone should be started at a dose of about 1 mg/kg.[1] In our patient this meant that the dosage of 60 mg she was receiving because of the pericardial involvement was sufficient against a paradoxical reaction as well. Control cardiac ultrasound one week later showed no progression of the pericardial effusion. After three weeks she had no complaints of orthopnoea or dyspnoea on exertion.

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