89

A 30-Year-Old Woman from Bolivia With Exertional Dyspnoea

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Clinical Presentation

History

A 30-year-old woman presents to the outpatient clinic of a hospital in Spain. She was born in Santa Cruz (Bolivia) and arrived in Europe 4 months prior. She has been living in an urban environment for the past 20 years but grew up in a rural area during her childhood.

She reports a 2-year history of progressive dyspnoea at moderate exertion (New York Heart Association grade II) along with self-limiting palpitations. She has no other relevant medical history and does not take any medication. She expresses the wish to become pregnant.

Clinical Findings

On examination, the blood pressure is 110/65 mmHg. The pulse is regular at 40 bpm. SpO_2 is 99% on ambient air. On auscultation, cardiac sounds are clear and there are no murmurs. The chest is clear. There is no peripheral oedema and the jugular venous pressure is not raised.

Laboratory Results

Full blood count and basic blood chemistry tests are normal. Her ECG is shown in Figure 89.1. Her chest radiograph is shown in Figure 89.1B.

Questions

1. In a recent migrant from Bolivia, which different pathologies should be screened for?
2. If a patient was diagnosed with Chagas disease, how would you proceed to assess organ involvement? Which are the indications for treatment of Chagas disease?

Discussion

A Bolivian woman of childbearing age presents to an outpatient clinic for the first time. She complains of progressive dyspnoea and palpitations. She has no clinical signs of heart failure. However, CXR shows moderate cardiomegaly and there is sinus bradycardia with right bundle branch block on her ECG.

Answer to Question 1

In a Recent Migrant from Bolivia, Which Different Pathologies Should Be Screened For?

Following the guidelines of the European Centre for Disease Prevention and Control (ECDC), newly arrived migrants from highly endemic countries should be offered a screening panel including screening for active and latent tuberculosis, HIV, hepatitis B, hepatitis C and strongyloidiasis. In migrants from Latin America, especially from Bolivia, this screening panel should include Chagas disease, because prevalence rates are high and Chagas may be asymptomatic.

If a chronic phase of Chagas disease is suspected, screening is usually performed with serological testing through detection of IgG antibodies against *Trypanosoma cruzi* using two different serological testing methods.

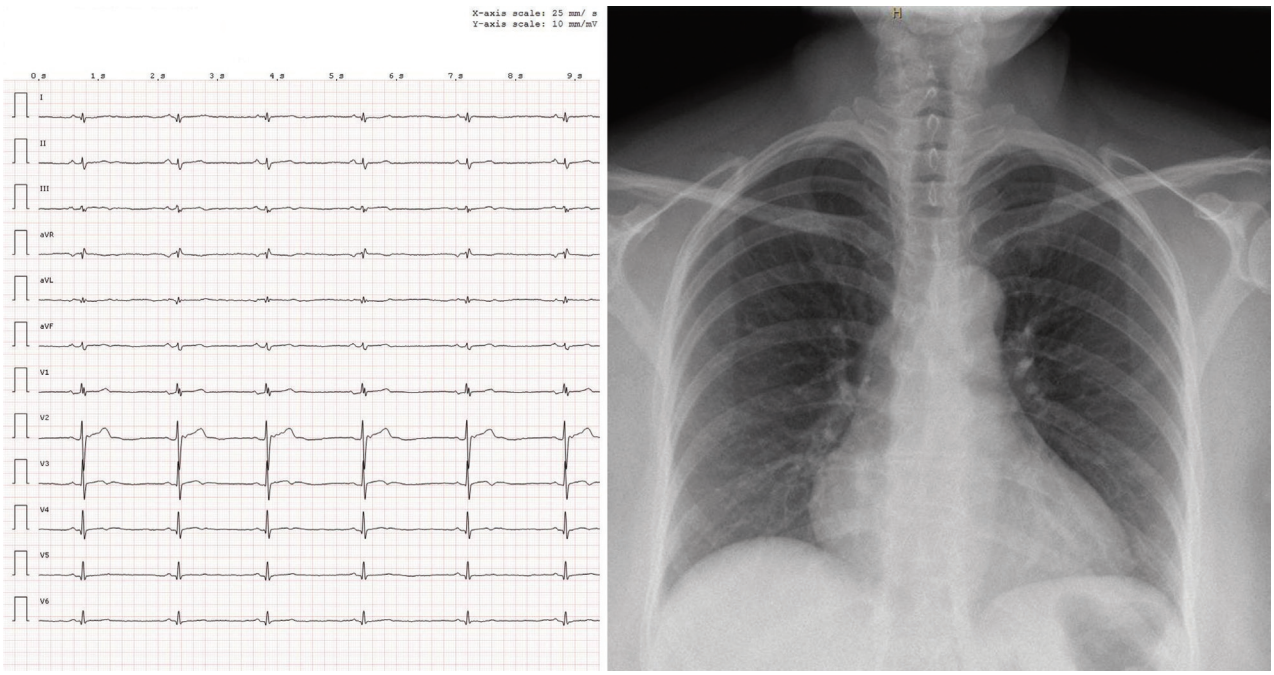
Answer to Question 2

If a Patient Was Diagnosed With Chagas Disease, How Would You Proceed to Assess Organ Involvement? Which Are the Indications for Treatment of Chagas Disease?

The heart is the most frequently affected organ. Alterations most commonly seen include conduction disorders such as bundle branch blocks and sinus node dysfunction (Fig. 89.1). Myocardial involvement can progress to dilated cardiomyopathy (Fig. 89.1B). Gastrointestinal involvement is less common and manifestations comprise motility disorders or megaviscera.

As a general approach it is therefore reasonable to start with an ECG, chest x-ray and barium enema. In addition, referral to a cardiologist for echocardiography and 24-hour Holter ECG would be recommended.

There are two trypanocidal treatments: benznidazole and nifurtimox. Treatment is always recommended for acute and congenital Chagas disease as well as for patients younger than



• **Fig. 89.1** **A:** ECG showing sinus bradycardia with right bundle branch block **B:** CXR showing a moderately enlarged cardiac silhouette.

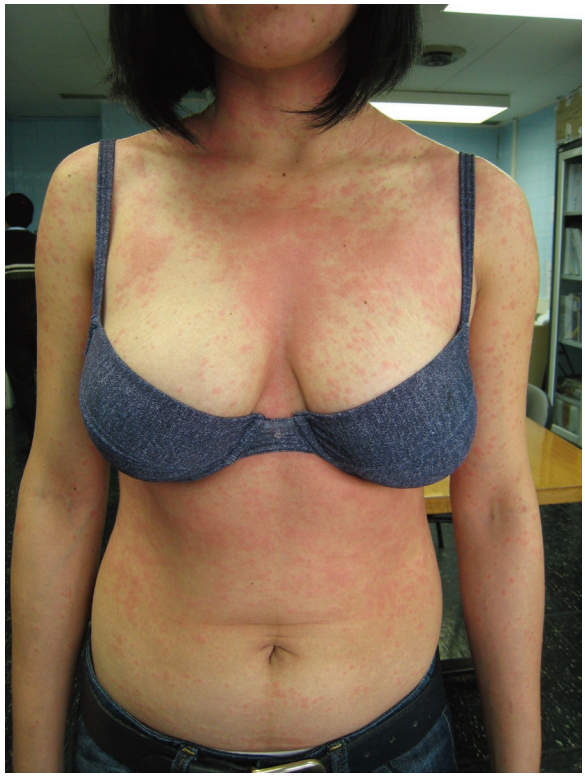
18 years in the chronic phase. In older patients with chronic disease, treatment is controversial. Trypanocidal treatment is usually offered to patients in the indeterminate phase with mild-to-moderate organ involvement. In order to avoid vertical transmission, guidelines usually recommend treatment of women of childbearing age.

The Case Continued…

Both serological tests for Chagas disease came back positive. The patient was classified as having chagasic cardiomyopathy; and as she intended to become pregnant, antitrypanosomal therapy was offered. She started treatment with benznidazole 5 mg/kg per day for 60 days at the outpatient clinic.

Fifteen days into treatment, she presented with a pruritic maculopapular rash (Fig. 89.2) and mild eosinophilia. Benznidazole treatment was discontinued and the patient received corticosteroids and antihistamines for 5 days which lead to complete resolution of the skin rash. Re-introduction of benznidazole was tolerated well and she was able to complete the entire 60-day course without any additional problems.

Complete cardiological evaluation revealed sinus dysfunction without symptomatic bradycardia or syncope. Echocardiography showed a hypertrophic left ventricle without obstruction. Follow-up was ensured, and 5 years after, cardiac function was stable and she gave birth to a healthy child.



• **Fig. 89.2** Maculopoapular rash with pruritus after 15 days on benznidazole.

SUMMARY BOX

Chagas Disease

Chagas disease is an anthropozoonosis caused by the protozoan *T. cruzi*. It is a neglected tropical disease endemic in 21 Latin American countries with prevalence rates as high as 6.1% in Bolivia. In endemic areas, it is mainly transmitted by triatomine bugs. However, in non-endemic countries mother-to-child transmission, blood transfusions or transplants play a major role. Rarely, Chagas can be orally acquired by ingestion of food items and drinks contaminated with bug faeces.

Diagnosis in the acute phase is usually made by direct microscopic visualization of trypomastigotes on blood films. In the chronic phase when parasitaemia is low and intermittent, diagnosis relies on serological testing through detection of IgG antibodies against *T. cruzi* using two different tests. PCR is also used with varying sensitivities.

Chagas disease has two different clinical phases. The acute phase is usually asymptomatic but can present as inflammation at the inoculation point and fever. It is followed by a chronic phase that is usually asymptomatic (indifferent phase). About 30% to 40% of patients with chronic Chagas disease will go on to develop organ involvement 10 to 20 years after initial infection. The heart is the most frequent organ involvement, predominantly affecting conduction system and myocardium. Alterations most frequently seen include bundle branch blocks and segmental ventricular wall motion abnormalities that can progress to sinus node dysfunction, ventricular arrhythmias and dilated cardiomyopathy. Gastrointestinal involvement is less common and manifestations comprise of motility disorders or megaviscera (megaoesophagus and megacolon).

There are two approved drugs for Chagas disease: benznidazole and nifurtimox. Although benznidazole is the preferred drug for Chagas disease, about 50% of patients receiving this treatment will present with adverse events. Hypersensitivity reactions with skin involvement are the most frequently observed side effects followed by gastrointestinal disturbances, bone marrow depression and peripheral neuropathy. Mild-to-moderate reactions can be solved with symptomatic treatment with or without temporal withdrawal of trypanocidal treatment. However, in about 10% of cases treatment discontinuation is definite.

Prevention relies on vector control, improving living conditions in endemic countries, screening of blood and organs for donation and screening of women of childbearing age to avoid mother-to-child transmission.

Further Reading

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