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LETTER TO THE EDITOR

Coinfection of *Trypanosoma cruzi* and *Mycobacterium tuberculosis* in a patient from Colombia

Tuberculosis (TB) continues to be a significant public health threat throughout the world [1]. Although significant reductions have been achieved, particularly in the Americas, the morbidity, mortality, and burden of this disease remain high in many areas and populations, including Colombia and Latin America [2]. In addition to coinfection with human immunodeficiency virus (HIV), which has contributed significantly to the epidemiological persistence of TB, other comorbidities and coinfections can also occur [3]. However, no previous studies or cases of coinfection with *Trypanosoma cruzi*, the etiological agent of Chagas disease, have been reported.

Chagas disease continues to be a significant neglected tropical disease in Latin America despite significant reductions in recent decades, and it has also been globalized due to migration and imported cases. Furthermore, new forms of transmission have been reported (e.g. orally) [4,5]. Previously, this parasitic disease predominantly occurred in rural areas. Now, due to domestic and international migration, the geography of this disease is more likely to overlap with other conditions, such as tuberculosis, in urban and suburban areas.

On September 2014, a 66-year-old male was admitted for syncope with dyspnea, a persistent wet cough accompanied by abundant yellow expectoration, and fever (unquantified) of 15 days of evolution. The patient had a history of TB two years ago and had discontinued treatment. At physical examination, the patient's temperature was 38 °C, and he showed edema of the upper and lower eyelids, cervical, painful and mobile submandibular lymphadenopathy (Fig. 1), intercostal runs and pulmonary auscultation finding bibasilar crackles. Cardiovascular examination found a holosystolic murmur. The patient's leukocyte count was 11,700 cells/mm^3 (89% granulocytes), and a chest X-ray showed bilateral apical interstitial reticular opacities (Fig. 1). His electrocardiogram (EKG) showed a sinusal tachycardia, a ventricular extrasystole and a long PR interval. However, his echocardiogram was normal. A sputum smear with acid-fast bacillus stain was positive (+++), and culture in Ogawa-Kudoh media allowed for the isolation and biochemical identification of *Mycobacterium tuberculosis*. A double-contrast barium enema showed opacification of the bowel loops from straight to ileal loops due to incontinence of the ileocecal valve; distended bowel loops and a ''granular'' appearance of the cecum and ileum, larger than 22 mm × 10 mm (Fig. 1), were also observed. The patient received treatment with isoniazid, rifampicin, pyrazinamide and ethambutol.

In addition to clinical symptoms of TB, acute Chagas disease was suspected based on the presence of edema of the upper and lower eyelids, cervical, painful and mobile submandibular lymphadenopathy with fever in a patient with EKG alterations living in a country with extended endemic areas. The indirect immunofluorescence (IFI) to detect IgG anti-*T. cruzi* antibodies was positive (1:256 dilutions), and an enzyme-linked immunosorbent assay (ELISA) IgG was also positive (OD: 2.21). His HIV-1 and HIV-2 ELISA were negative. In addition to anti-TB treatment, the patient received benznidazole (5 mg/kg q12h) and responded well to the treatment. At a follow-up visit in June 2015, the patient showed good improvement and maintenance of negative results for the TB and Chagas disease laboratory tests.

As stated above, no previous cases *M. tuberculosis* and *T. cruzi* coinfection have been reported in the medical literature (Medline, Scopus, SCI, SciELO, LILACS). This coinfection presents a medical challenge, given the potential interactions between anti-TB and anti-*T. cruzi* drugs [6,7]; however, our patient did not suffer any significant adverse event. Because TB can be latent [8] and inapparent *T. cruzi* has also been described [9], more studies will be required in endemic zones where both infections can be present. Further studies

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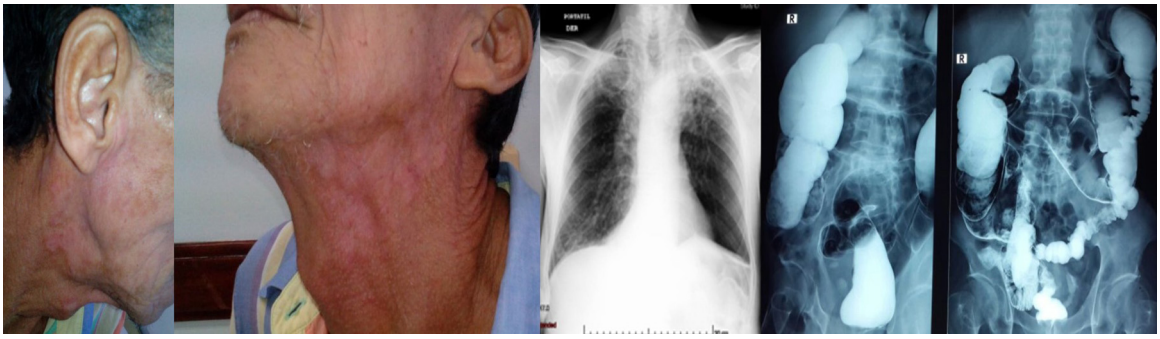

Figure 1 Clinical and radiological manifestations of *M. tuberculosis* and *T. cruzi* coinfection in a patient from Colombia.

are important because of the risk of serious reactivation of both infections simultaneously, as seen in our case. Other serious manifestations, such as meningoencephalitis and/or myocarditis due to *T. cruzi* (sometimes fatal) [10], concomitant with pulmonary and extrapulmonary TB may also occur. This possibility is of particular concern in Latin America, but other countries, such as the United States, Spain, Canada, Portugal, United Kingdom, imported cases of Chagas disease are now commonly seen, and health care providers in these regions should also be aware of this potential coinfection [4]. Further research is deserved and expected on this topic in our country.

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Competing interests

None declared.

Ethical approval

Not required.

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[1] In Memoriam.

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