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Gastrointestinal tuberculosis mimicking Crohn's disease: a case report

M. Foggia, D. R. Donno, A. E. Maraolo, A. R. Buonomo, G. Borgia, I. Gentile

Department of Clinical Medicine and Surgery, Section of Infectious Diseases, University of Naples Federico II, Naples, Italy

ABSTRACT: Tuberculosis (TB) remains an important cause of mortality and a severe morbidity in the world. Gastrointestinal tuberculosis (GITB) is an uncommon disease and an often-misdiagnosed clinical problem. The distinction between GITB and Crohn's disease (CD) is a diagnostic challenge because they present similar clinical, radiological, endoscopic and histologic features. The correct diagnosis in countries where TB is not endemic involves a high index of clinical suspicion (for instance, migrant population and immunosuppressed individuals) and is essential for a correct management and a good outcome. Here we present a case of intestinal tuberculosis initially diagnosed as CD, the patient after starting steroid therapy developed pulmonary involvement.

Keywords: Tuberculosis, Small intestine infection, Crohn's disease, Misdiagnosis.

BACKGROUND

Tuberculosis (TB) is one of the top 10 causes of death worldwide. In 2016, TB affected 10.4 million people, and 1.7 million died from the disease[1]. Gastrointestinal tuberculosis (GITB) accounts for 3% of all TB cases and of 11% of extra-pulmonary TB manifestations. Populations at great risk are migrant communities and immunocompromised individuals. The most important differential diagnosis is represented by Crohn's disease (CD), a granulomatous pathology that may affect any part of the alimentary tract. However, the most common site of involvement is the ileo-cecal region. Fever, anorexia, weight loss, diarrhoea and abdominal pain can be observed in both conditions[2].

CASE

In January 2018 a 34-year-old woman was admitted to our hospital, a University Tertiary Care Centre in Naples, Southern Italy. She was a Russian, but she had been living in Italy for fifteen years working as housemaid. She was referred to our Infectious Diseases (ID) Unit because of the following clinical manifestations: general malaise, low-grade fever (*fastigium* 37.7°C), moderate dyspnoea, productive cough and non-specific lung involvement at chest X-ray.

The patient had been in good health until about 3 months before this admission. Indeed, her most relevant previous contact with the healthcare system was in November 2017, when she was admitted to the Gastroenterology Unit of our centre. By then she complained about persistent diarrhoea, abdominal pain and weight loss (6-7 kilos). She was tested for Human Immunodeficiency Virus resulting negative. Stool culture proved negative as well. Faecal calprotectin was elevated. Eventually, she underwent a colonoscopy that showed involvement of ileum and coecum with ulcers; bioptic examinations demonstrated a granulomatous process. She was discharged with clinical-histological diagnosis of CD. Her therapy as outpatient was based on oral prednisone (25 mg *bis in die*) plus mesalazine.

The patient appeared to benefit from this treatment for a few weeks, until the onset, in January 2018, of the aforementioned signs and symptoms that led up to the stay at the ID Unit, pending the results of TB screening with Interferon gamma assay (IGRA) as well as of a computed tomography (CT) scan of the chest requested by the colleagues. We further planned a complete screening for infective pneumonia: serum procalcitonin, nasal swab testing influenza and other viruses (according to seasonality), sputum and blood cultures.

The CT scan showed diffuse bilateral nodular infiltrates. Interferon assay showed high positivity. Other examinations tested negative.

Corresponding Author: Davide Roberto Donno, MD; e-mail: davidedonnodoc@gmail.com

In the light of the novel clinical picture we requested a review of the intestinal biopsy performed two months earlier. The specimen was reviewed by a renowned TB expert that identified a micro-area of central caseous necrosis in the context of a major granulomatous process, pathognomonic of GITB. Molecular testing was not technically feasible. The patient refused a second colonoscopy and a bronchoalveolar lavage.

A diagnosis of GITB presumptively by *Mycobacterium tuberculosis* was made and an intensive regimen of four drugs was started in hospital as directly observed therapy: isoniazid, rifampicin, ethambutol and pyrazinamide (dosages according to body weight). Anti-CD therapy was immediately discontinued. The hospital stay was prolonged for a month after treatment inception: general conditions of the patients quickly improved.

Unfortunately, the patient was lost to follow up: she did not show up at the planned control visit (60th day of treatment) since, in the meanwhile, she had moved to her homeland.

DISCUSSION

Although GITB has known for a very long time, it still represents a clinical conundrum[3]. In particular, the differential diagnosis between GITB and CD is very insidious: these two entities largely overlap due to many similarities as far as their clinical, endoscopic, radiological and histological features are concerned[4].

On one hand, elements in favor of a GITB diagnosis are: concomitant pulmonary TB, ascites, night sweats, patulous ileo-cecal valve, transverse intestinal ulcers, scar or pseudo-polyps[4]. On the other hand, elements suggestive of a CD diagnosis are: bloody stools, perianal signs, longitudinal ulcers and a cobblestone appearance of gut mucosa[4]. A correct diagnosis is crucial to guarantee a good outcome.

Moreover, particularly in patients coming from countries with high TB endemicity, when an inflammatory bowel disease (IBD) is suspected, a careful screening for TB is warranted. Indeed, immunosuppressive treatments based on anti-tumour necrosis factor (TNF) antagonists, that represent an important option against IBD, pose a high risk of latent TB reactivation. The use of steroid agents is another important factor driving TB reactivation[5].

Back to the differential diagnosis, IGRA tests are very helpful in differentiating GITB and CD, particularly to rule out GITB owing to high specificity and negative predictive value of this assay.

Granulomas and caseous necrosis are the histologic hallmark of TB. Acid-fast bacilli smear, nucleic acid amplification tests and culture are necessary to identify *Mycobacterium tuberculosis* in specimen obtained through endoscopic biopsies[6,7].

With regard to treatment, the approach to GITB by *M. tuberculosis* is similar to the one used in case of classic pulmonary TB. A recent Cochrane review demonstrated that a 6-month course of treatment (two months with 4 drugs, the continuation with 2 agents) is not inadequate, failing to highlight any incremental benefits of longer regimens, although further studies are needed considering the low quality of the available evidence[8]. Unfortunately, our patient was lost to follow up and we did not have the chance to monitor the response to therapy after discharge and to establish the definite duration of treatment.

Conflict of Interest:
The Authors declare that they have no conflict of interests.

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