

High fecal calprotectin levels during lymph-nodal and abdominal tuberculosis

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ABSTRACT:

— Fecal calprotectin is a neutrophil cytosolic biomarker of gastrointestinal inflammation, especially used for the diagnosis and the monitoring of inflammatory bowel disease. However, it can also turn out positive in a variety of rare circumstances.

We present a case of multiple thoracic and abdominal lymphadenopathy, found to be a tubercular mediastinal lymphadenitis accompanied by high-levels of fecal calprotectin. Of note, fecal calprotectin has recently been associated with intestinal tuberculosis and granulomas in intestinal biopsies.

Further studies are certainly needed to establish whether fecal calprotectin can have a role in the diagnostic algorithm of intestinal tuberculosis.

— **Keywords:** Tuberculosis, Fecal calprotectin, Inflammatory bowel diseases, IBD, Intestinal tuberculosis, Lymph nodal tuberculosis.

INTRODUCTION

Tuberculosis (TB) is considered a relevant public health problem since it is a highly transmittable disease, and it is potentially devastating for the patient. Furthermore, TB is not only represented by pulmonary tuberculosis but it can also involve lymph nodes, bone, pericardium, intestinal, urinary tract and other rare tissues of the body. Either mediastinal tuberculosis or other extrapulmonary localizations are not common in adult immunocompetent patients¹. Lymph nodal and intestinal tuberculosis are clinically important presentations of TB, difficult to diagnose and treat.

The differential diagnosis of TB can be complicated, and many other common intestinal diseases need to be considered. The diagnostic algorithm is often time consuming and the patient usually undergoes through many hospital-based investigations, such as abdominal ultrasound and CT scan with contrast medium². Of importance, the histopathological and culture based evidence of *Mycobacterium tuberculosis* is needed.

Fecal calprotectin (FC) has recently been associated with intestinal tuberculosis³, although its diagnostic value has not been established yet. The TB diagnostic path is difficult to carry out and markers of inflammation and infection need to be carefully evaluated, in order not to miss a potentially life-threatening disease like TB.

CASE REPORT

We describe the case of an immigrant patient from Burkina Faso, hospitalized for abdominal pain. The routine laboratory exams highlighted neutrophilic leukocytosis and increased inflammation parameters (WBC 5360 mmc, 80% N, CRP 10.9 mg/dl N.V. 0-0.5 mg/dl). The HIV test was negative. CT scan of chest and abdomen documented a critical thoracic and abdominal lymphadenopathy along with pleural, pericardial and abdominal effusion. We performed pleural drainage and biopsy, which revealed granulomatous pleurisy.

Cultural studies for *Mycobacterium tuberculosis* in bronchial-alveolar lavage, sputum and urine were negative. The clinical and epidemiological suspicion of TB lead us to initiate rifampin 600 mg qd, ethambutol 1000 mg qd, isoniazid 300 mg qd, pyrazinamide 1250 mg qd, empirically. Afterwards, mediastinal lymph node biopsy identified *Mycobacterium tuberculosis*. The patient also started therapy against pericarditis. During his hospital stay, the onset of diarrhea induced us to search for *Clostridium difficile*, and to perform parasitological exam for ova and parasites, stool culture. They all resulted negative. High-levels of fecal calprotectin, 209 mg/kg (normal value < 70 mg/kg), were detected. Colonoscopy was negative.

DISCUSSION

Extrapulmonary tuberculosis (EPTB) accounts for 10-12% of the total tuberculosis cases, and among EPTB, 11-16% of cases involve the abdomen⁴.

A young immigrant presenting with abdominal pain needs a great deal of consideration, a lot of diseases have to be taken into account in the differential diagnostic algorithm. Several tropical pathogens can give rise to this clinical presentation, and ova and parasites in the stool, as well antibody levels, need to be performed in order to exclude such causes. Abdominal ultrasound, CT scan and colonoscopy are also essential to get to the correct diagnosis. In our case, the mediastinal lymph node biopsy played a fundamental role to discover that *Mycobacterium tuberculosis* was the causative agent of this clinical picture. Fecal calprotectin was highly positive, leading us to further investigate the GI tract involvement and the potential association with the abdominal lymphadenopathy, since it is an important marker of gastro-intestinal inflammation. High-levels of FC are often increased in inflammatory diseases of the bowel and colonoscopy with biopsies is

critical to discover the source of the inflammation and its local or disseminated extension.

CONCLUSIONS

In our case, FC was increased during extrapulmonary TB of the lymph node and abdomen. Thus, we suggest that, in patients with high levels of fecal calprotectin, intestinal tuberculosis has to be taken into consideration.

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CONFLICT OF INTEREST:

The authors declare that they have no conflict of interests.

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