

Intestinal Tuberculosis: Case Report and Literature Review

Milena Braga Soares Silva¹, Willams Germano Bezerra Segundo², Ana Beatriz Brienze da Silveira², Gabriela Gimenes Dias Batista³, Maura Saad Galati³, Vinicius Branco Elias Dib⁴, Isaac Jose Felipe Correa Neto^{5*}, Mario Fuhrmann Neto⁶ and Laercio Robles⁷

¹ *Coloproctology Residents at Hospital Santa Marcelina, São Paulo - SP*

² *Resident of General Surgery at Hospital Santa Marcelina, São Paulo - SP*

³ *Medical Student at Faculdade Santa Marcelina, São Paulo - SP*

⁴ *Ex-Resident of General Surgery at Hospital Santa Marcelina, São Paulo - SP*

⁵ *Assistant Doctor of Coloproctology at Hospital Santa Marcelina, São Paulo - SP*

⁶ *Assistant Doctor of General Surgery at Hospital Santa Marcelina, São Paulo - SP*

⁷ *Chief physician of the General Surgery department and the Coloproctology service at Hospital Santa Marcelina, São Paulo - SP*

Correspondence should be addressed to Isaac Jose Felipe Correa Neto, isaacneto@hotmail.com

Received: September 08, 2020, Accepted: September 26, 2020, Published: October 3, 2020

ABSTRACT

Introduction

Intestinal tuberculosis usually results from a consequence of the pulmonary form and affects mainly immunosuppressed patients. It has nonspecific symptoms and the diagnosis occurs when complications are clinically manifested.

Objective

To describe two case reports of intestinal obstruction due to intestinal tuberculosis, with different outcomes, and to perform a literature review on the subject.

Discussion

Intestinal tuberculosis is usually diagnosed in complications such as intestinal obstruction, intestinal hemorrhage, perforation or with the development of fistulas, the first being the most common, although rare among the causes of acute obstructive abdomen. Blood tests are nonspecific and computed tomography is the exam of choice for evidence of abdominal condition and impression of the location of gastrointestinal involvement.

Conclusion

Intestinal tuberculosis should be considered in the differential diagnoses of patients with acute obstructive abdomen and the treatment can be clinical or surgical in cases of complications.

Citation: Milena Braga Soares Silva, Intestinal Tuberculosis: Case Report and Literature Review. Clin Surg J 3(S3): 19-25.

KEYWORDS

Intestinal Tuberculosis; Intestinal obstruction; Intestinal haemorrhage; Fistula; Obstructive abdomen

INTRODUCTION

Tuberculosis (TB) is a worldwide public health problem, with the estimation that half the population is infected¹. In tropical and developing countries the problem is even worse and, in Brazil especially, tuberculosis is a big challenge, because despite being a disease with diagnostic criteria established in the pulmonary form, amenable to cure and with the possibility of prevention, also the incidence remains high, affecting approximately 10.4 million people in 2016 [1-4].

Intestinal tuberculosis (TBI) is the sixth most common extra-pulmonary manifestation and usually progresses as a complication of lung disease. It mainly affects immunosuppressed patients who are particularly more susceptible [2,5,6].

The diagnosis of TBI, on the other hand, is difficult to perform, as it presents many nonspecific signs and symptoms and mimics other clinical entities, such as Crohn's disease and colon neoplasms [2,5]. In addition, complementary tests have limited accuracy for the diagnosis [7]. Thus, attending physicians should broaden their suspicions in patients at higher risk for TBI who present abdominal symptoms in order to promote the prevention of complications of this pathology [8].

Intestinal obstruction is one of many complications in the course of intestinal tuberculosis, with or without treatment. Thus, this possibility must be present, and early diagnosis could prevent more serious complications, reducing morbidity and mortality [2,8].

The aim of this paper is to describe two case reports of intestinal obstruction due to intestinal tuberculosis, with different outcomes, and to perform a literature review on the subject.

Case 1

LCS, male, 41-year-old, renal transplant in 2012 due to hypertensive nephropathy in use of immunosuppressant drugs (Mycophenolate and Tacrolimus), was admitted to the surgical emergency room with abdominal pain for 3 days, in colic, starting in the right iliac fossa and without improvement or worsening factors. Associated, he reported some episodes of chills, but without mentioning fever. On physical examination, the patient was in regular general condition, with vital signs within the parameters of normality, slightly distended abdomen, painful on palpation in the lower right quadrant, but without signs of peritoneal irritation.

The condition was investigated with laboratory tests, which did not show any alterations, and Computed Tomography (CT) of the total abdomen, which showed thickening of the terminal ileum, cecum and appendix cecal loops, in addition to densification of the fatty planes and adjacent lymph node enlargement (Figures 1 and Figure 2).

The surgical approach was laparotomy with appendectomy and lymph node biopsy. Intraoperatively, a swollen subserous retrocecal appendix was observed, in addition to thickening of the terminal ileum and enlarged lymph nodes (Figure 3). The anatomopathological study showed appendicitis in initial phase and tuberculous necrotizing granulomatous lymphadenitis, with positive BAAR research using the Ziehl-Neelsen technique.

During hospitalization, a CT scan of the chest was performed, showing small foci of micronodular interstitial infiltrate, with bilateral random distribution, with an infectious inflammatory aspect, and negative direct sputum smear microscopy (BAAR research).



Figure 1: Abdomen Computed Tomography without contrast showing thickening of the terminal ileum.

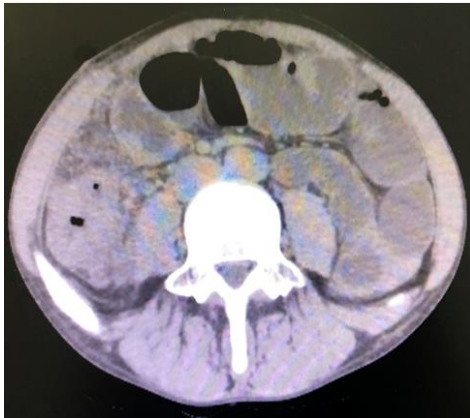


Figure 2: Abdomen Computed Tomography without contrast showing cecum and terminal ileum thickened with surrounding fluid, in addition to nodes enlargements.



Figure 3: Macroscopic appearance in the intraoperative of the terminal ileum and cecum.

The patient evolved on the 5th postoperative day with incoercible vomiting and stool elimination stop, with maintenance of flatus. Radiography of the abdomen

showed distention of the loops of the slender with a water level, being diagnosed with intestinal subocclusion and opting for conservative management with the beginning of drug treatment for tuberculosis (Rifampicin, Isoniazida, Pirazinamide and Etambutol) and Levofloxacin. The patient evolved with improvement of the obstructive status and discharge on the 28th postoperative day, for outpatient follow-up with Infectious Diseases.

Case 2

ICC male patient, 22-year-old, born in Bolivia and resident in São Paulo (SP) for 18 months, previously healthy, sought medical attention in the Emergency Room presenting mass in the right anterior cervical region for 3 months associated with fever, night sweating and loss weight of 10 kg (15% of body weight) and in the last 4 days, report epigastric pain, watery diarrhea without mucus, pus and blood, nausea and vomiting.

On physical examination, he was in regular general condition, prostrate and discolored. He had a 3cm right anterior cervical mass, mobile, cystic and painful on palpation. Flat and painful abdomen diffusely without signs of peritoneal irritation.

Complementary tests showed anemia, leukocytosis with metamyelocytes appearance, ions and normal renal function. Serology for hepatitis, syphilis, toxoplasmosis and HIV negative and BAAR test on positive sputum test (2 samples).

Chest radiography with evidence of pulmonary parenchyma diffusely compromised by micronodular lesions and the presence of 2 larger nodules, in apical segment of the right upper lobe with 1.9 cm and in the upper segment of the right lower lobe with 1.8 cm.

Tuberculosis treatment was initiated with Rifampicin, Isoniazid, Pyrazinamide and Ethambutol (RIPE Scheme) and after three days, the patient presents worsened of

abdominal pain and wall stiffness, percussion of the abdomen with hyperimpanism and positive sudden decompression. A CT scan of the abdomen and pelvis showed free fluid, pneumoperitoneum in the right parietocholec groove and subcutaneous emphysema in the right hypogastric region (Figure 4).

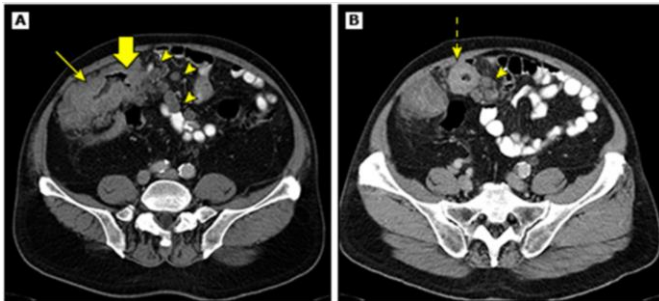


Figure 4: Computed Tomography with contrast of ileocecal tuberculosis. Histologically proven showing thickened terminal ileum (arrow), ileocecal valve (larger arrow) and cecum (dashed arrow) with enlarged necrotic ileocecal lymph nodes (arrowheads).

Exploratory Laparotomy was performed with segmental enterectomy, enlarged right colectomy and terminal ileostomy (Figure 5). At cavity inventory, there was an intense blockage between the intestinal loops, thickening of visceral and parietal peritoneum, with diffuse foci of caseous necrosis, saving retroperitoneum. It also presented thickening of the entire mesentery and mesocolon with the identification of multiple intestinal perforations.



Figure 5: Surgical material for intestinal resection - enlarged right colectomy.

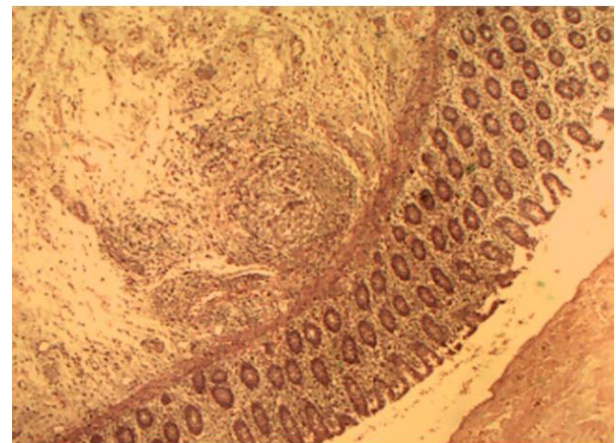


Figure 6: Microscopic aspect of caseous granuloma in HE staining with 10x magnification.

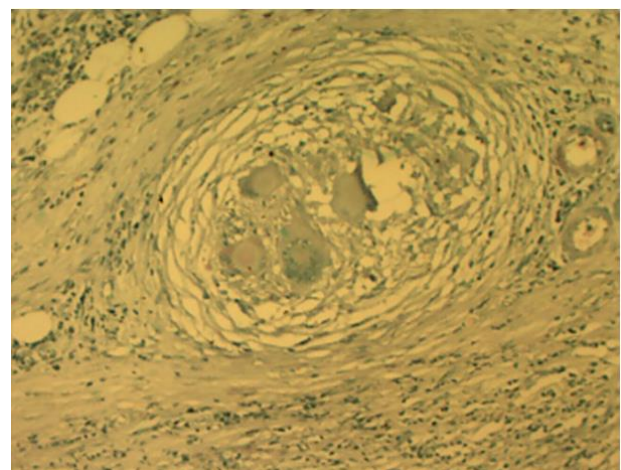


Figure 7: Microscopic appearance of caseous granuloma in P.A.S staining with 10x magnification.

Anatomopathological analysis results in transmural necrotizing and ulcerated granulomatous enterocolitis with necrotizing granulomatous lymphadenitis and tuberculosis aspect (Figures 6 and Figure 7).

On the 20th postoperative day, ultrasound-guided drainage of the intra-abdominal collection was required, with subsequent discharge from the hospital.

DISCUSSION

Intestinal tuberculosis is usually associated with advanced lung disease in 70% to 87% of cases [9]. Of the studied patients, the first presented negative smear with chest tomography suggestive of pulmonary involvement. The second, on the other hand, present positive sample in

the two exams collected, which characterized active lung disease.

The disease can spread through the hematogenous route, through the pulmonary focus, or by swallowing the bacilli present in the sputum. There may still be other forms of dissemination, such as lymphatic or by adjacent organs, but those are more rare [6].

The clinical picture of TBI is nonspecific, and may contain abdominal pain in 85% to 100% of cases, in addition to diarrhea, weight loss, fever, nausea and vomiting [1,9-12]. Therefore, it is usually diagnosed in its complications such as intestinal obstruction, intestinal bleeding, intestinal perforation or with the development of fistulas [13]. The most common of these complications is the intestinal obstruction, despite being rare among the causes of acute obstructive abdomen [1].

The ileocecal region is the main site of greatest impairment because it is rich in lymphoid tissue and in a region of physiological stasis⁸, reaching about 85% of cases, and corresponds to that found in these cases [1,10-12]. In terms of anatomopathology, there are four types of lesions according to several authors, but the hypertrophic form is the major cause of intestinal obstruction. The others found are ulcerative, hypertrophic-ulcerative and sclerotic forms [9,11-13].

The conventional laboratory tests requested at admission to an emergency room are nonspecific and do not contribute to the differential diagnosis. High erythrocyte sedimentation rate, high levels of C-reactive protein, anemia and lymphopenia or lymphocytosis are common laboratory findings [14,15].

Imaging exams such as CT may suggest an asymmetric thickening of the intestinal wall in the ileocecal region, in addition to adjacent mesenteric lymphadenopathy with dilation of loops and upstream hydro-level; however it is only with the histopathological analysis of any fragment

of the lesion that it is possible definitive diagnosis [16-18].

Biopsy remains the gold standard, but it takes time, reaching about 2 to 4 weeks [19]. The pathognomonic signal is the presence of caseous necrosis and acid fast bacilli are identified in the minority of biopsy samples [20]. Retrospective studies suggest large and confluent granulomas as indicative of Tuberculosis, although they are found only in 50 to 80% of patients' mucosal biopsies [21,22].

Tuberculin tests, cultures and serological tests have low sensitivity. PPD, for example, is positive in 50% to 70% of cases, even though it has limited diagnostic value, as it does not distinguish between active disease and previous sensitization [11,16,17].

The differential diagnosis should be made mainly with Crohn's disease and malignant colon neoplasms [10,11]. Lymphadenopathy can give the impression of lymphoma [1]. Non-specific ulcerative colitis, sarcoidosis, amebiasis, histoplasmosis, appendicitis, among others, should also be considered [16].

Intestinal obstruction secondary to tuberculosis is mainly related to the hypertrophic form of the disease and responds poorly to pharmacotherapy, often constituting surgical resolution [9,17]. However, several authors show that cases of gastrointestinal tuberculosis respond favorably to drug therapy, provided that it is started early [10-12].

In the first case reported, the patient already had a diagnosis of tuberculosis when he developed intestinal obstruction, which is why it was possible to institute, early, a conservative treatment that obtained a good clinical response.

CONCLUSION

TBI should be considered in the differential diagnoses of patients with acute obstructive abdomen and with the

institution of specific measures, the success rate with drug treatment is high, with surgical management remaining for the complications of the disease.

REFERENCES

1. Loureiro MP, Cruz P, Fontana A, et al. (2006) Intestinal tuberculosis - minimally invasive diagnosis and resection Case Report. Brazilian Journal of Videosurgery 4(1): 13-16.
2. Mendes WB, Batista CAM, Lima HA, et al. (2009) Intestinal tuberculosis cause of intestinal obstruction: Case report and literature review. Brazilian Journal of Coloproctology 29(4): 489-492.
3. Miranda LO, Araújo GBF, Andrade DFR, et al. (2017) Epidemiological aspects of tuberculosis/HIV coinfection in Brazil: Integrative review. Journal of Infection and Health Prevention 3(3): 59-70.
4. Bastos SH, Taminato M, Fernandes H, et al. (2019) Sociodemographic and health profile of tuberculosis/HIV coinfection in Brazil: A systematic review. Brazilian Journal of Nursing 72(5): 1458-1465.
5. Nguyen VH (2002) Intestinal obstruction due to tuberculosis. Asian Journal of Surgery 5(2): 145-148.
6. Giouleme O, Paschos P, Katsaros M, et al. (2011) Intestinal tuberculosis: A diagnostic challenge - case report and review of the literature. European Journal of Gastroenterology & Hepatology 23(11): 1074-1077.
7. Kentley J, Ooi JL, Potter J, et al. (2017) Intestinal tuberculosis: A diagnostic challenge. A European Journal Tropical Medicine & International Health 22(8): 994-999.
8. Ha HK, Ko GY, Yu ES, et al. (2017) Intestinal tuberculosis with abdominal complications: Radiologic and pathologic features. Abdominal Imaging 24(1): 32-38.
9. Nadal CRM, Nadal SR, Klug WA, et al. (1991) Tuberculose intestinal - formas complicadas. Brazilian Journal of Coloproctology 11(1): 25-28.
10. Donoghue HD, Holton J (2009) Tuberculose intestinal. Current Opinion in Infectious Diseases 22: 490-496.
11. Nari GA, Dalale J, Ponce OH, et al. (2006) Intestinal obstruction due to colonic tuberculosis. Presentation of two cases. Spanish Journal of Digestive Diseases 98(2): 144-150
12. Lopes L, Certo M, Ramada J, et al. (2004) Tuberculose intestinal. GE - Portuguese Journal of Gastroenterology 11: 25-29.
13. Khan R, Abid S, Jafri W, et al. (2006) Diagnostic dilemma of abdominal tuberculosis in non-HIV patients: An ongoing challenge for physicians. World Journal of Gastroenterology 12: 6371-6375.
14. Bromberg SH, Faroud S, Castro FF, et al. (2001) Isolated ileocecal tuberculosis simulating malignant neoplasia and Crohn's disease. Revista da Associação Médica Brasileira 47(2): 125-128.
15. Chuttani HK, Sarin SK (1985) Intestinal tuberculosis. Indian Journal of Tuberculosis 32(3): 117-125.
16. Rubio T, Gaztelu MT, Calvo A, et al. (2005) Tuberculosis abdominal. Anales del Sistema Sanitario de Navarra 28(2): 257-260.
17. Sá Ribeiro FA, Alves ALF (2000) Inflammatory and infectious diseases. In: Vieira OM, Chaves CP, Manso JEF, et al. (Eds.). Surgical clinic: Theoretical and practical foundations. São Paulo: 253-258.
18. Barreiros AP, Braden B, Schieferstein-Knauer C, et al. (2008) Characteristics of intestinal tuberculosis in ultrasonographic techniques. Scandinavian Journal of Gastroenterology 43: 1224-1231.
19. Amarapurkar DN, Patel ND, Rane PS (2008) Diagnosis of crohn's disease in India where tuberculosis is widely prevalent. World Journal of Gastroenterology 14: 741-746.

20. Kirsch R, Pentecostes M, Hall Pde M, et al. (2006) Role of colonoscopic biopsy in distinguishing between Crohn's disease and intestinal tuberculosis. *Journal of Clinical Pathology* 59: 840-844.
21. Makharia GK, Srivastava S, Das P, et al. (2010) Clinical, endoscopic, and histological differentiations between Crohn's disease and intestinal tuberculosis. *The American Journal of Gastroenterology* 105: 642-651.
22. Shah S, Thomas V, Mathan M, et al. (1992) Colonoscopic study of 50 patients with colonic tuberculosis. *Gut* 33: 347-351.