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Case Report

Tuberculosis of the Jejunum in a Kidney Transplant Recipient - A Rare Disease: A Case Report

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Abstract

Tuberculosis of the Jejunum is a rare disease in a solid organ transplant patient. It can present a wide range of symptoms, including fever, vague abdominal pain, weight loss, or blood in the stool, making it difficult to differentiate from another disease process. A high index of clinical suspicion is necessary, and a systematic approach involving endoscopic techniques, imaging studies, and diagnostic laparoscopy as the final approach for histopathologic diagnosis.

This is a case of a 44-year-old male, known End-Stage Renal Disease, post kidney transplant with graft loss and history of pulmonary tuberculosis (PTB) treatment in 2016, who presented with a two-year history of intermittent abdominal pain associated with episodes of low-grade fever, body pains, night sweats, and melena. A stepwise approach for diagnosis was done which included upper and lower endoscopy, CT scan of the abdomen, capsule endoscopy, and lastly with diagnostic laparoscopy, which finally revealed a diagnosis of tuberculosis of the jejunum. The patient was started on quadruple anti-Koch's treatment with significant improvement in his symptoms and was discharged improved and stable.

Keywords: Tuberculosis of the Jejunum; Kidney Transplant Recipient

Abbreviations

RRT: Renal Replacement Therapy; KT: Kidney Transplant; PTB: Pulmonary Tuberculosis

Introduction

Tuberculosis of the jejunum is a great mimicker with an unusual presentation, and its incidence is rare both in the general population and in solid organ transplant patients, with a crude mortality rate in post-transplantation patients of about 20%-30% [1].

Case Report

We present a case of a 44-year-old male, known End-Stage Renal Disease (ESRD) secondary to Chronic Glomerulonephritis, post-kidney transplant (1998), with graft loss since 2016 and is currently on renal replacement therapy (RRT), with prior history of PTB treatment in 2016. The patient presented with a two-year history of intermittent abdominal pain associated with episodes of low-grade fever, body pains, night sweats, and melena. The patient initially disregarded the symptoms but opted for a consult due to a contemplated workups for second kidney transplantation (KT).

Upon hospital admission, blood test showed normocytic, normochromic anemia with a hemoglobin count of 6.6 g/dL and hematocrit of 0.21 L/L and received blood transfusion of two units packed red blood cell. However, over the course of his admission, he had episodes of abdominal pain and melena, which prompted further investigations. Upper and lower endoscopy were done which showed multiple patches of hyperemia and erosions at the antrum, pre-pyloric area and duodenal bulb and non-specific proctitis, mixed hemorrhoids, and anal fissure, respectively. These findings, however, cannot explain his symptoms. Moreover, there was persistence of abdominal pain and melena and later developed hematochezia despite medical therapy with Omeprazole, Rebamipide, and Tranexamic Acid. He was managed as a case of obscure overt gastrointestinal bleeding for which video capsule endoscopy was done, which revealed a suspicious tumor in the small bowel and intestinal lymphangiectasia. Computed tomography scan of the whole abdomen was likewise done which did not show mass lesion nor evidence of obstruction. At this time, clinical decision was made to proceed with exploratory laparotomy due to the persistence of hematochezia. He underwent small bowel resection with note of two small bowel masses, about 2x2 cm fungating in character, 110-120 cm from ligament of Treitz, and 2x1 cm enlarged mesenteric lymph node proximal to the small bowel. These were sent for histopathologic evaluation, which showed chronic granulomatous inflammation with caseation necrosis and Langhan's type multinucleated giant cells suggestive of tuberculous origin, involving the small intestine, bowel resection margin, mesenteric margin, and fourteen lymph nodes. Post-operatively, there was no recurrence of melena nor hematochezia.

This case was signed out as Tuberculosis of the Jejunum. Patient was started on quadruple Anti-Koch's therapy with significant improvement in his symptoms and was eventually discharged well, with plans for KT workups deferred until treatment with Anti-Koch's is completed.

Figure 1.A: Images were taken from Esophagogastroduodenoscopy. Note of multiple patches of hyperemia and erosions at the antrum and pre-pyloric area. Pylorus was essentially normal. Several patches of hyperemia and erosions in the duodenal bulb. The rest of the visualized duodenum was normal.

Figure 1.B: Images were taken from Colonoscopy. Note of several patches of hyperemia in the rectum as well as engorged vessels above and below the dentate line. There was note of linear tear spanning above and below the dentate line.

Figure 2: Series of images taken from Video Capsule Endoscopy. Suspicious of tumor and intestinal lymphangiectasia were documented in the process.

Figure 3: Intraoperative findings showed two small masses (2x2 cm, fungating 110-120cm from the Ligament of Treitz and 2x1cm enlarged mesenteric lymph node, proximal to small bowel). The specimen was sent for histopathological examination showing chronic granulomatous inflammation with caseation necrosis and Langhan's type multinucleated giant cells typical of Tuberculous in origin.

Discussion

Tuberculosis in solid organ transplant patients is a severe threat with a high mortality rate [1] and may have unusual clinical presentations; therefore, approach to diagnosis, similar to treatment, poses a significant challenge. Previous studies showed that tuberculosis incidence in KT recipients is about 35 to 75 times more than the average population. The onset of symptoms in post-kidney transplant has a mean time of about two years, with a median interval of eight months. Moreover, about 56% of cases have been diagnosed in the first year of transplantation which may be related to higher doses of immunosuppression (IS) used and the higher incidence of acute rejections during this period [2]. However, similar to our case, there were reports of gastrointestinal TB occurring several years after KT. Some reasons put forth by some authors for this occurrence are: 1.) Lower dose of IS used in KT, compared to solid organ transplantation in general, 2.) delay in establishing the diagnosis due to nonspecific symptoms and imaging studies and difficult differential diagnoses (e.g. Crohn's disease) may be confounders [9,12,13].

In solid organ transplant patients, gastrointestinal tuberculosis (GITB) can present various symptoms such as fever, weight loss, vague abdominal pain, and blood in the stool, making it difficult to differentiate from other disease processes [3]. The Ileocecal region is the most affected region for about 85-90% of the time [6], but it can also occur anywhere along the gastrointestinal tract. Among these, tuberculosis along the jejunum is rare to find, with almost no clinical data to support its frequency [4] (figure 4).

In non-transplant population, the most common symptoms of GITB are abdominal pain, anorexia, fever, and change in bowel habits, reflecting a pattern of inflammatory presentation. However, in KT recipients, gastrointestinal bleeding, fever, and abdominal pain are the most frequent complaints that reveal a predominant disease's ulcerative feature and reflect the decreased inflammatory response in immunocompromised patients [5]. These were similarly found in our case. Tuberculosis of the jejunum has very few reports, probably due to difficulty in visualizing this area, except in postmortem studies. Up to 70% of patients in endemic areas may have jejunal strictures. The spectrum of lesions encountered is also similar to those seen in the rest of the intestine [4].

A high index of clinical suspicion is often warranted for the diagnosis, as the investigational approach is often complex. Reports have shown that diagnosis is often delayed, and missed diagnosis is often fatal as tuberculosis-related mortality in solid organ transplant recipients has been reported to be as high as 30%. Investigations include clinical and radiological workups as support for the diagnosis [8]. This includes endoscopic procedures and imaging studies. Laparoscopy and even surgery may be needed if other diagnostic procedures are unrevealing. Definitive diagnosis of TB still involves the isolation of Mycobacterium but microbiological confirmation is often difficult to do due to difficulty in obtaining suitable samples, low sensitivity of direct microbiological examination and prolonged waiting time for culture results (up to 6 weeks) [14]. The diagnosis of TB in our case was indirectly established by histopathological evidence of necrotizing granulomatous inflammation, which is the hallmark of Mycobacterium tuberculosis infected tissue.

Treatment of TB for KT patients is the same initial quadruple therapy used in the general population (i.e. Isoniazid, Rifampicin, Pyrazinamide, and Ethambutol for 2 months) followed by Isoniazid and Rifampicin for a minimum period of 4 months [12]. However, prolonged treatment may be necessary depending on the response to treatment [5].

Figure 4: Summary of clinical features, site of involvement, diagnostics, and treatment outcome taken from different case reports.

Conclusion

We reported a rare case of tuberculosis of the jejunum in a KT recipient who presented with recurrent abdominal pain and gastrointestinal bleeding.

Tuberculosis of the jejunum in solid organ transplant patients is a rare disease which possesses a high mortality risk. A high index of clinical suspicion is required to establish early diagnosis. A series of examinations are often warranted, and diagnostic laparoscopy was mainly the last option to reach a histopathologic diagnosis.

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