Patient Education: Gastrointestinal Tuberculosis

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What Is Gastrointestinal Tuberculosis?

Tuberculosis is a disease caused by a type of bacteria named *Mycobacterium tuberculosis* and it usually affects the lungs. It spreads from one person to another by droplets released in air due to coughing by an infected individual. Tuberculosis can affect virtually any organ of the body. The involvement of the gastrointestinal tract is labeled as gastrointestinal tuberculosis. The most common site is the ileocecal region (where the small intestine meets the large intestine), but it can involve any site in the gastrointestinal tract.[1]

Who Can Acquire Gastrointestinal Tuberculosis?

Gastrointestinal tuberculosis can affect individuals of any age or gender. While the disease can affect even individuals with normal immunity, those who have underlying immune suppressed state may be at a higher risk. The risk factors include underlying human immunodeficiency virus infection, diabetes mellitus, undernourished individuals, and individuals who may be on drugs that suppress the immune system (like steroids, antitumor necrosis factor drugs).[2] The gastrointestinal tuberculosis usually occurs as a result of dissemination from the primary disease that occurs in the lungs.

What Are the Signs and Symptoms of Gastrointestinal Tuberculosis?

The most common symptom is abdominal pain. This is usually a result of intestinal strictures (narrowing of a part of intestine) ►**Fig. 1**. Some patients may develop frank intestinal obstruction that may have associated vomiting, distension of the abdomen, and an inability to pass stools or air. About half of the patients also have fever. Typically, there is an evening rise associated with night sweats. Majority have associated weight loss and loss of appetite. Some patients also have diarrhea and a minority may have bleeding in stools. Rarely emergency treatment may be required for intestinal obstruction, perforation of the intestines, or severe gastrointestinal bleeding.[1,2]

Such symptoms are not specific for gastrointestinal tuberculosis and can occur in many other conditions: Crohn's disease that is a form of inflammatory bowel disease, tumors of the intestinal tract like adenocarcinoma, neuroendocrine tumor or lymphoma, and other infections like amebiasis. Therefore, a thorough investigation is often required before a diagnosis of gastrointestinal tuberculosis is made.

When to Consult a Specialist?

Anybody having recurrent pain in abdomen, ongoing fever, and unintended weight loss or diarrhea persisting over more than 2 weeks or having intestinal obstruction (recurring vomiting, pain, abdominal distension, and inability to pass feces or flatus) should consult a specialist.

How Is Gastrointestinal Tuberculosis Diagnosed?

The diagnosis is usually suggested after an imaging of the abdomen using ultrasound or computed tomography. These may detect thickening of the intestinal wall, narrowing of the intestine, enlarged lymph nodes, or fluid in the abdomen (ascites).[3] The results of the imaging guide further investigations. On most occasions, it is possible to reach to the site of involvement using colonoscopy. Here, an endoscope is passed through the anal route to see the entire large intestine and the terminal most part of the small intestine. Biopsies are usually obtained from the site of involvement. The lesions on colonoscopy may be ulcers, narrowing (stricture), or polyps. The biopsy samples are sent for histology and

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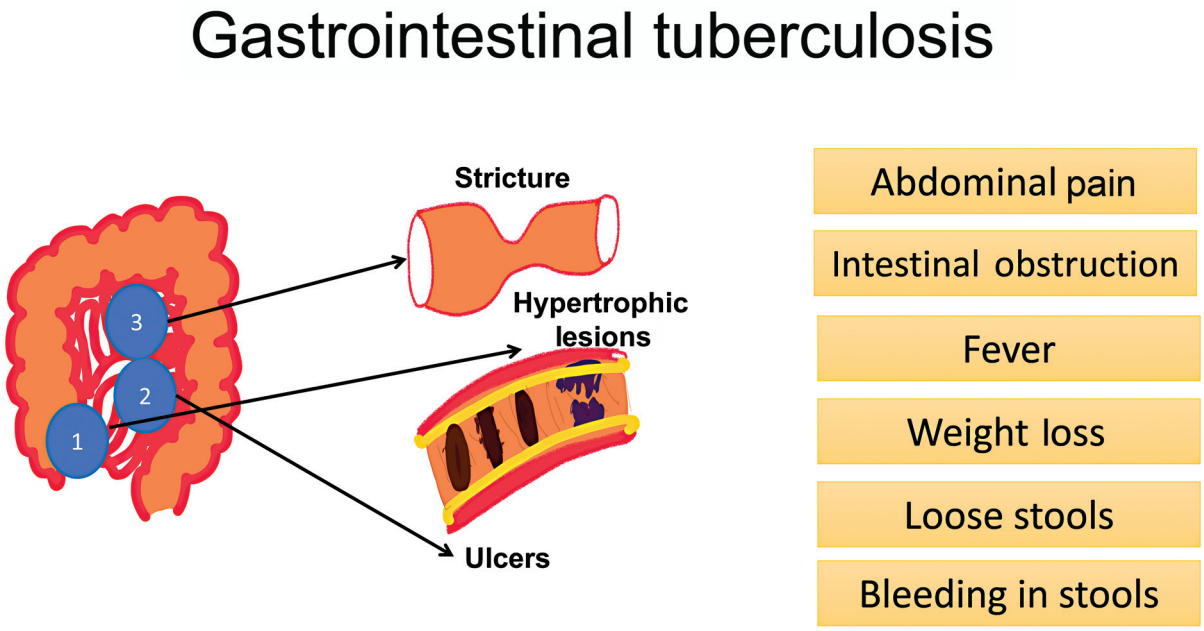

Fig. 1 Symptoms of gastrointestinal tuberculosis and underlying causes.

microbiological tests (culture, and polymerase chain reaction-based tests). Unfortunately, these tests can confirm the diagnosis less than half of the times.[4] Sometimes, the lymph nodes in the abdomen may get enlarged and these can be sampled using ultrasound guidance to make a diagnosis.

It may sometimes to be possible to diagnose tuberculosis from other sites that may be concomitantly involved, for example, sputum testing and chest X-ray in lung involvement.

How Is Gastrointestinal Tuberculosis Treated?

Once a diagnosis is confirmed, multidrug therapy is usually administered. Six months of therapy is usually adequate. Four drugs (rifampicin, isoniazid, pyrazinamide, and ethambutol) are administered for the initial 2 months and pyrazinamide is omitted for the next 4 months.[5]

In some patients, treating clinicians may start antitubercular therapy even in the absence of a confirmed diagnosis of tuberculosis. This is usually done when all the tests have been done and are inconclusive, and the treating doctor thinks that the symptoms and the findings on imaging and endoscopy suggest tuberculosis. Such patients should remain on close follow-up so that the response to treatment is confirmed. There may be a need for repeating a colonoscopy after 2 months of drug treatment to determine response.[6] Sometimes, it may be possible to use a combination fecal or blood tests (fecal calprotectin and serum C-reactive protein) to determine response.[7]

What Are the Complications Which Could Happen?

Some patients who have intestinal obstruction or perforation or severe intestinal bleeding may need surgery. Some patients continue to have abdominal pain even after healing of ulcers. This is because the strictures may not improve with treatment. This may need use of colonoscopy to perform balloon dilatation of strictures. If this is not possible or there are multiple or inaccessible strictures, surgery may be needed.

The treatment of tuberculosis involves multiple drugs that may have adverse effects. Three of these four standard drugs may result in liver injury. The liver function tests may be monitored while on treatment. The patients should bring to attention any symptoms that may develop with drugs like fever or flu like symptoms, vomiting, abdominal pain, jaundice, joint pains or swelling, altered behavior, difficulty in identifying colors, skin rash, muscle pain, and burning sensation in limbs.

What Are the Challenges in the Management of Gastrointestinal Tuberculosis?

The initial symptoms may be nonspecific resulting in delays in diagnosis. The low yield of microbiological tests means that a sure diagnosis is possible in less than half of all cases. The disease closely resembles certain other disease especially a type of inflammatory bowel disease, that is, Crohn's disease. Some symptoms like abdominal pain may persist even with treatment and no drug treatment is yet available that may help in resolution of strictures present even after cure of tuberculosis.

Ethical Statement

Not applicable.

Author Contributions

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Conflict of Interest
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