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Case Report

"A Case Of Malabsorption Syndrome (MAS) Due To Tropical Sprue."

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ABSTRACT

Although tropical sprue is one of the common causes of MAS in Indian adults, it is mostly under diagnosed or misdiagnosed. Despite being easily treatable with tetracycline, inappropriate anti-tubercular treatment is most commonly given in tropical sprue. We report here, a case presented to our hospital, with recurrent diarrhoea, foul smelling stool and severe weight loss. Despite many antimicrobials, vitamins, oral and parenteral nutrition prescribed previously, the patient's condition did not improve. We did some base line investigations and a small bowel biopsy. On account of the reports of all these tests, we presumed that his condition was tropical sprue and treated it with tetracycline for six months and followed him up regularly. He improved with therapy markedly.

Key Words: Tropical sprue, Malabsorption syndrome

Key Messages: All cases of Malabsorption should be evaluated with intestinal biopsy. High level of suspicion required to avoid missing diagnosis of cases which can be treated with ease.

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Introduction

The aetiology of malabsorption syndrome (MAS) may differ in different geographical regions and hence, any case of MAS is to be viewed in context of the geographical area. Though celiac and Crohn's diseases are common causes of MAS, tropical sprue is likely to be more common in developing countries like India. Tropical sprue (TS), a disease which is presumed to be associated with small intestinal bacterial contamination, was reported in sporadic and epidemic forms from India in the past[1],[2]. However, it is now believed that with improvement in socioeconomic status and sanitation, TS is becoming infrequent in India [3]. Tropical sprue is a syndrome characterized by acute or chronic diarrhoea, weight loss, and malabsorption of nutrients. It thought to occur in residents of or visitors to the tropics and subtropics and hence, is named tropical sprue. Though there are a few cases reported from India, either they are underdiagnosed or the diagnosis of tropical sprue is made only after exclusion of all causes. We report here, a similar case which presented with features of MAS and was found to be tropical sprue.

Case History

A 30 year old male Hindu patient from a remote village of Gujarat presented with complaints of increased frequency of stools on and off since 2 years and significant weight loss since 1 year.

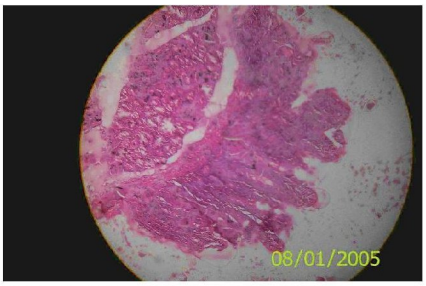
He had recurrent episodes of frequency of stools which was semisolid to watery, 4 to 6 times a day and which were not related with specific food or diurnal variation. There was no blood or pus in the stool. His condition was not associated with fever and vomiting, but he had occasional abdominal discomfort. His stool as reported by the patient was bulky and foul smelling. The frequency of stools was reported to decrease with treatment, but only for a short duration. The patient also had significant weight loss, approximately 12 to 15 kg, in the past 1 year. He complained of easy fatigability during the past one year. There was no history of major illness, jaundice, tuberculosis, joint(s) pain diabetes or constipation, specifically after a bout of diarrhea.

He consulted many primary care physicians for the same. His medical reports suggested that he was given antimicrobial agents, iron and multivitamins, antisecretory agents etc. He was transfused with 2 units of blood for anaemia before six months from the date of admission in the hospital. He very occasionally consumed alcohol, but stopped since the onset of this illness.

On examination, the patient was found to be moderately built, but cachectic [Table/Fig 1]. His conjunctiva was pale. There was no icterus, clubbing, cyanosis, palpable lymphnodes or oedema. His height was 176cm, but his weight was only 42 kg. His vitals were normal. His abdomen was soft, non tender and he had no organomegaly.

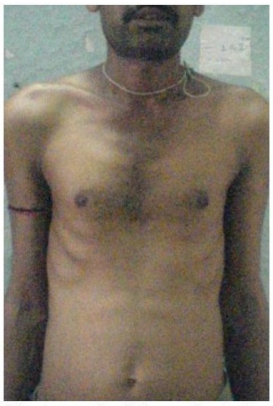
[Table/Fig 1] Photograph of the patient showing severe wasting of muscles.

His haemoglobin was 8.9g/dl and his RBC count was 2.670000/cumm. His total count was 6300/cumm, with a differential count of N64/ L33/ M02/ E01/B00. His ESR was 60 mm/ 1st hour. His platelet count was normal. His mean corpuscular volume (MCV) was 111.1fl, with a mean haemoglobin concentration of 33.4pg and an MCHC of 30.1g/dl. His peripheral smear examination was consistent, with a megaloblastic picture. His total Proteins were 5.7g/dl, with Albumin - 2.8g/dl and Globulin- 2.9g/dl. His chest X-ray was normal. His serum HIV and HBsAg were negative. His stool fat (24hrs) was around 10%, using Sudan black stain. No ova or cyst of any parasite found in stool. Stool culture for organisms was negative. The barium meal follow through study suggested thickened lleal loops and flocculation of the barium. Sluggish peristalsis under fluoroscopic study was noted. The upper GI endoscopy was unremarkable. A biopsy was taken from last part of the duodenum. The biopsy showed marked atrophy of the surface villi. The surface epithelium showed vacuolar degeneration and an increased number of intraepithelial lymphocytes. There was marked atypical enlargement of the nuclei of epithelial cells, suggestive of megaloblastic changes [Table/Fig 2].



[Table/Fig 2] Histology of distal duodenal biopsy showing marked atrophy of surface villi.and surface epithelium showed vacuolar degeneration and increased number of intraepithelial lymphocytes.

Based on the clinical features and investigations, we considered this case to be tropical sprue. The patient was given 250mg of Tetracycline PO q6h for 6 months, along with nutritional supplementations in the form of folic acid 5mg PO OD with iron, calcium, vitamin C and vitamin B12 supplements, considering that he had severe nutritional deficiency. With this treatment, the patient gained 1kg, as observed on the fifteenth day, 4 kgs at one month, and 12 kgs at six months from the date of discharge [Table/Fig 3].



[Table/Fig 3] Photograph of the patient after treatment.

Discussion

Tropical sprue is a clinical entity of unknown aetiology, characterized by an acquired chronic diarrhoeal illness and malabsorption that affects indigenous inhabitants and expatriates, either long-term residents or short-term visitors, in the tropical countries. The exact pathogenetic sequence of TS remains incompletely characterized. Bacterial overgrowth, disturbed gut motility, and hormonal and histopathologic abnormalities contribute to the development of TS in a susceptible host [4].

However, with the improvement in environmental, social and nutritional conditions, this entity is believed to have decreased in India [3]; a recent study has shown it to be a major cause of MAS in India [5].

All the signs and symptoms favoured malabsorption in his case and as the patient was residing in India, it drew our attention to this entity. Raised MCV with megaloblastic picture in his smears, was highly suggestive of vitamin B12 or folic acid deficiency, which is very common in tropical sprue. Due to financial constraints, it was not possible for us to investigate his serum levels of folic and vitamin B12. There was no history of exaggeration or remission. Condition was not improved with gluten free diet makes Celiac disease unlikely and furthermore iron deficiency is more common with celiac rather than Vitamin B12 [6] . Based on these, we excluded celiac disease as a cause in this patient.
Features of barium contrast radiological examination of small intestine is consistent with MAS; however it could not point out to tropical sprue, as in our case. Hence, biopsy was required.

In tropical sprue, jejunal biopsy specimens show wide histological variation; some specimens show minor changes that cannot be confidently distinguished from the appearance of the normal tropical biopsy specimen, whereas in others, there may be frank subtotal villus atrophy. Mostly however, the changes are of intermediate severity, amounting to partial villous atrophy of the crypt hyperplastic type. The appearance differs slightly from that of celiac disease, in that initially at least, lymphocytes are more prominent than plasma cells in the lamina propria and eosinophills may also be more conspicuous. It also appears likely that the mucosal lesions are more extensive and not confined to the proximal small bowl [7]. The

histology of the biopsy taken from the distal portion of the duodenum was the same as described above [Table/Fig 2].

250 mg of Tetracycline four times a day should be used for up to 6 months and may be associated with improvement within 1 to 2 weeds. Folic acid alone will induce a haematological remission, as well as improvement in appetite, weight gain, and some morphologic changes in small intestinal biopsy. Because of the presence of marked folate deficiency, folic acid is most often given with antibiotics [6]. However, considering the patient's poor nutritional status, we considered administering minerals and vitamin supplements together with tetracycline and folic acid. With the treatment, he gained net 12 kgs of weight, there was a marked improvement in symptoms and there was no diarrhoea. The patient's picture was taken on admission and after 6 months of treatment, which is depicted in [Table/Fig 1] and [Table/Fig 3], respectively. We planned for a repeat biopsy after the completion of treatment, but it was refused by the patient as he was asymptomatic after the therapy.

From this case, we stress the importance of biopsy and therapy accordingly, to avoid misdiagnosis and false treatment, resulting in waste of money and health.

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