

## Case Report

# Silent and silenced disease: a rare presentation of Chagas disease

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## ABSTRACT

Chagas disease is an infectious disease caused by the protozoan *Trypanosoma cruzi*. The disease mainly affects the nervous system, digestive system and heart. The objective of this article is to know about the chronic gastrointestinal manifestations of Chagas which are mainly a result of enteric nervous system impairment caused by *T. cruzi* infection. The anatomical locations most commonly described to be affected by Chagas disease are salivary glands, esophagus, lower esophageal sphincter, stomach, small intestine, colon, gallbladder and biliary tree. Most people suffer cardiac damage, including cardiomyopathy, heart rhythm abnormalities and often an apical aneurysm.

**Keywords:** Enteric nervous system, Gastrointestinal tract, Motility disorders, Chagas disease, *Trypanosoma cruzi*, Cardiac damage

## INTRODUCTION

*Trypanosoma cruzi* is the causative agent of South American trypanosomiasis or Chagas' disease. It was first discovered by Brazilian scientist Carlos Chagas, isolated from reduviid bug (triatomine bugs) and blood of infected monkeys. Later, he found it causing human infection also. This disease can also be transmitted by blood transfusion, organ transplantation, from a mother to her fetus and by ingestion of food contaminated with the parasites.<sup>1</sup>

## CASE REPORT

### Clinical scenario

36 years old female patient presented with diffuse abdominal pain since 6 months colicky in nature, intermittent and radiating to back for which patient received symptomatic treatment at local hospital with previous history of multiple blood transfusion over last

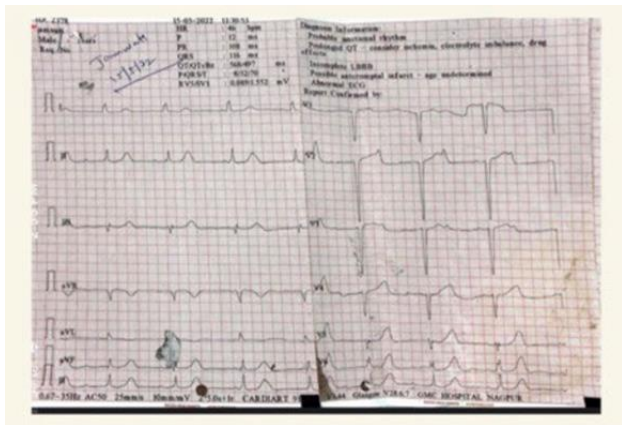
few years. Patient also had history of repeated hospitalizations for similar complaints in last 10 years.

No history of fever, vomiting, trauma, any previous surgeries over abdomen or similar complains in other family members. On examination, the patient was malnourished with evidence of pallor. Patient was vitally stable. Per abdomen was distended and tenderness present diffusely. There was no obvious lump but hyperperistaltic sounds present. On per rectum examination findings were normal.

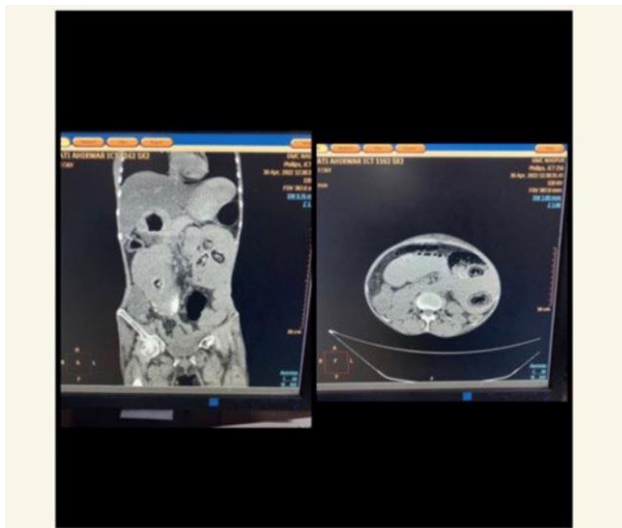
### Investigation

Haematological investigation suggestive of TLC of 12100, potassium 3.2 meq/litres. X-ray abdomen erect was suggestive of multiple air fluid levels with a radio-opaque shadow in left iliac fossa as shown in the Figure 1. Hb electrophoresis concluded AA pattern with reticulocyte count 4.6% s/o chronic anemia. On further investigation, Sr calcium 7.9, Serum 25 OH Vit D=24.48

ng/ml, 24 hr Urinary calcium=4.6 mg/kg/day and Sr PTH 648.2 pg/ml (9 folds raised). ECG findings suggestive of sinus bradycardia, left bundle branch block and QT prolongation. Patient underwent a coronary angiography with insertion of temporary pacemaker preoperatively for persistent bradycardia. CT scan abdomen was done suggestive of dilated small bowel (jejunal) loops with transition zone at radio-opaque foreign body in proximal jejunum with distal jejunal, ileum seen collapsed, with no evidence of cholelithiasis, nondilated common bile duct, no pneumobilia, no intrahepatic biliary radical dilatation with the impression of subacute intestinal obstruction with enteroliths.



**Figure 1: ECG changes.**

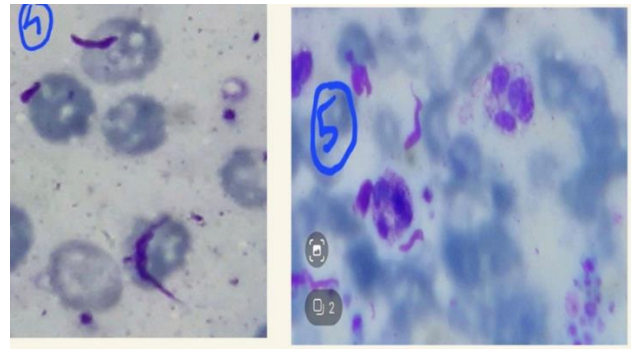


**Figure 2: Coronal and axial view showing enteroliths in jejunum.**

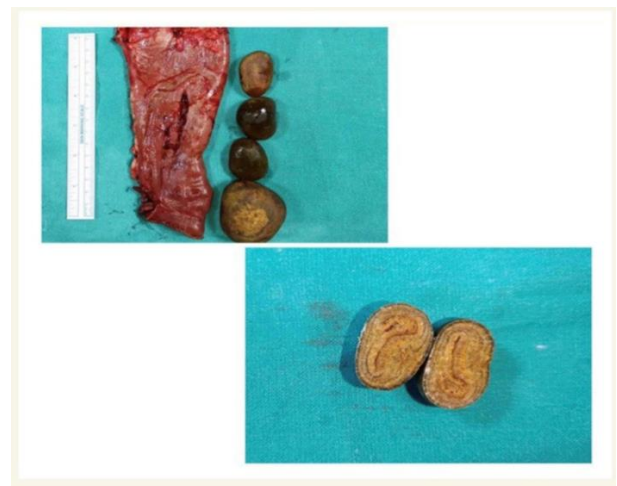
#### ***Intra-operative findings***

Patient was taken for exploratory laparotomy after all pre operative evaluation and fitness with temporary cardiac pacemaker. Intraoperatively dilated jejunal loops were present with stony hard mass felt within. A jejunal segment of 15 cm from DJ flexure was dilated and atonic for a length of 15 cm and distal to it the segment was

collapsed. A stricture noted 30 cm from DJ flexure. There were 4 variable size enteroliths present and retrieved via enterotomy. Jejunio-jejunal side to side anastomosis was done with Endo-linear stapler 60 mm blue cartridge.



**Figure 3: PS and Buffy coat preparation showing flagellate trypomastigote forms with undulating membrane.**



**Figure 4: Mega jejunum along with enteroliths.**

Post operatively, blood smears were studied, thick and thin smears were suggestive of trypomastigotes.

Sections from resected atonic bowel segment were studied and cut. They showed bowel muscle wall studded with tiny dot like structure resembling amastigote forms of trypanosoma. Buffy coat preparation showed flagellates and Trypomastigote forming undulated membrane.

#### **DISCUSSION**

Approximately one third of patients can develop dilation of the gastrointestinal tract (megacolon, megaesophagus, megastomach, megaduodenum, megajejunum, megagallbladder, megacholecystitis) and gastrointestinal motor disorders, such as achalasia of the cardia, disturbances of gastric emptying, altered intestinal transit and colon and gallbladder motor disorders.<sup>2</sup> Chagas disease is known to cause both central nervous system

and enteric nervous system injury. Numerous factors predisposing to the development of primary enterolithiasis includes congenital and acquired diverticular diseases, stricturing or stenosing diseases such as tuberculosis and Crohn's disease, surgical entero-anastomoses, afferent loops, blind pouches, radiation or eosinophilic enteritis, mucosal diaphragmatic disease, intestinal duplication, fistula, malignancy, intra-abdominal adhesions, external compressions, incarcerated hernias, intestinal aganglionosis, intestinal amoebiasis, and ischemic enteritis.<sup>3</sup>

The chronic gastrointestinal manifestations of Chagas disease are mainly a result of enteric nervous system injury caused by *T. cruzi* infection. Human infection with *T. evansi* was first reported by Joshi et al, in an immunocompetent adult from rural Nagpur, India.<sup>4</sup> In India, infection with *T. lewisi* has been reported more frequently than *T. evansi*. It is postulated that infection is transmitted to humans from infected rats through bite of rat fleas or contamination of open wounds with rat feces. Shrivastava, et al reported two cases in adults from Raipur who recovered spontaneously.<sup>5</sup> Shah et al reported a 6-week-girl living in a rat-infested flat in urban Mumbai who presented with fever, hepatosplenomegaly, anemia, thrombocytopenia and hepatitis; and trypanosomes morphologically resembling *T. lewisi* were detected in blood. She recovered spontaneously over a 2-week period. Verma et al reported a case of a 37-day-old infant from Uttar Pradesh.<sup>6</sup>

## CONCLUSION

Our case reports the chronic intestinal manifestation of Chagas disease that can presents as an acute on chronic pain in abdomen. It is important to increase awareness

and suspicion of this entity to ensure early diagnosis and treatment for such patients.

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