Case Report

Severe and treatment resistant strongyloidiasis – indicator of HTLV-I infection

JEYAMANI R, JOSEPH AJ, CHACKO A

ABSTRACT

The association between severe and persistent strongyloidiasis with human T cell lymphotropic virus type I (HTLV-I) infection is well documented in reports from HTLV-I endemic regions like Japan and Jamaica. But there are no reports from non-endemic areas like India. We report a case of severe intestinal strongyloidiasis in a 45-year old Keralite man, living in Sikkim. Despite standard treatment with many courses of albendazole, his stool persistently showed Strongyloides stercoralis larvae. In the absence of other immunosuppressive conditions, human T cell lymphotropic virus type I infection was considered and determined positive. Subsequently, treatment with 2 courses of ivermectin achieved eradication of the infection. On follow-up, 3 years later, his stools again revealed Strongyloides stercoralis larvae.

Key words: Strongyloides stercoralis, HTLV-I

INTRODUCTION

Strongyloides stercoralis is the most common human parasitic nematode capable of completing a life cycle and proliferating within its host. The majority of patients with strongyloidiasis have asymptomatic infection or mild disease. However, when autoinfection occurs, a high number of infecting larvae can gain access to the bloodstream by penetrating the intestinal mucosa leading to severe hyperinfection and the development of disseminated strongyloidiasis. A close relationship between human T cell lymphotropic virus type I (HTLV-1) and Strongyloides stercoralis has been reported from endemic regions like Japan and Jamaica. This has not been reported from India where the prevalence of HTLV-I is very low especially in HIV seronegative persons.

CASE REPORT

A 45-year old Keralite man, living in Sikkim presented with a one-year history of recurrent vomiting, borborygmi, abdominal distention relieved by vomiting, intermittent watery loose stools and weight loss. Nine months before, he had been treated for tuberculous lymphadenitis and had completed the full course. On examination, he was emaciated and had mild pallor and pedal oedema.

Laboratory examination revealed a haemoglobin of 10.2 g/dl with a mean corpuscular volume of 90.9 fl. Total serum proteins were 5.8 g/dl (normal 5.7-7 g/dl) and serum albumin was 2.5 g/dl (normal 3.5-5.0 g/dl). Stool microscopy on three consecutive days showed numerous Strongyloides larvae. Barium meal follow through study revealed effacement of mucosal folds in the 3rd and 4th parts of the duodenum and multiple small sacculations arising from the superior portion of the 3rd part of duodenum and jejunum with normal ileum and ileocaecal junction. Endoscopic biopsies depicted Strongyloides infestation in the stomach, duodenum and jejunum. Colonoscopy was normal and colonic and ileal biopsies were unremarkable. He was treated with albendazole for 5 days. His stools continued to show Strongyloides larvae and he was hence given a course of ivermectin 200 µg/kg in 2 doses at 2 week intervals. His symptoms improved significantly but his stool persistently revealed Strongyloides larvae.

Since he had had extrapulmonary lymph node tuberculosis recently and persistent Strongyloides infestation resistant to standard therapy, underlying immunosuppression was considered and investigated into. HIV serology was negative. The association between persistent and severe strongyloidiasis was kept in mind, and HTLV-I serology was done and found positive. His wife tested negative. He was given 3 courses of ivermectin. Within a few weeks, his serum albumin improved to 4 g/dl. The patient remains well. He is being kept under close surveillance for other consequences of HTLV-I infection like lymphoma and paraparesis. During his third annual visit Strongyloides larvae were positive on stool microscopy. He was again treated with 2 courses of ivermectin at 3 month intervals.

DISCUSSION

Human T-cell lymphotropic virus type I has been associated with a malignant disease namely, adult T-cell leukaemia/lymphoma and several non-malignant conditions, notably the chronic neurodegenerative disorder, HTLV-I associated myelopathy (also known as tropical spastic paraparesis), infective dermatitis of children and uveitis. HTLV-I has a worldwide distribution with major endemic foci in the Caribbean and southern Japan. The public health importance is confirmed by the major routes of transmission, which are mother-to-child, blood transfusion, and sexual contact. Unfortunately, no vaccine is available yet and there is no proven treatment for advanced HTLV-I disease.

In a prospective study of patients with intestinal strongyloidiasis without known immunosuppression who failed to respond to standard therapy with ivermectin or thiabendazole (failure was defined as one positive stool examination at the post-therapy follow up), 75% were positive for HTLV-I infection. The association of HTLV-I and strongyloidiasis has been shown to be fatal.

Strongyloides stercoralis patients with HTLV-I co-infection have modified immunological responses against parasite antigens and co-infection has clinical implications for treatment of strongyloidiasis. The high production of IFN-gamma observed in patients who are co-infected decreases...
the production of IL-4, IL-5, IL-13 and IgE molecules that participate in the host defence mechanism against helminths. Moreover, strongyloidiasis is harder to treat in patients co-infected with HTLV-1. Alterations in the immune response against *Strongyloides stercoralis* and decrease in the efficacy of anti-parasitic drugs are responsible for the increased prevalence of *Strongyloides stercoralis* among HTLV-1 infected subjects and make HTLV-1 infection the most important risk factor for disseminated strongyloidiasis.1

Hence it is important to investigate for coexistent HTLV-I infection in patients with treatment resistant and severe strongyloidiasis as frequent recrudesences are common in these patients. Treatment of HTLV-I is not indicated for asymptomatic individuals, and management is confined to the early diagnosis of clinical manifestations and the prevention of transmission to others. The latter includes avoidance of breast feeding in endemic areas, screening of blood donors, as well as promotion of safe sex and discouraging needle sharing.

**REFERENCES**

Primary oesophageal tuberculosis: A rare entity

HARISH K, GOKULAN C

ABSTRACT
Tuberculous infection of the oesophagus is rare and primary oesophageal tuberculosis is seen even more infrequently. We report a case of oesophageal tuberculosis in a 32-year-old female patient who presented to us with odynophagia and weight loss. Endoscopy showed a solitary ulcerative oesophageal lesion. Further investigation resulted in a diagnosis of oesophageal tuberculosis with no manifestations of tuberculosis elsewhere. She responded well to antitubercular treatment. This case was classified as primary oesophageal tuberculosis.

Key words: tuberculosis; oesophagus; dysphagia; granuloma

INTRODUCTION
Mycobacterial involvement of the oesophagus is very rare, constituting only about 0.3% of cases of gastrointestinal tuberculosis. Oesophageal tuberculosis is generally secondary to mycobacterial disease elsewhere and only a few cases of possible primary oesophageal tuberculosis have ever been described.

CASE REPORT
A 32 year-old female patient presented to us with a 4-week history of odynophagia, anorexia and 6 kg weight loss. There was no history of fever, night sweats, vomiting, haematemesis, cough, or sputum production. No history of caustic ingestion, smoking, alcohol or illicit drug abuse was present. She denied prior history of tuberculosis or exposure to it. Physical examination was unremarkable. Blood tests revealed normochromic normocytic anaemia (haemoglobin 10.4 g/dl) and an elevated erythrocyte sedimentation rate of 64 mm/hour. The white cell count was 10,600/mm$^3$ with a normal differential count and the platelet count was 345,000/mm$^3$. Liver and renal function tests were normal. Chest x-ray was unremarkable. Upper endoscopy revealed an ulcerative lesion 3-4 cm in size at the lower oesophagus, 36 cm from the incisors (Figure 1). Pathological examination showed multiple epithelioid non-caseating granulomas without any evidence of malignancy (Figure 2). No acid-fast organisms were observed on staining and culture for fungi were negative. Polymerase chain reaction (PCR) assay of the specimen was positive for tubercle bacilli. A purified protein derivative skin test was positive after 48 hours. CT scan of the chest showed thickened oesophagus with ulceration in its distal third. There was no pulmonary lesion, or mediastinal/hilar lymphadenopathy.

DISCUSSION
Oesophageal tuberculosis is very rare and primary oesophageal tuberculosis is seemingly even more exceptional. Oesophageal tuberculosis is considered primary when there is no other detectable tubercular site and secondary when the oesophagus is involved by spread from adjacent structures. The factors which protect the oesophagus from tubercular infection include the presence of a stratified squamous epithelial...
lining, tubular structure, coating of the mucosa with saliva and mucus, and rapid peristaltic transit of swallowed substances that prevents stasis and mucosal invasion by organisms. The most common mechanism for secondary involvement of the oesophagus is reactivation in mediastinal lymph nodes and erosion into the oesophagus. It can also occur via local extension from pharyngeal or laryngeal disease, broncho-oesophageal fistulae, infected aortic aneurysms or infected bone, retrograde flow of lymphatic drainage from infected paratracheal, subcarinal or peribronchial lymph nodes, and haematogenous spread. The first case of primary oesophageal tuberculosis was reported by Torek in 1931. Since then only a few cases have been reported. The most common symptom is dysphagia occurring in over 90% of cases. Other common symptoms include odynophagia and retrosternal pain. Constitutional symptoms like fever, weight loss, and anorexia may also occur. Cough on swallowing suggests the development of a tracheo-oesophageal or broncho-oesophageal fistula. Oesophageal tubercular ulcers have a tendency to bleed because they are deep and massive bleeding has been reported because of deep penetration of the ulcer into the aorta with resultant oesophagoaortic fistula. Tuberculous lesions can occur in any segment of the oesophagus but are most common in the middle-third of the oesophagus because of its proximity to the mediastinal and hilar lymph nodes. Oesophageal ulcerative form. The ulcers are typically multiple, large, and deep with sharp irregular margins. Strictures and fistulae are also common. A hypertrophic growth mimicking oesophageal cancer can also occur. Occasionally, oesophageal tuberculosis manifests as hyperaemic patches and nodules in the distal oesophagus that are difficult to differentiate from peptic oesophagitis. Diagnosis requires endoscopy along with biopsy and Ziehl-Neelsen staining and culture of the biopsy specimen. Endoscopic biopsies are useful but reveal the classical granuloma in only 50% of cases, whereas acid fast bacilli are demonstrated in less than 25%. Recently, cytology and PCR have also proven useful in cases where the initial biopsies showed non-specific changes. A CT scan of the thorax and/or endoscopic ultrasonography is mandatory for documentation of the secondary nature of the disease. Oesophageal carcinoma, fungal and viral infections, ingestion of caustic material, syphils and Crohn’s disease should be considered in the differential diagnosis. A diagnostic dilemma may result in an unnecessary oesophagectomy. The outcome is generally good and antituberculoc chemotherapy alone is largely successful; surgery is reserved for complications including non-healing tracheo-oesophageal or broncho-oesophageal fistulae, stricture, or bleeding from an aorto-oesophageal fistula. A 6-to-9 month course of antituberculosis chemotherapy is sufficient with a regimen consisting of four first-line drugs, namely isoniazid, rifampicin, ethambutol, and pyrazinamide for the initial two months, and then continuing with isoniazid and rifampicin for another four to seven months. In our patient, the histopathology, positive PCR, positive tuberculin skin test, inability to demonstrate tuberculosis elsewhere and complete response to anti-tuberculous treatment affirmed a diagnosis of primary tuberculosis of the oesophagus.

REFERENCES

Enteric fever with suspected intestinal perforation and incidental renal cell carcinoma- A case report

OSUAFOR ON, OTEGBAYO JA, OGUN GO, OLUWASOLA AO

ABSTRACT
Enteric fever presents with protean manifestations, at times eluding the treating physician. We report the case of a 19-year-old woman whose clinical presentation suggested enteric fever, however, autopsy revealed occult renal cell carcinoma. We emphasise here, the need to investigate non-infective causes of pyrexia.

Key Words: enteric fever, renal cell carcinoma

INTRODUCTION
Infectious diseases are still remarkably common in developing countries where there is poor personal and communal hygiene. Enteric fever is a major waterborne disease and there has been little, if any, change in the mortality rate over the years.1,2 Due to its variable presentation, diagnosis is often missed and therapy delayed, further increasing the risk of death.3,4 Renal cell carcinoma, a malignant tumour of the kidney, first described by Grawitz in 1883, is the commonest tumour of the kidney, commoner in men and has been described across various age groups. Renal cell carcinoma commonly presents with a triad of haematuria, loin pain and flank mass. It may cause non-remitting fever (found in 20% of cases) and abdominal pain. We present a case of enteric fever with suspected intestinal perforation with incidentally detected asymptomatic renal cell carcinoma.

CASE REPORT
A 19-year-old female patient was admitted with a 2-week history of severe headache and high-grade fever. She developed severe, colicky generalised abdominal pain 5 days after the onset of illness and later, progressive abdominal swelling, jaundice and diarrhoea. There was no history of constipation, loin pain, haematuria or haematochezia. She had no previous sexual exposure and had normal menstrual history. She had been managed at a peripheral hospital for enteric fever with no improvement before being referred to us.

On admission, the patient had an axillary temperature of 38.4°C. There was a tinge of scleral jaundice but no conjunctival pallor. The pulse was 120 per minute, regular and of normal volume. Blood pressure and respirations were 100/70 mmHg and 35 per minute respectively. The lung fields were clear. The abdomen was uniformly distended with florid signs of peritonitis, as well as ascites. There was tender hepatosplenomegaly and bilateral loin tenderness, which was more on the right side. A tender left loin mass was palpable. Abdominal paracentesis yielded a cloudy yellowish fluid.

A clinical diagnosis of typhoid septicaemia with likely perforation, and right perinephric abscess was made. Pyelonephritis was kept in mind as a differential diagnosis. She later developed clinical features of acute renal failure. Laboratory investigations revealed blood urea: 266 mg/dL, serum sodium: 125 mmol/L, serum potassium: 5.1 mmol/L, serum calcium: 98 mmol/L, serum bicarbonate: 12 mmol/L, PCV: 34%. LFT: Total bilirubin: 6.5 IU/L, alkaline phosphatase: 262 IU/L, AST: 77 IU/L, ALT: 33 IU/L; total serum protein: 6.8 g/dL, serum albumin: 2.3 g/dL. Abdominal ultrasonography showed hepatomegaly and a mass in the upper pole of the right kidney and the causes suspected were haemorrhage, abscess or neoplasm. Random blood glucose was 85 mg/dL. Urine culture was sterile for pathogens and ascitic fluid culture revealed heavy growth of Escherichia coli that was sensitive only to ceftriaxone.

DISCUSSION
This report emphasises that even where effective antibiotic
may learn from this report is that it is important not to compromise surgical intervention in a patient of typhoid fever who has developed features of peritonitis. In our patient, surgery was delayed because the patient was adjudged a poor risk as a result of the septic shock and acute renal failure that had developed. Although some reports have shown benefits of corticosteroids in severe *Salmonella typhi* toxaemia it is impossible to say if this measure might have been effective in our patient.\(^9\) The main renal complications associated with typhoid fever are pyelonephritis, nephrotic syndrome and glomerulonephritis. The bilateral loin tenderness in this patient led us to make a presumptive diagnosis of pyelonephritis. The incidental finding of renal cell carcinoma instead of the suspected pyelonephritis is interesting though very likely of no significance. This case also illustrates the occult nature of renal cell carcinoma and its ability to assume massive proportions without manifesting the classical triad of haematuria, loin pain and frank mass. It must be emphasised that renal cell carcinoma occurs mainly between the sixth and eighth decades of life and rarely occur in adults younger than 40 years of age.\(^9\) Young age at diagnosis, as in this patient, is characteristic of familial forms but only a small fraction of patients have an affected family member.\(^10,11\) Renal cell carcinoma was not high on our list of differential diagnoses in this patient considering her age and clinical profile which prevented reasonable objective assessment of her condition. This is not surprising given that two-thirds of renal cell carcinomas found in a series of patients studied at autopsy were not recognised clinically.\(^10\) Imaging procedures, such as CT or ultrasonographic scan of the abdomen usually facilitate the antemortem diagnosis of clinically silent renal cell carcinoma as was seen in this case. However the ultrasound suspicion of renal neoplasm was not absolutely considered in this patient because of the absence of corroborating evidence.\(^12,13,14\) This report also highlights the importance in considering non-infectious causes of fever particularly for physicians practising in tropical and sub-tropical countries. Most patients with cancer have fever at some time during the course of their illness. The fever may be related to concomitant infection, localised obstruction by the tumour, surgery and postoperative complications, or the neoplasm itself. Neoplasms that are most frequently associated with fever are Hodgkin’s lymphoma, non-Hodgkin’s lymphoma, leukaemia, hepatoma and renal cell carcinoma. Biopsy of accessible lymph nodes or organs remains the most definitive approach to investigate neoplastic causes of pyrexia of unknown origin while the importance of comprehensive history and meticulous physical examination cannot be over emphasised.

**REFERENCES**