An unusual pseudoneoplasm: mass-forming tuberculosis infection mimicking rectal carcinoma

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ABSTRACT

A rare case of primary rectal tuberculosis presented as a rectal mass, indistinguishable clinically and radiologically from advanced rectal carcinoma . Histology failed at first to identify granulomas, acid fast bacilli, or malignancy, but subsequent biopsies showed multiple epithelioid granulomas with caseating necrosis and Langhans giant cells. Given these findings and the high regional incidence of tuberculosis, presumptive diagnosis was given and anti-tubercular drugs were initiated followed by resolution of the mass and symptoms.

Keywords: Langhans giant cells; Primary rectal tuberculosis; Rectal carcinoma; Tuberculosis.

INTRODUCTION

Numerous infectious and not infectious conditions of the digestive tract can give origin to mass lesions that can be confused with carcinoma. Among infectious disease that may affect the digestive tract is tuberculosis. Tuberculosis remains a major public health problem worldwide[7]. Extra-pulmonary tuberculosis (TB) accounts for less than 15% of all cases of tuberculosis[1,2]. Among extra-pulmonary cases the intestinal form constitutes less than 1% of cases[3]. Tuberculosis can affect any part of the gastrointestinal tract; however rectal tuberculosis is amongst the rarest manifestations[4,5]. Previous reports of tuberculosis in which rectal masses were misdiagnosed as rectal carcinoma have been documented[6].

CASE REPORT

A 58 year-old female presented to the outpatient clinic of a regional referral hospital in Bhutan with complaints of painful defecation, severe backache, pain in the anal region, and intermittent fevers for more than two years which progressively aggravated over time. She gave a history of significant weight loss, loss of appetite, and a few episodes of passing blood and mucus in stool. The patient was prescribed several courses of antibiotics and analgesics over the two years but showed no signs of improvement. There was no family history of malignancy.

On examination she had marked pallor but all other vital parameters were normal. Systemic respiratory and cardiovascular examination was normal. Per rectal examination showed a lump with irregular palpable margins. The rectal mucosa was free and the mass was impinging on the upper portion. There was no bleeding on finger withdrawal. Routine stool examination revealed numerous WBCs and tested positive for occult blood. Routine blood examination showed haemoglobin of 7gm/dL, TLC of 8,900/µl, ESR at 85mm/hr, and all other hematological parameters normal. She was referred to the National Referral Hospital in Thimphu, a tertiary health centre in Bhutan for colonoscopy, for further management. Further evaluation revealed normal chest X-ray with negative HIV serology and Mantoux .

Colonoscopy revealed a proliferative growth at 15 cm from the anal verge (Figure 1a. and 1b). Multiple biopsies were taken from the growth and were sent for histopathological examination. Ultrasound of the abdomen revealed an incidental left ovarian cyst measuring 3.9 x 2.9 cm. Upper gastro-intestinal examination revealed no abnormality.

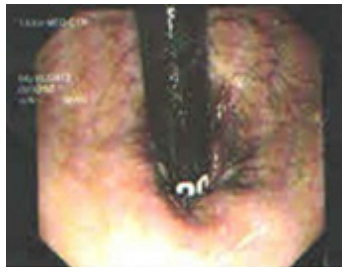

Figure 1a. Rectum/ Anal verge (Endoscopy)

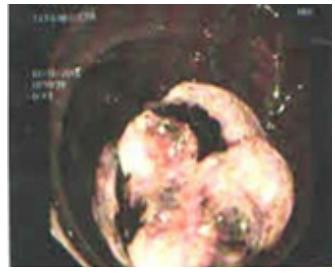

Figure 1b. Rectal lesion on NBI (Endoscopy)

CT scan showed an intra-luminal mass in the proximal rectum involving the retro-sigmoid junction with mild proximal dilation. Perigastric and coeliac axis nodes and other matted nodes were seen adjacent to the rectal mass with para-rectal fat stranding (Figure 2). Clinically and radiologically, she was provisionally diagnosed with carcinoma of the rectum, Stage III.

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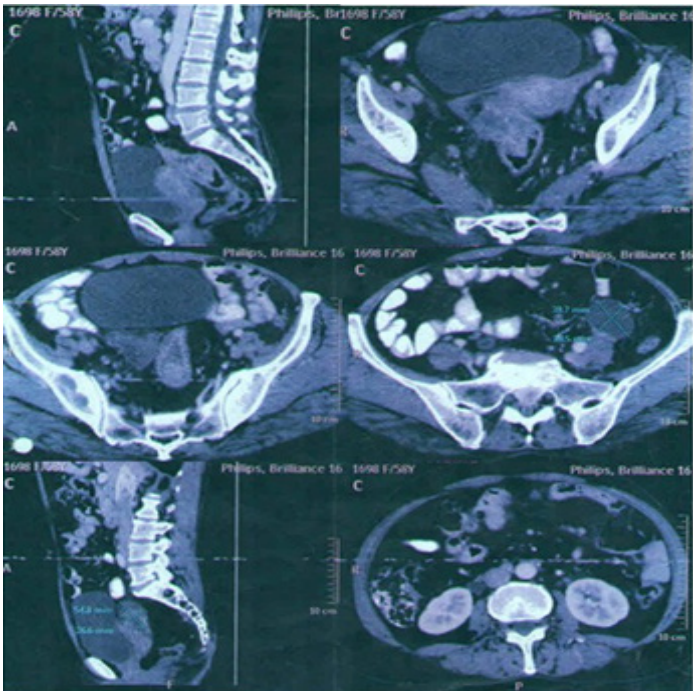

Figure 2. Images CT scan performed showing intraluminal mass in the proximal rectum involving the retro-sigmoid junction with mild proximal dilation

Macroscopic examination of the biopsy tissue showed multiple whitish tissue parts measuring 1x1x0.1 cm. Optical microscopic exam showed mucosa, predominantly necrotic tissue and reactive atypia of the glands. However, no invasive carcinoma or granulomas were seen. The patient was referred to a tertiary care oncology center in India for a second opinion. Histopathology slide review at the centre concurred with the previous findings. An MRI examination done at the centre revealed a pedunculated polypoidal mass arising from anterior and right lateral wall of upper rectum with cystic areas and breach of serosa at the attachment site. Provisional diagnosis of advanced rectal carcinoma was made and the patient was scheduled for repeat colonoscopy and biopsy. Repeat colonoscopy showed similar findings as previously. Two tissue biopsies measuring 2.5 cm each were taken and sent for histopathological examination (Figure 3a, 3b, 3c). Multiple caseating epithelioid granulomas with Langhans giant cells, lymphocytes and plasma cells were found. The tissue surface showed ulceration with infiltration by polymorphs forming focal micro abscesses. No evidence of malignancy was seen. Ziehl Nielsen staining for acid fast bacilli was negative (Figure 4a, 4b, 4c).

Based on the morphology a diagnosis of granulomatous inflammation consistent with tuberculosis was given. The patient was put on two months of intensive anti-tuberculosis therapy with four drugs (isoniazid, rifampicin, ethambutol, and pyrazinamide) and four months of continuation therapy with two drugs(isoniazid and ethambutol) as indicated for extra-pulmonary tuberculosis. After starting treatment, the lesion showed

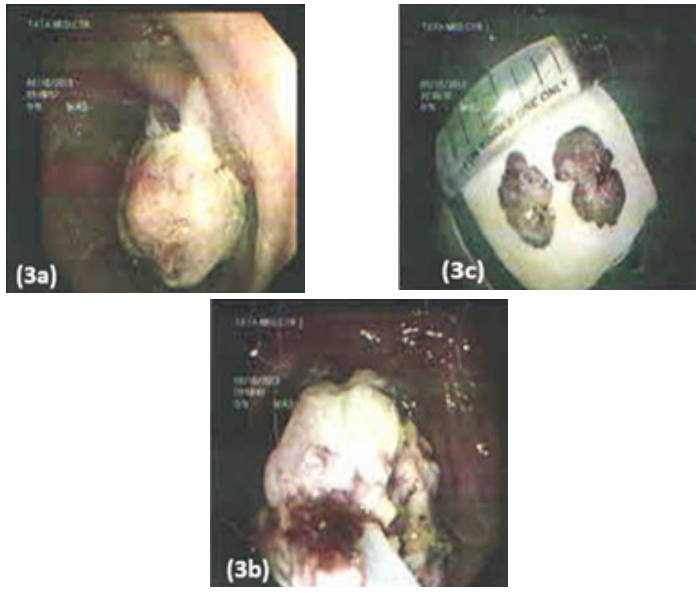

Figure 3a. Large rectal polyp seen, 3b. Snare polypectomy, 3c. Snared tissue retrieved for histology

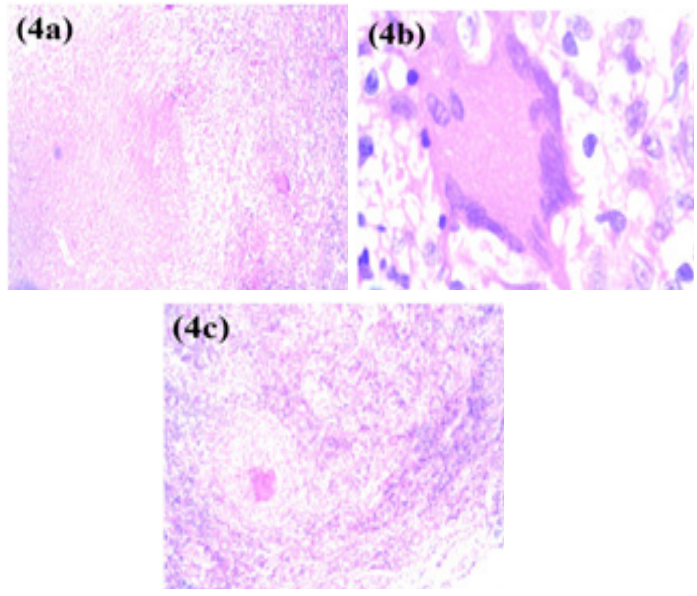

Figure 4. Histopathology, 4a. Caseating necrosis (10x), 4b. Langhans type of giant cells (40x), 4c. Epithelioid cell granulomas (H&E, 10x)

remarkable decrease in size and vascularityon sigmoidoscopy. Follow upon completion of the treatment course at six months showed complete disappearance of the lesion.

DISCUSSION

Tuberculosis of the gastrointestinal tract can be primary or secondary. Approximately 20%-25% of cases of tuberculosis of the gastrointestinal tract suffer simultaneous pulmonary disease[9]. In primary or secondary tuberculosis of the gastrointestinal tract,

the area more commonly involved is the terminal ileum, cecu, and appendix (85% of cases), while the left colon and rectum are less commonly affected4, 5. In a series of 37 patients described by Mukewar S et al., only 5% of patients had involvement of the rectum[10]. Tuberculosis of the gastrointestinal tract may take an ulcerative phenotype (the most virulent form, seen in the majority of cases including our case here), or can be of the hypertrophic type, or a combination of the two. The hypertrophic type can be mass-forming with abundant scarring and capable of stenosis, and, given the common terminal ileum location, can mimic Crohn's disease.

While tightly aggregated epithelioid histiocytes and Langhans giant cells with caseating necrosis and lymphoid cells cuff are typical, they cannot always be successfully sampled. Mucosal biopsies may show only nonspecific chronic inflammation, architectural distortion, pyloric metaplasia, fissuring, and fibrosis causing great concern for a diagnosis of Crohn's disease. Findings can also mimic infection with Yersinia or can remain entirely non-diagnostic. The diagnosis of rectal mass-forming tuberculosis based on non-specific symptoms is therefore difficult in the absence or awareness of primary pulmonary tuberculosis. Complete and repeated histopathological exam and microbiological investigation may be required.

Tuberculosis of the rectum should be considered as part of the differential diagnosis in patients presenting with rectal mass in a tuberculosis endemic country. The prognosis with anti-tuberculosis treatment is very satisfactory, sparing the patient unwarranted surgical intervention unless complications develop. Because rectal tuberculosis isa rare phenomenon it can be overlooked, making patients undergo repeated procedures. Appropriate standard anti-tuberculosis therapy leads to healing within six months.

We recommend a high clinical index of suspicion of tuberculosis, thorough histopathological examination, excision of any fistula, and rectal biopsy for cases of rectal and/or anal lesions in highly endemic areas. Anti-tuberculosis treatment should be immediately started to ensure early healing and cure of the disease.

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