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Case Report

Primary paraduodenal tuberculosis in its pseudotumoral form: A case report and review of the literature ☆,☆☆

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ABSTRACT

Abdominal tuberculosis presents with nonspecific clinical and radiological features, often leading to diagnostic and therapeutic delays. Retroperitoneal pseudo-tumoral tuberculosis is a rare radio-clinical entity, characterized by its atypical and confusing symptomatology. We present the case of a 48-year-old male patient with no significant medical history, who was admitted to our department with a right retroperitoneal tumor presented as right renal colic due to compression of the lumbar ureter. Initially misdiagnosed as a gastrointestinal stromal tumor (GIST) of the lower duodenal angle, the patient underwent duodenal wedge resection, right hemicolectomy, and resection of the right lumbar ureter. Pathological examination of the surgical specimen confirmed follicular tuberculosis. The patient was subsequently treated with antitubercular drugs for 6 months with a good follow-up. Retroperitoneal pseudo-tumoral tuberculosis exhibits a polymorphic and nonspecific clinical presentation in our setting, highlighting the importance of early endoscopic or image-guided biopsies to prevent unnecessary surgical interventions.

Introduction

Extra-pulmonary tuberculosis accounts for nearly one-third of reported tuberculosis cases in Morocco [1]. It manifests primarily in decreasing order of frequency in the lymph nodes, genitourinary system, osteo-articular system, and neuro-meningeal system [2]. Abdominal tuberculosis, comprising 5%-10% of all cases, can involve various organs and often presents with atypical clinical and radiological features [3].

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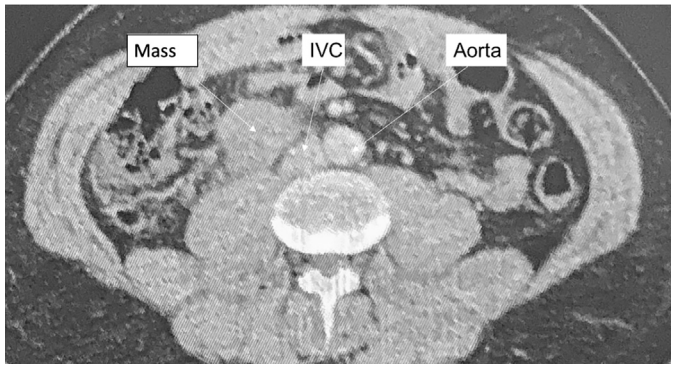

Fig. 1 – Sagittal plane of a CT scan showing a retro-peritoneal and laterocaval tumor.

The pseudo-tumoral form, while rare, poses a diagnostic challenge as it may mimic malignant tumors.

Here, we present a case of duodenal pseudo-tumoral tuberculosis to highlight the diagnostic and therapeutic complexities associated with this uncommon manifestation, and to emphasize the importance of considering tuberculosis in the differential diagnosis of abdominal masses in endemic areas.

Case presentation

We present the case of a 48-year-old male patient, father of 2 children, with no significant medical history, who was admitted to our department with a right retroperitoneal tumor.

The patient reported a history of intermittent right-sided abdominal pain, resembling renal colic, for the past 6 months. He also mentioned experiencing unintentional weight loss of approximately 5 kg over the past 3 months, along with occasional low-grade fever and night sweats. There was no history of cough, hemoptysis, or contact with individuals known to have tuberculosis.

On admission, the patient was in good general condition, with a body mass index (BMI) of 30, stable hemodynamics, and a soft abdomen. Laboratory tests showed hemoglobin levels of 14 g/l, white blood cell count of 7000/mm^3, C-reactive protein (CRP) level of 15 mg/l, urea level of 0.35 mg, creatinine level of 7 mg, and normal blood sugar. Tumor markers, including carcinoembryonic antigen (CEA) and cancer antigen 19-9 (CA 19-9), were within normal limits.

Abdominal ultrasound revealed right hydronephrosis. Subsequent imaging studies, including contrast-enhanced CT and MRI, identified a 4 cm retroperitoneal mass closely adherent to the inferior vena cava and right ureter, with features suggestive of a gastrointestinal stromal tumor (GIST) originating from the duodenal angle (Fig. 1-4).

Endoscopic examination of the duodenal mucosa appeared normal, with extrinsic compression at the D2-D3 angle. Endoscopic biopsy was inconclusive.

Given the presumed diagnosis of GIST based on tumor size and retroperitoneal location, a second CT-guided biopsy was deemed unnecessary, and laparoscopic exploration was not pursued.

During surgery via a right subcostal approach, the tumor appeared atypical for a GIST, being whitish and unresectable from adjacent organs. Consequently, a bloc resection of the tumor with a margin on the duodenum (D3-D4) (Fig. 5), right hemicolectomy due to involvement of the right ileocolic mesentery, partial resection of the right ureter (Fig. 6), and restoration of continuity with a double J probe were performed. The patient had an eventful immediate postoperative course.

Histopathological examination of the resected specimen revealed caseating granulomas with central necrosis, consistent with tuberculosis. Ziehl-Neelsen staining confirmed the presence of acid-fast bacilli, establishing the diagnosis of duodenal pseudo-tumoral tuberculosis (Fig. 7).

The patient was started on standard antituberculosis therapy, consisting of isoniazid, rifampicin, pyrazinamide, and ethambutol. He tolerated the treatment well, and his symptoms gradually resolved over the following months. Follow-up imaging at 6 months showed no evidence of residual disease, and the patient remained asymptomatic.

Discussion

Digestive tuberculosis is relatively rare compared to pulmonary tuberculosis. In endemic countries, this form represents 5%-10% of all cases. It is often associated with pulmonary involvement, which is secondary to miliary tuberculosis in 15% of cases [4]. The frequency of digestive tuberculosis can increase twofold or threefold in HIV-positive individuals. The tubercle bacillus ingested in the stomach passes into the duodenum and small intestine, with the ileocecal region being particularly affected due to its abundance of lymphoid tissue [5-6].

Peritoneal involvement is the most common, especially among transplant patients living in poor hygienic conditions in Western countries [7]. It constitutes 34% of all tuberculosis cases and 75% of abdominal tuberculosis cases in Morocco [5-6]. The small intestine is the most commonly affected digestive organ (44%), followed by the cecum (35%) and the ileocecal region (16%) [5-9]. Isolated colonic involvement is rare, estimated to occur in 2%-9% of cases, with a predominance of right-sided colon involvement [6]. Other abdominal locations

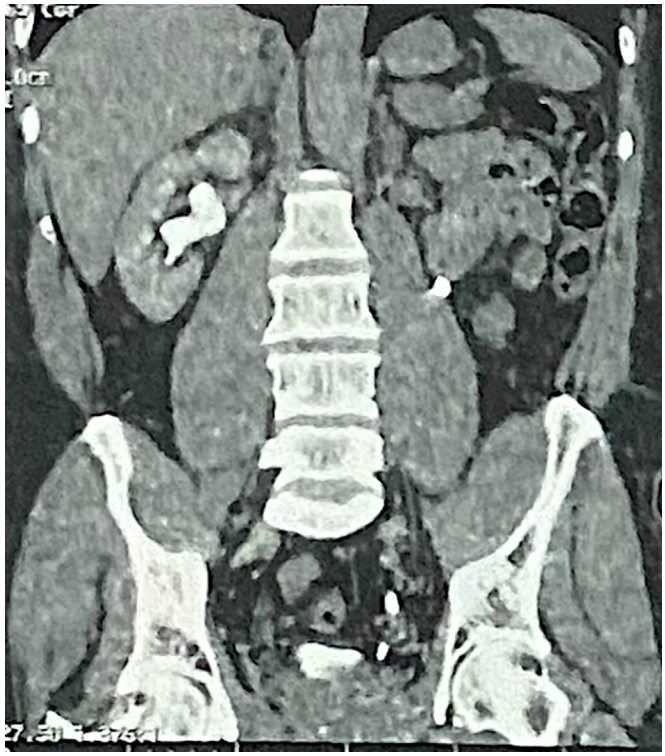

Fig. 2 – Coronal plane of a CT scan showing a right hydronephrosis secondary to a compression or invasion of the ureter by the tumor.

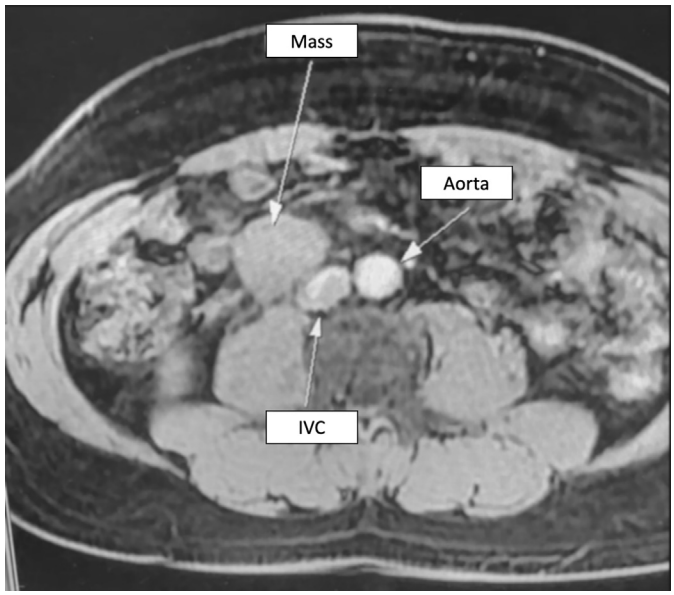

Fig. 3 – Sagittal plane of an MRI showing an adherent tumor to the inferior vena cava.

include lymph nodes, liver, spleen, pancreas, and ovaries, in descending order of frequency [5]. In our case, the tumor originated from the duodenum. Involvement of the knee joint is exceptionally rare and challenging to assess in our endemic setting.

The clinical presentation of tuberculosis pseudo-tumors often mimics other conditions, sometimes presenting with infectious symptoms such as fever, or simulating a tumor with varying degrees of general condition alteration, anorexia, and asthenia [9].

Our patient had received BCG vaccination, had no history of tuberculosis exposure, and no known risk factors. He was in good general condition and did not exhibit symptoms suggestive of tuberculosis, except for right renal colic

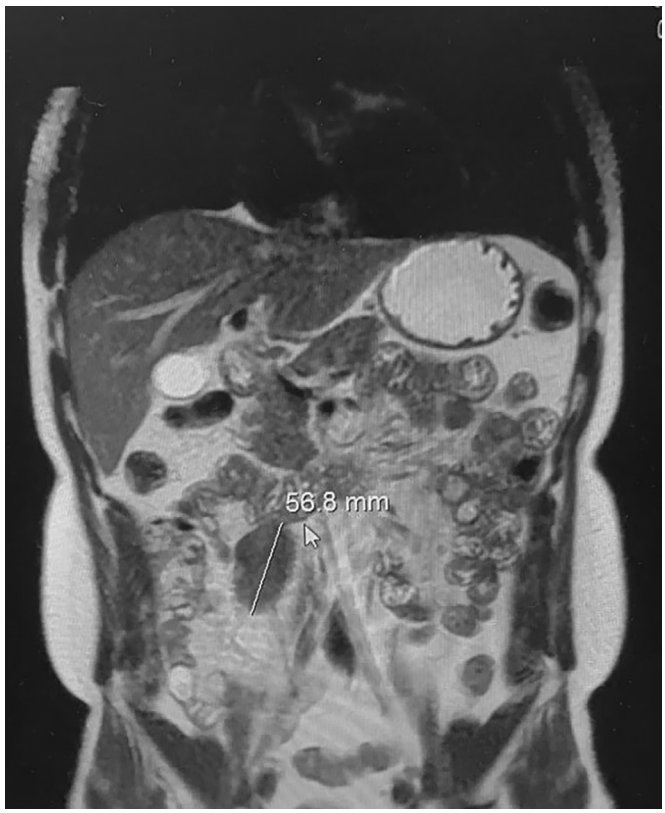

Fig. 4 – Coronal plane of an MRI showing the tumor measuring 56.8mm.

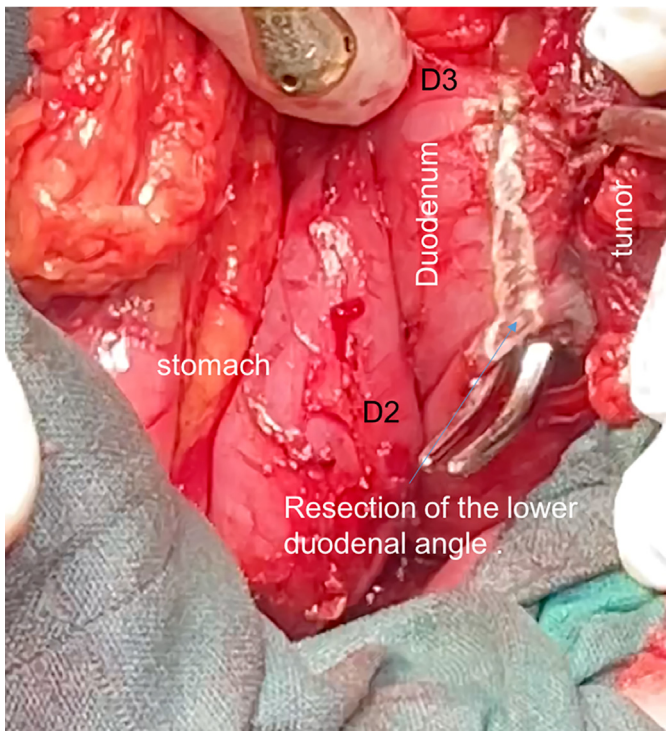

Fig. 5 – Surgical view of the partial resection of the duodenum.

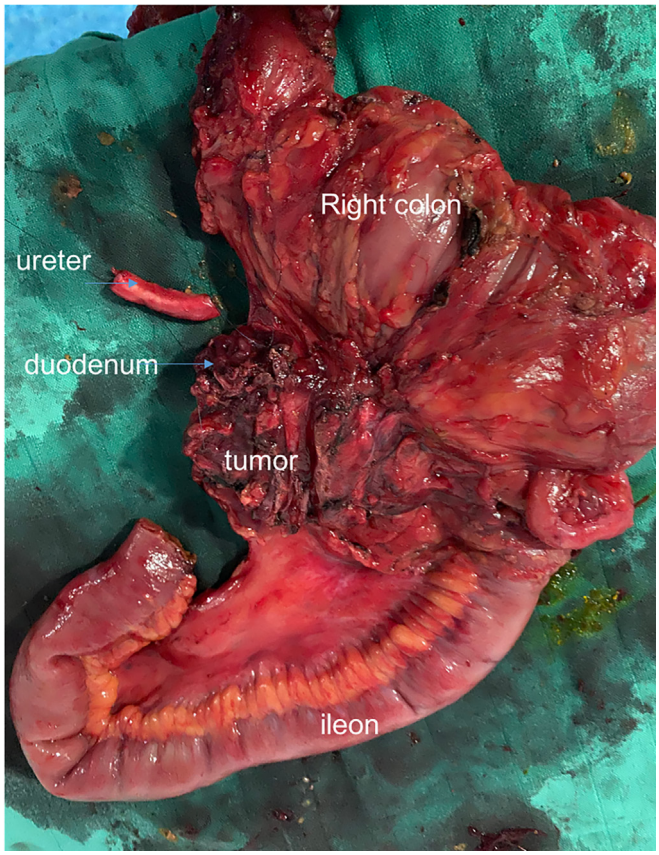

Fig. 6 – Operating piece of the partial resection of the duodenum with a right hemi-colectomy and partial resection of the lumbar ureter.

secondary to ureteral invasion. Laboratory findings in this pseudo-tumorous form of tuberculosis are nonspecific and typically show signs of variable intensity inflammatory syndrome [2].

CT scan is the preferred imaging modality for abdominal or retroperitoneal pseudo-tumors, often complemented by MRI. In our case, imaging revealed a tumor resembling a gastrointestinal stromal tumor (GIST) originating from the duodenal genu. There were no specific or pathognomonic features of abdominal pseudo-tumorous tuberculosis [11].

CT imaging also allows for the assessment of disease extension to the lungs, liver, peritoneum (ascites), and adjacent organs. In intestinal tuberculosis, CT may show thickening of the duodenal or ileocecal wall with luminal narrowing, sometimes associated with upstream dilation. Duodenal involvement predominates at the D1 level, often leading to pyloroduodenal stenosis, gastric dilatation, and large lymphadenopathy [12].

Lymph node involvement in intra-abdominal tuberculosis can mimic pseudo-tumorous forms. CT typically shows enlarged lymph nodes with homogeneous density, along with smaller, clustered lymph nodes, sometimes exhibiting peripheral enhancement with a necrotic, caseous, hypodense center [10-13].

Endoscopy is useful for biopsy in cases of ulcerated [14] or polypoid forms [15]. In our case, endoscopy revealed an exoluminal lesion involving the duodenal muscularis, making biopsy challenging due to the tumor's location between the inferior vena cava and dilated kidney. The biopsy was inconclusive, prompting exploratory laparotomy due to uncertainty arising from imaging findings suggestive of a retroperitoneal tumor.

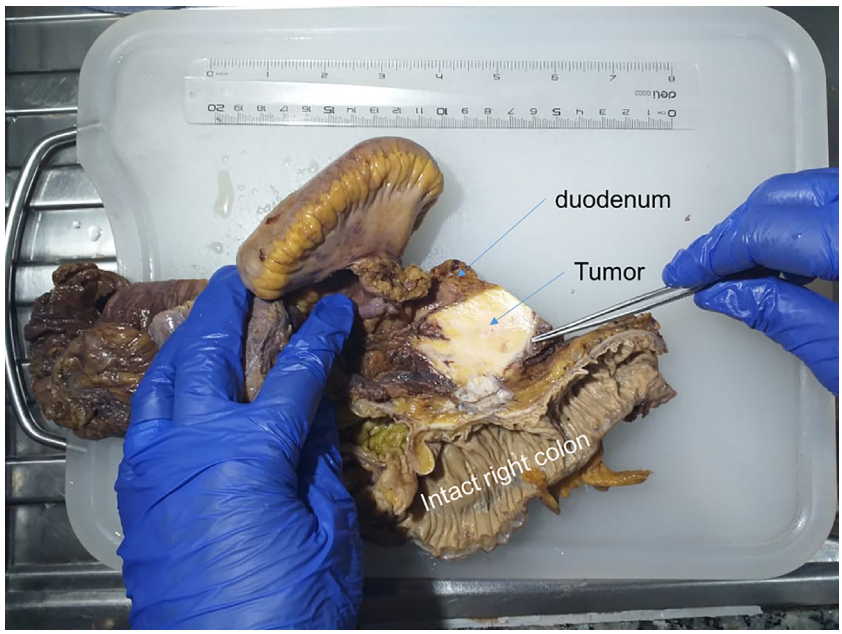

Fig. 7 – Macroscopic view of the pathology piece.

Conclusion

Pseudo-duodenal tumors in retroperitoneal locations, particularly at the D3-D4 level, pose diagnostic challenges. Their presentation often features a nonspecific, polymorphic symptomatology that can mimic malignant etiologies, leading to diagnostic uncertainty. While stenosis or hemorrhage may suggest the presence of these duodenal forms, in our case, the presentation simulated a gastrointestinal stromal tumor (GIST). Considering the diagnostic ambiguity, fine-needle aspiration biopsy under endoscopic ultrasound guidance, CT guidance, or laparoscopy should be considered to prevent unnecessary and potentially morbid surgical intervention.

This case underscores the importance of maintaining a high index of suspicion for tuberculosis in patients presenting with abdominal masses in endemic areas, and highlights the need for thorough diagnostic evaluation to guide appropriate management.

Patient consent

Written, informed consent of the patient was obtained for publication of this case report.

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