
Periduodenal Tuberculosis masquerading as Annular Pancreas

Authors: Ongeti K¹ BSc, MBChB, Msc (Anat), Pulei A¹ BSc, MBChB, Mandela P¹ MBChB, MMed, MPH, Kimpiatu P² MBChB, MMed. **Affiliations:** 1. School of Medicine, University of Nairobi, 2. PCEA Kikuyu hospital, Kikuyu. **Correspondence to** Dr. Kevin Ongeti, University of Nairobi. PO Box 30197 00100 Nairobi. E-mail: kongeti@aol.com.

Summary

Gastrointestinal tuberculosis is common in Africa. Nonetheless, isolated duodenal involvement is rare, and is more likely to mimic other causes of duodenal obstruction. We report a patient who succumbed to an isolated mid duodenal tuberculosis, diagnosed at laparotomy, whose clinical presentation, endoscopy and computerised tomography scans resembled annular pancreas. The limitations of clinical evaluation, endoscopy and radiology are highlighted as the importance of diagnostic laparoscopy is emphasized.

Introduction

Tuberculosis (TB) is a major health concern worldwide, to an endemic level in tropical countries. It primarily affects the pulmonary system. When involved, gastrointestinal (GI) tuberculosis is often secondary, localizing at the ileo-caecal region (1). Secondary duodenal tuberculosis is rare, with an incidence of 0.5 – 2.5% (2). Primary duodenal tuberculosis with duodenal obstruction is even rarer and can mimic the more common causes of duodenal obstruction (3, 4). Herein we report a patient with an isolated mid duodenal tuberculosis whose presentation, endoscopy and radiology results mimicked a symptomatic annular pancreas. The pitfalls of clinical evaluation, radiology and endoscopy in diagnosis are illustrated.

Case Report

A 25 year old male patient with complains of dyspepsia for 5 years presented at our hospital. He had severally been unsuccessfully treated for peptic ulcer disease. Symptoms worsened in the last four months with severe epigastric pains, abdominal distension, vomiting, constipation and anorexia. He was emaciated with mild epigastric deep tenderness, without any palpable mass or jaundice. He had an elevated erythrocyte sedimentation rate (100mm in the first hour), normal hemogram and renal functions. A barium meal was normal while esophagogastroduodenoscopy (OGD) showed extrinsic obstruction of the second part of the duodenum. The oesophageal, gastric and duodenal mucosa was normal. An abdominal Computerized Tomography (CT) scan showed a ring of pancreatic tissue that encircled the second part of the duodenum (Figure 1).

The diagnosis made at this point was annular pancreas. The patient was scheduled to undergo laparotomy to relieve the obstruction. At laparotomy matted lymph nodes on the head of the pancreas with fibrosis and nodules extending across the second part of the duodenum were found (Figure 2). The nodules were biopsied and separated. The rest of the pancreas was normal; there was no other noted pathology in the abdominal cavity. The biopsy showed tuberculous granuloma without pancreatic tissue. The patient was put on anti-tuberculosis medication. Unfortunately, he succumbed suddenly two days post operatively due pulmonary thromboembolism.

Discussion

With the advent of HIV/AIDS, TB has become a resurgent problem worldwide (5). The clinical manifestations of gastroduodenal TB are varied and often non-specific, mimicking the more common abdominal conditions and therefore difficult to diagnose (3, 4). Our patient had features of intestinal obstruction. Pain and vomiting are also symptoms of duodenal TB, fever and weight loss may occur as in our case and some patients may present with upper GI bleeding (6). In addition, a third of the patients present with a palpable epigastric mass (7). The presence of pulmonary TB alongside the above symptoms could guide the clinician make a diagnosis. However, the absence of pulmonary TB, like in our patient, complicates this diagnosis.

The radiological cues and endoscopy are often non-diagnostic as seen in our case (8). Barium contrast studies did not show any mucosal irregularity or displaced loops while the abdominal CT scan showed an extrinsic ring lesion

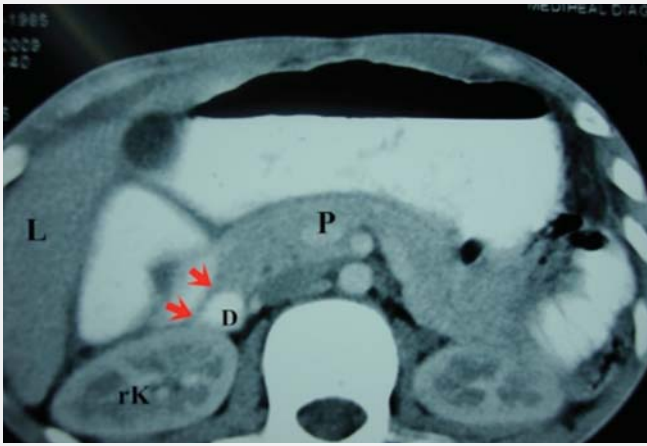
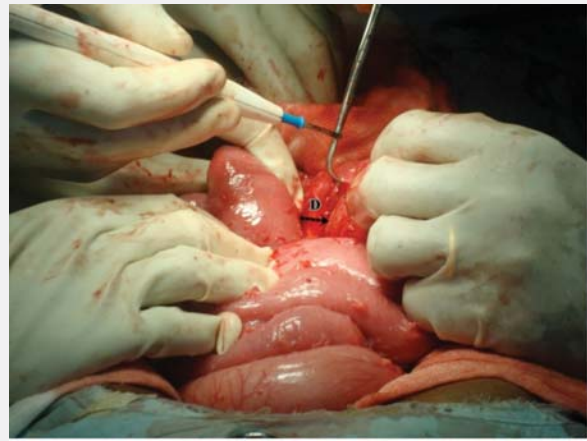


Figure 1: Abdominal CT scan with contrast

A CT scan slide showing sleeves of pancreatic tissue as indicated by the red arrows) encircling the second part of the duodenum (D). P is the pancreas, L is the liver and rK the right kidney.



Adhesiolysis (Arrow) was done to release the duodenal (D) obstruction.

suggestive of annular pancreas which in turn on exploration turned out to be duodenal TB not shown with fibrosis. Studies have suggested that dilated bowel loops, high density ascites, lymphadenopathy, strictures, deformed and pulled-up caecum, ulceration of ileum, bowel wall thickening shown on CT, and extrinsic compression by lymph nodes on barium studies are pathognomic of intestinal TB (9-11). These features can often be missed in isolated duodenal TB (8). Abdominal CT scan and ultrasound are non-specific for intestinal TB. Endoscopic ultrasound assessment and fine needle aspiration of the periduodenal mass or suspicious annular pancreas may also be helpful.

While laparotomy in this case was supposed to be therapeutic, it ended up being diagnostic. Nonetheless, laparotomy with biopsy or more preferably laparoscopy with biopsy is often needed to diagnose the disease (12). Apart from obstruction, the other complications of duodenal TB are gastrointestinal (GI) bleed, perforation and fistula formation with other parts of GI tract and even the kidney and aorta and obstructive jaundice (12). Considering the divergent diagnosis in our patient, annular pancreas in adults is very rare and is often only detected after developing complications (13). Fibrosed periduodenal TB lymphadenopathy obstructing the second part of the duodenum can therefore mimic an annular pancreas on clinical evaluation, endoscopy and abdominal CT scan.

In conclusion, it is important that the clinicians be wary of abdominal tuberculosis which can mimic annular pancreas and other common obstructing conditions. Endoscopy and radiology may not benefit the clinician in diagnosing duodenal tuberculosis.

References

1. Paustian FF, Marshall JB. Intestinal tuberculosis. In Berk EJ, Haubrich WS, Kaiser MH.eds. Gastroenterology. Philadelphia: W13 Saunders. 1985; 3: 2018-36.
2. Rao YG, Pande GK, Sahni P, et al. Gastroduodenal tuberculosis management guidelines, based on a large experience and a review of the literature. Can J Surg. 2004; 47: 364-368.
3. Chavhan GE, Ramakantan R. Duodenal tuberculosis: radiological features on barium studies and their clinical correlation in 28 cases. J Postgrad Med. 2003; 49: 214-217.
4. Lamberty G, Pappalardo E, Dresse D, et al. Primary duodenal tuberculosis: a case report. Acta Chir Belg. 2008; 108: 590-591.
5. Tan KK, Chen K and Sim R. The Spectrum of Abdominal Tuberculosis in a Developed Country: A Single Institution's Experience Over 7 Years. J of Gastrointest surg. 2009; 14: 142-147.
6. Misra D, Rai RR, Nandy S. Duodenal tuberculosis presenting as bleeding peptic ulcer. Ant J Gastroenterol. 1988, 83: 203-4.
7. Gleason T, Prinz RA, Kirsch EP. Tuberculosis of the duodenum. Am J Gastroenterol. 1979; 72: 36-40.
8. Batikian JP, Yenikamashian SM, Jidejan YD. Tuberculosis of the pyloroduodenal area. AJR. 1967; 101: 414-20.
9. Kapoor VK, Chattopadhyay TK, Sharma LK. Radiology of abdominal tuberculosis. Australas Radiol. 1988; 32: 365-7
10. Hulnick DH, Megibow AJ, Naidich DP. Abdominal tuberculosis: CT evaluation. Radiology. 1985; 157: 199- 204.
11. Bankier AA, Fleischmann D, Weismayr MN. Update: Abdominal tuberculosis - unusual findings on CT. Clinical Radiology. 1995; 50: 223-8.
12. Gupta SK, Jain K, Gupta AP. Duodenal tuberculosis. Clin Radiol 1988: 159-6
13. Sandrasegaran K, Patel A, Fogel EL, et al. Annular pancreas in adults. AJR Am J Roentgenol. 2009; 193: 455-60.