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# PRIMARY TUBERCULAR APPENDICITIS – A RARE CASE.

General Surgery

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## ABSTRACT

**Introduction-** Tuberculosis of appendix is clinical rarity among extrapulmonary tuberculosis and has similar presentation as acute appendicitis. **Case Report-** a 28 year old male with Rt iliac fossa pain and Modified Alvarado score of 8 was taken up for Open appendectomy in emergency. Histo- pathological findings were suggestive of Tubercular appendectomy. **Discussion-** Very few cases of appendicular tuberculosis have been previously Reported in literature. The diagnosis is one which can only be confirmed on histopatholgy. **Conclusion**- primary tubercular appendicitis is difficult to diagnose clinically and with USG findings alone. Once the diagnosis is made with histopathology, patient should be started on ATT for a full course.

## KEYWORDS

Acid Fast Bacilli(AFB), Antitubercular Treatment(ATT), Tuberculosis (TB),Ultrasonography(USG),Ziehlneelsen Stain(ZN Stain).

## INTRODUCTION –

Despite NTEP being in effect in India since 1997, TB is still major burden on medical fraternity. Extrapulmonary presentation of tuberculosis to gastrointestinal tract is uncommon and occurs only in about 3% cases[1], ileocecal being the most common among gastrointestinal tuberculosis. Involvement of appendix is rare and only seen in 1% of all cases [1] Tubercular appendicitis presenting with signs & symptoms of acute appendicitis is even rarer occurrence.

Autopsy figures among patient of tb revealed appendicular involvement in approximately 30% cases only[2]. A few authors have reported up to 46-70% involvement of appendix in intestinal tb patient.[3]

The exact mode of involvement of appendix in tb is not exactly known, but possible ways can be: -

1. Hematogenous
2. Lymphatic
3. Extension from neighboring ileocecal or genital tb[2]
4. Ingestion of infected food[4]

Despite ileocecal junction being most common site of intestinal tb, its frequency of involving appendix is relatively low because of minimal contact between luminal mucosa of appendix and intestinal content.[2]Appendicular tb is divided in primary and secondary based on presence or absence of tubercular focus elsewhere in body[4].Thereare very few cases of primary tuberculous appendicitis reported, where there is no detectable focus of infection anywhere else in body. Only 173 cases had been reported in past 107 years i.e.. From 1909 to 2016 as per PubMed and google scholar literature review report[5]. Mode of infection of such cases is ingestion of contaminated food.[2]

Tuberculosis of appendix is not associated with any specific clinical or pre-operative features and diagnosis is found only on histo pathological examination of appendectomy specimen.[4]

For diagnostic purposes mycobacterium culture is gold standard, but its time consuming.[4] Hence, ELISpot (enzyme linked immunospot assay) & PCR assay (Xpert MTP/ RIF) are ideal, rapid, noninvasive tests used commonly nowadays.[5]

## Case Report -

A 28 years old male presented to surgery emergency department with complaint of acute abdominal pain in right iliac region over a duration of last 2 days which was started as pain in umbilicus and gradually migrated to right iliac fossa. Pain was associated with vomiting that was non-bilious in nature. Patient had no complaints of fever, diarrhoea & burning micturition.

**General examination –**

Karnofsky performance status[6]was 90 No Pallor, Icterus, Cyanosis, Clubbing, Lymphadenopathy, Oedema was present

**On systemic examination;**

The Per abdominal examination revealed non distended abdomen, with guarding and tenderness at Mcburney's point. A vague lump was felt on palpation in right iliac fossa, Rebound tenderness could also be elicited. Rovsing's sign[7]was positive.

Digital rectal examination was essentially normal. The temp was 98.1°F, pulse rate was 81 beats per minute and bp was 136/ 98mmHgrecorded in right arm in supine position.

CNS, CVS, Respiratory system were essentially normal Modified Alvarado scoring[8] was – 8/10

**Routine haematological reports** showed elevated total leucocytes count of**19,000/mm3**pre operatively and came to **17000/mm3** on post op day 1 – and 10,600 at time of discharge.

**Urine reports** were within normal limits.

**Biochemistry reports** showed LFT, KFT values within normal limits. HIV, HBsAg and HCV antibody test were nonreactive.

**Mantoux** test was negative.

**Chest Xray P/A view**– B/L lung fields were clear. There were no signs s/o pulmonary TB

An **Ultrasound** of abdomen demonstrated appendicular phlegmon (maximum thickness 14.5mm) in RIF region, a well-defined hypoechoic collection measuring 10x6.1x6.9 cm (229cc) was noted in pelvic cavity with thick separations and echogenic content.

**Xrayabdomen showed –** dilated gas filled bowel loops(fig 1)

Patient was taken up for open appendectomy in view of above findings in emergency OT hospitalization day 0.

**Procedure** done was- Appendectomy with adhesiolysis. Patient was given a Grid Iron incision and the following findings were noted-

**Intra-Operatively(fig 2,3)**: there were-
- Widespread adhesions in right lower quadrant
- Thick appendix with omentum wrapped around mid-part of appendix
- Base of appendix was normal
- Localised pelvic collection with thick yellow pus in pelvis
- A open appendectomy with adhesiolysis was eventually done taking in consideration the intraoperative findings.

Post-op stay of patient was uneventful and he was discharged on POD 3. Patient was followed up onPOD 7 and 14 and his post operative period was uneventful.

**Histopathologically -** report showed;

Sections having marked oedematous expansion of submucosa with walls showing increased inflammatory infiltrate.

There was also presence of florid reactive lymphoid aggregates. (fig 4) Areas of peri-appendicitis with microabsescess (fig 5) formation was noted.

Few ill formed **granulomas** with **caseation** also noted. (fig 6) Specimen was negative for AFB

A diagnosis of TB was confirmed by histopathologic examination.

ATT was started in immediate post operative period after receiving conformation of diagnosis of tuberculosis and patient is expected to come for follow after 2 months.

## DISCUSSION

Appendicular TB is less known entity due to less incidence and less reported in literature. Appendix is fifth most common site of tuberculosis, most common being ileum and caecum[5]

The presence of chronic abdominal pain for long duration in young adults, pulmonary tuberculosis, poor nutritional status and weight loss is indicative of tuberculosis of appendix but there symptoms are doubtful, especially in India, where TB and amoebiasis are common[2]

Primary form of TB includes infection of mucosa directly by mycobacterium tuberculosis, secondary involves spread of infection from existing infective foci. The appendix is less affected due to minimal contact with mucosa with intestinal contents. However it may spread via local extension from ileocecal region.

As is seen in reported case, patient presented with acute abdominal pain in RIF which is the most common clinical presentation of appendicitis according to studies[9].

Appendicular TB is believed to be more commonly present in chronic form with acute flare up of appendicitis secondary to tuberculosis. It commonly presents with mild to moderate abdominal pain.[10]

The nature of pain was radiating from umbilicus to RIF and was also associated with vomitingin our patient. This findings were consistent with the literature about tubercular appendicitis.[9]

Maharajan et al reported that signs and symptoms of patient with Tubercular appendicitis were consistent with acute appendicitis, hence making final diagnosis was difficult without histological reports.[10]

Xray findings showed dilated gas filled bowel loops, which is not usually reported in similar cases.

In our case intraoperatively, we foundwidespread adhesions in right lower quadrant, thick appendix(14.5 mm at base) with omentum wrapped around mid-part of appendix, localised pelvic collection with thick yellow pus in pelvis, another case study showed presence of mesenteric nodes, ascites and pelvic fluid intraoperatively unlike our case findings.[10]

Our case also had a negative ZN stain. ZN stain is the test to confirm the acid fast bacilli but is less sensitive and can give false negative reports.[5] There are no pathognomic signs and symptoms to prompt preoperatively diagnose tubercular appendicitis.[10]

Pre-operative diagnosis does not alter the management of these patients as treatment in patients presenting with signs and symptoms remains appendectomy[2]

Diagnosis is made postoperatively after appendectomy, and is confirmed by histopathological reports. Hence, anti-tubercular drug therapy must be given in post operative period if pathology shows tuberculosis.[2]

## CONCLUSION

Tuberculous appendicitis is difficult to diagnose on USG and clinical findings alone. Tuberculous appendicitis cannot be diagnosed prior to histological evaluation and as soon as the diagnosis is made, patient should be given ATT for a full course.

**Fig 1 Dilated gas filled bowel loops**

**Fig 2 Thick walled appendix with widespread adhesions**

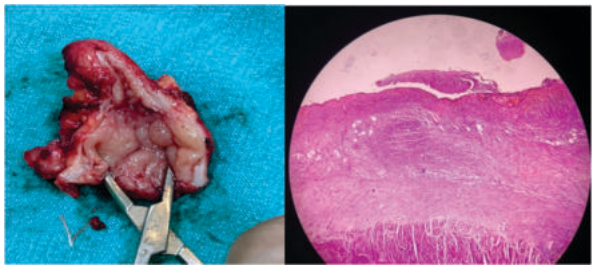

**Fig 3 Inflamed and thick walled appendix** **Fig 4 Reactive Lymphoid Aggregates**

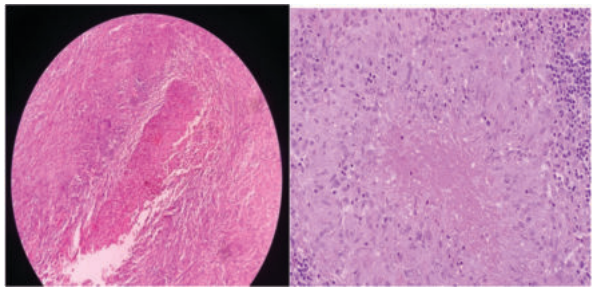

**Fig 5Micro abscesses** **Fig 6 Granulomas with caseation**

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