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BEYOND THE ORDINARY – ATYPICAL MYCOBACTERIUM IN APPENDICULAR ABSCESS

Abstract- Appendicitis is most commonly associated with blockage of the appendiceal lumen due to feco liths, lymphoid hyperplasia, or infection. Diagnostically and therapeutically, atypical mycobacterial infections—more frequently recognized as non-tuberculous mycobacteria (NTM) mycobacterial infections—rarely pose difficulties by causing appendicitis. Such environments include soil and water where organisms like *Mycobacterium avium* complex (MAC) and *Mycobacterium fortuitum* are found which can infect an immunocompromised host or, on rare occasions, an otherwise healthy person.

NTM appendicitis is infrequently encountered and may present like classical acute appendicitis with right lower quadrant pain, fever, and high inflammatory markers. Granulomatous inflammation with acid-fast bacilli often goes unnoticed until histopathological examination integrates these findings. For me as a medical trainee, this case underscores the need to rule out rare causes of appendicitis in patients with unusual presentation or those who are immunosuppressed. Appendectomy remains the treatment of choice in these patients; however, after confirming an Non-Tuberculous Mycobacterial infection, tailored therapy is warranted to avoid recurrence or systemic dissemination of the disease.

Maintaining the differential diagnosis wide open permits us to note that although uncommon atypical mycobacteria it is important to highlight that every step needs be taken for proper diagnosis and management because no other need exists alongside histology and microbiology emphasis on precision seeking diagnosis without fail.

Key words-Appendicitis, Appendix, Tuberculosis, Mycobacterium, NTM

INTRODUCTION :

Tuberculous appendicitis is a rare extrapulmonary manifestation of tuberculosis without clear summarization or consensus on its management. Its a rare clinical entity, with a reported incidence of 1.5–3.0% among patients with tuberculosis.^[1]

Tuberculous appendicitis was first described by Corbin in 1873 and has seen little change in its incidence since that time. The challenge presented by this disease lies in its prompt identification and diagnosis.

Patients present identically to patients with non-tuberculous cases of appendicitis, with the final diagnosis of tuberculous appendicitis only made upon report of histologic findings.

It can occur as a primary or secondary infection. Commonly it is associated with ileo-caecal or peritoneal disease. The disease can be acute, chronic or latent type. Laboratory findings of tuberculous appendicitis are non-specific.^[2]

CASE STUDY

Here is a male patient aged 39 years who presented to the hospital with complaints of Pain Abdomen since 3 days.

On Examination, patient was afebrile and his vitals stable.

Per Abdomen: Soft, Tenderness present in Right Iliac Fossa with no evidence of Guarding or Rigidity
Bowel sounds were present

Sonological Findings:

Ultrasound Abdomen: Features suggestive of Acute Appendicitis

Laboratory Tests:

- Hb: 10.7g%
- TLC: 16,700 cells/mm³
- Neutrophils: 60%
- Lymphocytes: 40%
- ESR: 120mm/hr

Patient was then taken up for Open Appendicectomy under Spinal Anaesthesia. Intra-operatively, retrocecal pus was noted with inflamed appendix. Appendicectomy was performed and pus was sent for Culture and sensitivity which revealed ZN staining positive. Further testing with CBNAAT revealed the absence of Mycobacteria and further testing revealed the presence of Atypical mycobacterium. Patient was then started on Anti-Tubercular treatment in accordance with NTEP guidelines and has been asymptomatic ever since.



Fig. 1: Appendix Specimen



Fig.2: Intra-op Finding of retro-cecal pus

DISCUSSION

The pathophysiology of appendiceal tuberculosis is complex and relatively uncertain.

Logic would dictate that primary inoculation from swallowing of the expectorated phlegm of pulmonary TB is identifiable risk factor for developing tuberculous appendicitis.

Because of the lack of capability for pre-operative diagnosis, prompt identification is dependent upon a high index of suspicion, considering patient demographics, as well as history and presenting symptoms.

Radiologic and laboratory results will support clinical suspicion.

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NTEP Request Form for Examination of Biological Specimen for TB

CBNAAT / TRUNAAT

Patient Name: Kantiah Age: 39 Gender: M

Date: 1/6/24 Lab No. 1273/24 Nikahay No. 75617309

SPUTUM: OFFIERS: PLU

Sample	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B
M.Tuberculosis	<input type="checkbox"/> Detected	<input checked="" type="checkbox"/> NOT Detected
Rif Resistance	<input type="checkbox"/> Detected	<input checked="" type="checkbox"/> Not Detected
Test	<input type="checkbox"/> No Result <input type="checkbox"/> Invalid	<input type="checkbox"/> Error-Error Code

Date Tested: 3/6/24 Date Reported: 3/6/24 Reported By: Jayash

Laboratory Name: G.H. Putter (Name & Signature)

Fig.3: Lab report of M.TB testing

CONCLUSIONS

We do not yet possess the means to definitively identify appendiceal tuberculosis in patients pre-operatively.

Intraoperatively, approximately a quarter of patients will have tubercles or studding noted either on the appendix, mesentery, or peritoneum.

A high index of suspicion can be generated with these data points, but we do not yet possess the means to diagnose tuberculous appendicitis prior to histologic examination.

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