

Abdominal Tuberculosis Changing Trends.

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Abstract

Tuberculosis is a common pathological entity which is seen in various forms in surgical practice. Abdominal Tuberculosis is one the commonest form of its presentation to any surgeon in outpatient department. There has been a lot of changes that has been observed in the presentation of patients suffering from it and management options for it over a period of time. Here, I have tried to review this common entity with current management angles which has changed the understanding of this pathology.

Key words : Abdominal, Tuberculosis, Changing

History

Tuberculosis (TB) was known in ancient India as '*Kshay Roga*', a disease which leads to slow weakening of the individual who is suffering from it. Its presentation in form of loss of appetite and hence weight of the patient plus cough with expectoration associated with fever has been clearly mentioned in Charak Samhita plus in Vedas which are the ancient most Indian scriptures which date back to almost 5000 BC. There were few remedial measures suggested by then Doctors in form of eating healthy, nutritious diet and sometimes isolation when patient is coughing a lot. There were no medicines available at that time and hence, patient used to succumb to it eventually. This description is so similar to our modern era management options which we usually undertake now.

In modern era, TB was recognized as early as the Fourth century BC and was known as phthisis, lupus, scrofula, or Pott's disease, until the identity was established by Robert Koch in 1882. Hippocrates stated that 'phthisical persons die if diarrhoea sets in and it is a mortal symptom'; the severity of intestinal TB was known even at that time. Robert Koch was considered as father of modern TB treatment who knew exactly the magnitude of this disease and ranked it above Asian bubonic plague.

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Epidemiology

Intestinal TB has been found in 6 to 90 % of patients with pulmonary TB.

Intestinal infection is more prevalent in populations from lower socioeconomic strata, contributing factors being poor hygiene, crowded living conditions and poor nutrition. The incidence is higher in those with caseo-pneumonic and late disease than in those with fibrotic lesions or early disease. There is a sharp contrast in the incidence of intestinal TB between the West and India. 15 of 4222 patients admitted to the University of Michigan for TB had intestinal TB over a 22-year period, compared to 300 cases over 14 years in one Indian series, and 557 cases over 12 years in another series.

Introduction

Tuberculosis (TB) is a common surgical entity that presents in various forms. It is a commoner form of acute abdomen that reaches OPD. Females predominate over males. Common age group observed is between 20 to 45 years. TB also presents with chronic form with recurrent pain in abdomen. It mainly affects lower socio-economic class. Poor nutrition plays an integral role in development of abdominal TB. 'Hygiene' also plays an important role in abdominal TB. Immuno-suppression forms crucial role in abdominal TB. Peritoneum is most commonly affected.

Aetio-pathogenesis

Ingestion of Milk or infected food swallowing of sputum in active PTB. Haematogenous spread from active PTB lesion mainly Miliary TB. Spread from contiguous organs like Fallopian tubes or mesenteric lymph node. Very rarely as

complication of Peritoneal Dialysis.

Classification

It can be classified as per one of the types, first being Peritoneal Vs Extra-Peritoneal.

This can be sub divided as below:

Peritoneal TB

It can be sub-classified as below:

1) Intestinal

- a) Ulcerative
- b) Hyperplastic

2) Extra- Intestinal

- a) Lymphatic (Mesenteric nodes)
- b) Only peritoneal (involving parietal &/or visceral peritoneal surface)

Extra (Retro) Peritoneal TB

It can be classified as below:

1) Genito-Urinary TB

- a) Upper urinary tract
[kidney, PUJ & Upper 2/3rd ureter]
- b) Lower urinary tract
[lower 1/3rd ureter, bladder & urethra]

2) Lymphatic TB

Isolated retroperitoneal lymph-adenopathy is uncommon.

Second type is can be detailed one as below:

- a) **Gastro-intestinal**
- b) **Peritoneal**
 - **TB peritonitis presents in 2 forms:**
 - 1) Acute &
 - 2) Chronic
 - **4 Varieties of TB peritonitis:**
 - 1) Ascitic form
 - 2) Encysted [Loculated] form
 - 3) Fibrous [Plastic/Cocoon] form
 - 4) Purulent form
- c) **TB of Mesentery**
- d) **TB of solid organs:** e.g. Liver, Spleen.
- e) **Miscellaneous:** e.g. Retroperitoneal.

Acute Abdominal Tuberculosis (AAT)

Patient presents with acute abdomen. Pain, vomiting, abdominal distension & constipation &/or obstipation. Emergency laparotomy is needed in patients. There are tubercles scattered all over abdominal cavity. Transudative

straw colored fluid is evacuated & sample is sent for ADA levels & Routine/Microscopy, Culture and Sensitivity.

Chronic Abdominal Tuberculosis (CAT)

Common symptoms are as below:

- 1) Abdominal Pain (90%)
- 2) Low Grade Fever (60%)
- 3) Loss of Weight (60%)
- 4) Ascites (60%)
- 5) Night Sweats (37%)
- 6) Abdominal Mass (26%)

Origin

TB mesenteric lymph nodes;

TB ileo-caecal junction;

TB pyosalpinx;

Blood borne infection from pulmonary TB (Common is 'Miliary' but occasionally 'Cavitating');

Four (4) common varieties are observed as described already.

Ascetic Form

Patient has loss of weight and is lethargic. Classically, patient presents with abdominal distension.

There may be altered bowel habits. Signs of ascites can be elicited. Sometimes palpable lump is appreciated which is actually rolled up greater omentum. The peritoneum is studded with tubercles. Peritoneal cavity is filled with pale, straw colored fluid.

Laparoscopy is a useful diagnostic modality. Areas of caseation is biopsied for histopathology study. In fluid M. tuberculosis can be detected in culture. Important is to rule of TB focus anywhere else. In females TB salpingitis is noted. Treatment is standard ATT.



Encysted Form

Encysted Form is also called as loculated form. Here only one part of abdominal cavity is involved. In females, pelvic pathology is suspected & patient is treated. In child, one should rule out mesenteric cyst.

Abdomen is explored & biopsy is taken. ATT is given. Rarely, patient undergoes intestinal obstruction.

Fibrous Form

Fibrous Form is also called as plastic or cocoon form. Patient typically presents with abdominal distension & pain and features of sub-acute intestinal obstruction. On exploration, there are matted intestinal loops observed which are covered with omentum forming a big cocoon. It is better not to violate such cocoon as it is body's protective mechanism to limit the disease.



Fluid is taken for bacteriological testing. After histopathological confirmation ATT is started.

Usually, patient responds well. Good nutrition is must. Good follow-up is needed. Prognosis is good.

Purulent Form

Purulent Form is a rarer variety. Usually, secondary to TB salpingitis. Many times a cold abscess is formed.

If fecal fistula is formed it has to be handled very methodically. Again ATT is given. Good nutrition is must. Prognosis is poor.

Rarer Variety

- Calcified post primary reactivated TB.
- Appendicular TB.
- Perforative TB.
- Splenic /Pancreatic TB.
- Renal TB.
- Urinary bladder TB (Thimble bladder).

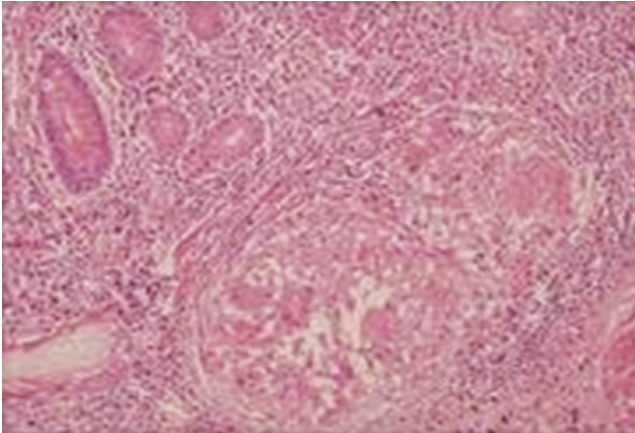


- Prostatic TB.
- Port site TB (Atypical form) – 'Newer'

Investigations

- Complete Hemogram
- E.S.R.
- Urine R & M
- B.U.N. & Creatinine
- Blood sugar fasting & post prandial.
- Complete L.F.T.
- Adenosine deaminase [ADA] levels.
- Ascitic fluid biochemical analysis.
- Fluid DNA PCR is very useful.
- Radiological
 - 1) X-ray chest PA view
 - 2) USG abdomen & pelvis
 - 3) Special contrast [Barium] studies
 - 4) CT scan Abdomen + pelvis [Plain+contrast]
 - 5) MRI for retroperitoneal & soft tissue pathology
- Endoscopy
 - 1) OGD scopy
 - 2) Colonoscopy
- Laparoscopy vs laparotomy
 - 1) It has diagnostic as well as therapeutic advantage.
 - 2) Disease confirmation.
 - 3) Lymph node biopsy.
 - 4) Fluid can be taken for cytology & ADA levels.
 - 5) Biopsy of suspicious lesions.
- Histopathology following features are usually detected
 - 1) Demonstration of acid fast bacilli
 - 2) Central caseating necrosis.
 - 3) Lymphoid hyperplasia.
 - 4) Presence of epithelioid cells.
 - 5) Presence of Langhan's giant cells.

- 6) Hyperplastic germinal centre.
- 7) Cellular infiltrate.



Microscopy showing Langhan's Giant cells and granuloma formations

- Culture study
- The culture medium used is a liquid medium with radiometric growth detection [BACTEC-460].
- The standard process time required is up to 6 weeks.
- Lowenstein Jenson medium is also a preferred medium for growth of acid fast bacilli.

Co-morbid Conditions

- 1) Diabetes mellitus
- 2) Hypertension
- 3) Bronchial asthma
- 4) Jaundice
- 5) Pelvic inflammatory disease
- 6) Ca colon
- 7) A.I.D.S.

Co-existing conditions are also important to rule out like:

- 1) Pulmonary TB
- 2) Cervical lymph node TB
- 3) Genito-urinary TB
- 4) Skin TB
- 5) Adnaeal TB
- 6) Ulcerative colitis
- 7) Crohn's disease

Treatment Options

Conservatively, as WHO has classified abdominal TB as category I disease, Standard 4 drug chemotherapy is offered but the time of treatment will vary for specific cases. For lymphatic one year AKT is advocated. For G. I. TB 9 months to one year AKT is given. (RNTCP- CAT 1 – Phase 3 Regimens). Role of corticosteroids is controversial. E.S.R. monitoring of Weight of patient, Complete L.F.T. (To detect early hepatitis), X-ray chest PA view. (For concomitant pulmonary infection), USG abdomen for measuring decrease in size of lymph nodes.

Care of patient to be taken as below:

- 1) Nutrition (High protein diet);
- 2) Adequate Hydration;
- 3) Drug scheduling & dosage;
- 4) Hygiene;
- 5) Discipline in taking AKT;
- 6) Early detection of 'Complications';
- 7) Data recording;
- 8) Meticulous follow up;
- 9) Psychological support

Surgically, various other options are available as below:

- 1) Simple Adhesiolysis.
- 2) Intestinal decompression.
- 3) Strictureplasty (Single or Multiple).
- 4) End to end resection anastomosis.
- 5) Ileo-colonic resection anastomosis (Quarter Colectomy).
- 6) Right hemicolectomy if involving hepatic flexure.

Conclusion

To summarize, complete history & physical examination. Early & correct clinical diagnosis is must. The surgeon must order only specific diagnostic investigations to be asked for and not just the battery of investigations. Completion of ATT meticulously is the most crucial point. Correct & timely surgical intervention is highly important. Good follow up. Good nutrition throughout. No role for '**Blind AKT**'. Tissue Diagnosis is must in RNTCP Protocols. 'DOT therapy' is given in many urban & rural set ups. 'Standardization' is yet to be incorporated in '**Private Sector**' to prevent drug resistance. Scenario is guarded in '**MDR & XDR TB**'. Prospective ICMR RC Trials are ongoing. Trend is now getting '**Liquid Biopsy**'. Prevention is better than cure.

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