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PATTERN AND PRESENTATION OF ABDOMINAL TUBERCULOSIS IN PORT SUDAN TEACHING HOSPITAL

Dr. Murwan Mohamed Saeed

Consultant Pulmonologist, Assistant Professor, Red Sea university

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Abstract

Tuberculosis is a multisystemic, infectious, necrotizing, granulomatous disease, caused by mycobacterium bacilli, mainly mycobacterium tuberculosis, it represent a common community problem in Red sea state - eastern Sudan. The disease mainly affect the lung, but any tissue can be involved. The incidence of extra-pulmonary tuberculosis in Red sea state – Sudan increased in last years and abdominal Tuberculosis represent the commonest pattern of extra-pulmonary tuberculosis in Red sea state, it represent a real problem in this area. So this descriptive, interventional study done in port Sudan teaching hospital from February 2014 to June 2015 to know the pattern and presentation of abdominal tuberculosis, making local guide for diagnosis to minimize both under or over diagnosis. Thirty eight patient were enrolled in this study 57% male and 43 % female. Presenting symptom were abdominal pain in 57%, fever 50% , wt loss 43% , abdominal distention 21 %, diarrhea 7 %, vomiting 7%, half of patient showed respiratory symptom and just 14 % had past history of pulmonary tuberculosis.

Leucopenia appear in 36% of patient and leucocytosis in 36%. Features of anaemia appear in 64% : 46% of them are normocytic normochromic anaemia while feature of iron deficiency anaemia appear in 18%, thrombocytosis 43% and thrombocytopenia 21%. Serum albumin low in 93% and liver enzyme normal in all patients.

Mantoux test was positive in 57%, and negative in 43%. Abdominal U/S showed ascites in 36%, enlarged paraortic and mesenteric lymph nod in 29%, hepatospleenomegaly 14%, ileocecal mass 7%, peritoneal adhesion 7%, and psoas abscess 7%. Ascites was exudative in 93% of patients and transudative in 7%. CXR showed features of old PTB in 43% of patients. The pattern of TB presentation were ascites 36%, tabes mesentrica 29%, hepatosplenomegally 14%, intestinal obstruction 14%, and psoas abscess 7%.

Introduction

Tuberculosis is an old disease return to 3700 BC as the tubercuolus lesion were seen in Europe and Egyptian mummies (1). This is the most common communicable disease in the world, that caused by mycobacterium bacilli mainly mycobacterium tuberculosis, mycobacterium bovine occurs in some countries (milk born disease), and result in abdominal TB (2). Tuberculosis is a systemic necrotizing granulomatous disease, that affecting any organ, but the lung is commonest (pulmonary tuberculosis). The primary lesion usually in the lung and then spread to other site, but extrapulmonary sites may be the site of primary lesion specially tonsils, larynx, and gastrointestinal tract, the organism reach these sites through ingestion of bacilli mainly with milk, as in this area of Sudan people use raw milk that distributed in container (girba) that open by blowing, while the pulmonary system involved mainly through inhalation of bacilli. Secondary spread through reactivation or haematogenous spread may be responsible for pulmonary or extrapulmonary infection respectively. Several risk factors such as poverty, immunosupression, malnutrition contributing in developing tuberculosis disease rather than latent tuberculosis.

The incidence of tuberculosis was steadily decline from 1953 to 1985 (fish769), then start to increase due to increase of immunosupression condition mainly HIV. In Sudan the annual rate of tuberculosis is 1.8 and the target detection rate is 84 case for each 100000 of population (3), in Red sea state – Sudan 1389 cases were detected in

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2014 : 660 (47.5%) of them were extra pulmonary, In 2015 detected cases were 1269: 661 (52%) were extra pulmonary (4) and this is large number exceeding the predictable cases by tuberculosis control program as it suspect that extrapulmonary tuberculosis represent 25% of detected cases, this large number despite limitation diagnostic tool in this area need extra investigation to reach causes.

The symptoms of extrapulmonary tuberculosis mimicking that of several disease, abdominal tuberculosis which is the second pattern of EPTB after superficial tuberculous lymphadenitis (1) may presented with symptoms that mimicking inflammatory bowel disease or lymphoma there for diagnosis of abdominal tuberculosis is very difficult and may be reached after laprarotomy even in well established diagnostic setup, in Red sea state - Sudan there is lack of diagnostic facilities and so diagnosis of abdominal tuberculosis usually delays, and it is over diagnosis in some pattern mainly tuberculous ascites, or mesenteric lymphadenitis, or even underdiagnosis because of this constrained facilities, in other side over diagnosis delay the diagnosis of other serious disease such as lymphoma, so there is a real need for diagnostic policy that overcome these problems. Treatment of abdominal tuberculosis according to direct observed therapeutic strategy (DOTS), using fixed dose that contain refampicin, pyrazinamide, ethambutole, and isoniazide extensive phase for two month, followed by fixed dose of rifampicin, and isoniazide continuation phase for four month as recommended by WHO (5).

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Objectives

This study done to know the pattern and presentation of abdominal tuberculosis in Red sea state – Sudan, as it represent common medical problem in this area, to minimize over or under diagnosis of abdominal tuberculosis, as both affecting the outcome of TB or/ and other diseases that mimicking TB and to make local affordable and applicable guide for diagnosis of abdominal tuberculosis in this area of restricted diagnostic facilities.

Methodology

Study area:
Port Sudan teaching hospital – National tuberculosis control program refer clinic. This a hospital of about 140 beds, that consider as the main general hospital in Red sea state – eastern Sudan, and the NTCP refer clinic is the clinic in the main tuberculosis management unit in Red sea state - Sudan, that received, diagnosed and mange all pulmonary and extrapulmonary cases from the ten localities of the state.

Study population:
All patient presented to NTCP refer clinic or those in word in Port Sudan teaching who showed symptoms suggesting abdominal tuberculosis, and didn't has excluding criteria.

Study duration:
This study done in period from February 2014 to June 2015.

Excluding criteria:
Any condition that may change the picture of abdominal tuberculosis or that may interfere with diagnosis was excluded as one of the objective is to fine simple, applicable and affordable diagnostic policy. So we exclude those with liver disease, renal disease, cardiac disease, inflammatory bowel disease and HIV.

Study design:
This is a prospective, descriptive, and interventional study in which 38 patients were enrolled. Questionnaire containing age, sex, geographical distribution, symptoms, medical history of chronic diseases, nutritional state, and social habits such as smoking and alcoholic consumption was designated, this followed by physical examination for all patient. Complete blood count, liver profile, mantoux test(for which 15 mm consider as positive for all patients, 10 mm for those who has radiological feature suggesting old pulmonary tuberculosis), CXR, and abdominal ultrasound done for all patients. From those who showed ascites on physical examination and/ or ultrasound 20 ml of ascetic fluid aspirated under precuational procedure and sent for protein, cells and cytology, PCR done for selected patients and histopathology done for those who already underwent exploratory labaratomy. Any invasive

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diagnostic procedure was avoided for athical concideration. Those patient received anti-tuberculous therapy under DOTS, with regular follow up for six month, then data analyzed .

Result

58% of Patients were male and 42 % female, age 20 – 60 years, Presenting symptom were abdominal pain in 57% usually it is generalized dull pain mild to moderate in severity, fever in 50% of patient and it is of low grade, weight loss in 43% and it is marked wt loss of more than 10%, abdominal distention 21 %, diarrhea 7 %, vomiting 7% and 50% showed respiratory symptom (cough, chest pain, shortness of breath and haemoptysis one or more taken as respiratory symptom). 14 % had past history of pulmonary tuberculosis. 20% of patient used row milk, 80% has poor nutritional state, Non of patient alcoholic nor smoker.

Leucopenia in 36% and leucocytosis 36%, features of anemia appear in 64% of patient: 80% of those patient had peripheral picture of normocytic normochromic anaemia while 20% showed feature of iron deficiency anaemia. Thrombocytosis appear in 43% and thrombocytopenia 21%. Serum albumin decrease in 93% while liver enzyme was normal or slightly nonsignificant elevated in all patients.

Mantoux test was positive in 57% and negative in 43%. U/S showed ascites in 36% this was small to moderate and never appear as massive, enlarged paraortic and mesenteric lymph node in 29 %, hepatospleenomegaly 14%, ileocecal mass 7% peritoneal adhesion and 7% psoas abscess. Ascites was exudative in 93% and transudative in 7%. CXR showed features of old PTB in 43% of patients(fibrotc changes, loss of volume). The pattern of abdominal tuberculosis were tuberculous ascites in 36%, tabes mesenterica 29%, haepatosplenomegaly 14%, dry peritonitis 7%, intestinal obstruction 7%, and psoas abscess 7%.

The common risk factors for abdominal tuberculosis in this study were malnutrition, old pulmonary TB, ingestion of raw milk and poor soscioeconomical status.

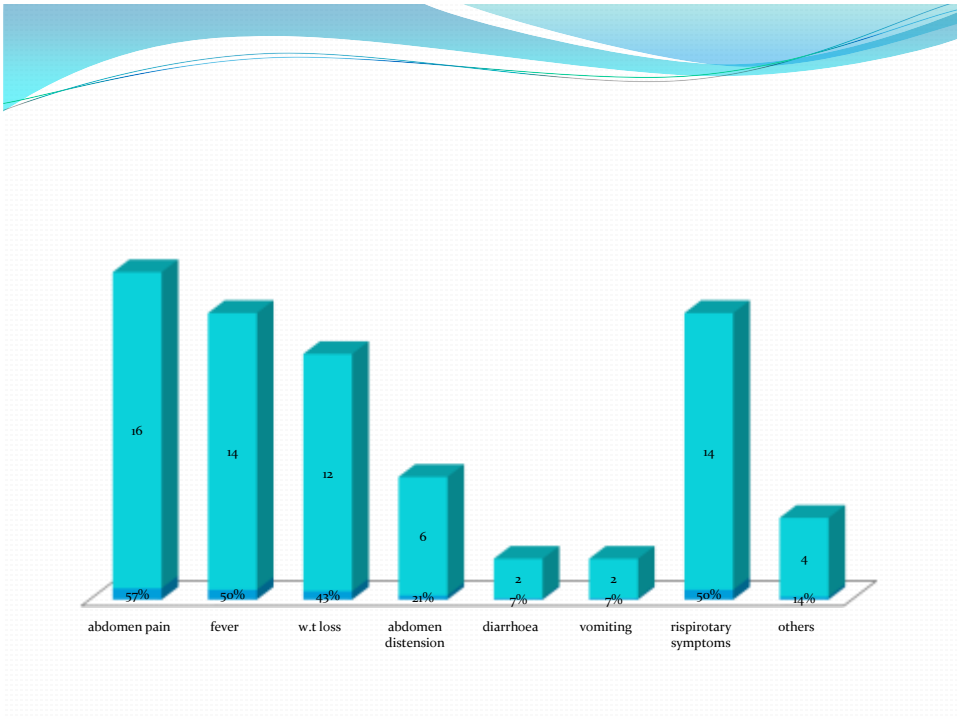

Figure (1): shows presenting symptoms

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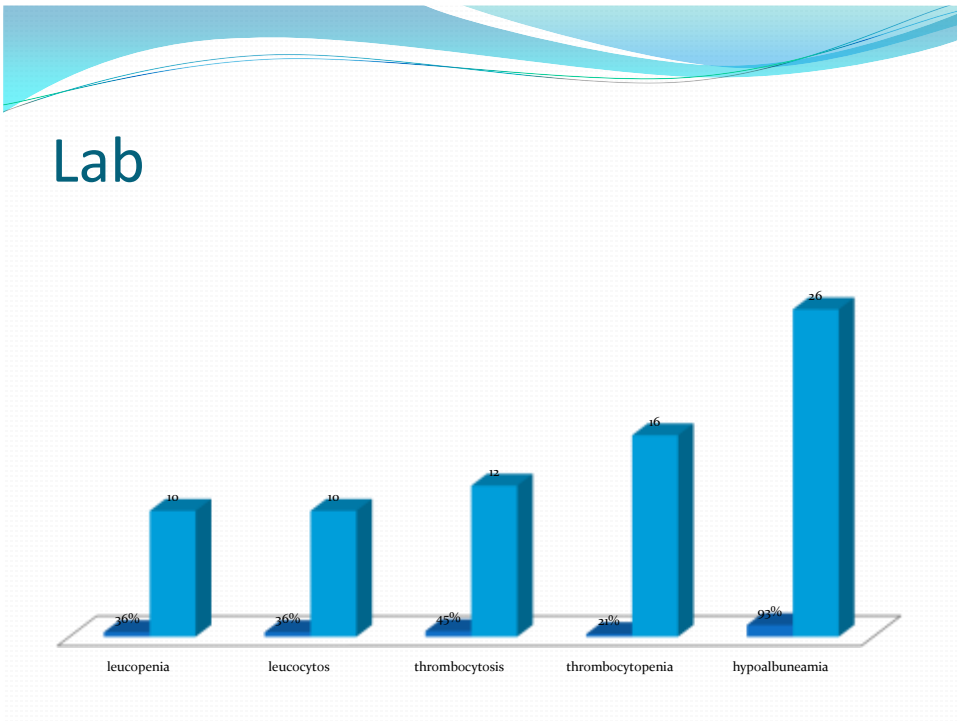

Figure (2): showed laboratory results

Figure (3): U/S showed RIF mass, granulomatous bowel and multiple lymph node

Discussion

The incidence of tuberculosis remain high in red sea state- eastern Sudan, and in last years extrapulmonary tuberculosis became more than pulmonary tuberculosis (4). Abdomnal tuberculosis in this area is the commonest

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type of extrapulmonary tuberculosis, despite poor diagnostic facilities, so this study done to raise awareness toward abdominal tuberculosis to differentiate it from other similar condition. Male are affected more than female, and both sex are in reproductive age, this increasing the poverty among those population and so increasing the risk of developing TB either as new infection or reactivation of dormant lesions, the latter is more probable as about 50% of study population showed feature of old pulmonary tuberculosis the ratio that corresponding that in literature (1) . The spread of the disease in male more than female 14 : 1 may support the role of mycobacterium bovine in abdominal tuberculosis as the habit of drinking row milk is common in male.

Abdominal pain is the cardinal symptom appear in about two third of patient this is mainly due to peritoneal involvement either by inflammation which is occurs in dry peritonitis, or due to ascites, and it may be the only presenting symptom in tuberculous peritonitis, the thing that delay the diagnosis, and even if associated with diarrhea still there is diagnostic difficulties. Fever in different type of abdominal tuberculosis range between 35% to 50% (1), and in this study it occur in half of patient, although it is not specific symptoms, but the presence of fever with other symptoms increase the possibility of TB. Although tuberculous ascites represent 36% in this study compliant of abdominal distention appear in 21% of study population that corresponding to feature of mild to moderate ascites that appear in u/s. Symptoms of large bowel tuberculosis didn't appear in study, so either it is really rare or due to small number of patient. Anaemia is common in study population, it is mainly normocytic normochromic due to hypoplastic bone marrow, while iron deficiency appear in two fifth of those anaemic patients, iron deficiency may be secondary to poor intake or increase hepcidin secondary to inflammation, and these aneamias corrected with antituberculous therapy. Thrombocytosis also appear in about two fifth, while in study done in PTB in Port Sudan it is 20% (6), this high percentage of thrombocytosis may return to consequence of old PTB either lung collapse or pulmonary fibrosis, Mantoux positive in more than half of study population although it is usually negative in gasrointestinal TB (1). Ascites usually exudative and associated with low serum albumin and normal or mildly elevated liver enzyme.

In our study tuberculous ascites is the commonest pattern followed by tabes mesenterica, while dry peritonitis presented in small percentage although globally peritonitis is the commonest type that representing 25 to 50 % (7), the low percentage may because the three group of peritonitis - wet, dry and fibrosis- (8) are presented separately in this study, intestinal obstruction secondary to adhesion or mass effect may be the presenting pattern and it resolve with antituberculous didn't need laparatomy, as in this study four cases was diagnosd with histopathogy after laparatomy, athough the ultrasound feature of mesenteric thickening and enlarged lymph node are sufficient to diagnose tuberculous oreitonitis that result in intestinal obstruction (9), psoas abscess also present in significant percentage (7%), and again it respond to antitberculous therapy and if drained this will take long time as the inflammatory process of TB is continous pathology. Hepatic tuberculosis although very rare but it appear in this study in significant number, and despite liver involvement still liver enzymes remain normal.

Conclusion

Abdominal tuberculosis is not uncommon in red sea state, Sudan, and it represent the commonest type of extrapulmonary tuberculosis, so in such endemic area high suspicion of tuberculosis should be consider whenever there an unexplained abdominal symptoms associated with fever. Abdomin may be the primary site or the disease may be secondary, and despite that mycobacterium tuberculosis is the commonest organism, mycobacterium bovine may be there. The peritoneum is the commonest site affected in red sea state while globally ileocaecal disease is the commonest (10), the peritoneum disease presented as as cites, intestinal obstruction or dry peritonitis. Exudative as cites with hyperalbuminaemia and normal liver enzymes is the commonest presentation of abdominal tuberculosis, while large bowel disease is not common in this area.

Recommendation

Large size study is recommended to published evidence based applicable, and affordable diagnostic policy that overcome the constructed facilities.

In such TB endemic areas whenever there is suspicion that intestinal obstruction is due to tuberculosis it is better to wait for antituberculous effect before deliver the patient to laparatomy.

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Improving quality of life style and disinhibition of ingestion of raw milk may decrease the incidence of abdominal tuberculosis.

Diagnostic facilities of pulmonary or extrapulmonary tuberculosis should be improved.

Abbreviation

CXR: Chest X ray.
DOTS: Direct observed therapy strategy.
EPTB: Extrapulmonary tuberculosis.
HIV: Human immunodeficiency virus
NTCP: National tuberculosis control program.
PCR: Polymerase chain reaction.
PTB: Pulmonary tuberculosis.
TB: Tuberculosis.
Ul/S: Ultrasound.

References

1. Crofton and Douglas Respiratory disease, AnthonySeaton, A. Gordon Leitich , Fifth edition, (2002), page(361).
2. TB/HIV clinical manual, WHO, Harries A, second edition,2004, page (24).
3. Sudan ntional tuberculosis program – statistic record.
4. Ministry of health, Epidemiology administration, Red sea state, Sudan.
5. Treatment of tuberculosis: Guidelines, forth edition, WHO, 2009, page (57).
6. Journal of medical laboratory and diagnosis, volume 5 number 3, Bashir A. Bashir, May 2014.
7. Marshal JB. Tuberculosis of gastrointestinal tract & peritoneum, Ami Gastrocetrol 1993, page (88).
8. Kumar & Clark clinical medicine, P. Kumar, Clark. M. Fourth edition, (2002), page (53, 76, 531, 537).
9. Fishman, Manual of pulmonary disease and disorder, Alfered P. Fishman, Jack a. Elias, Third edition, (2002), page (332).
10. Oxford hand book of clinical medicine, Ian B. Wilkinson, tenth edition 2017. Page (393).