

Abdominal Tuberculosis in Surgical Practice in Northern Nigeria

Dauda MM PhD, FWACS, Ahmed A FWACS, *Okpapi JU FMCS, **Ahmed SA FMCPATH, MPH ***Randawa AJ FWACS *Mukhtar HM FMCPATH

Departments of Surgery, *Medicine, **Pathology, *Haematology ***Obstetrics and Gynaecology, Ahmadu Bello University Teaching Hospital Zaria, Nigeria

Abstract

Background: Abdominal tuberculosis is a common complication of pulmonary tuberculosis. With the rising incidence of HIV, tuberculosis has become a major public health problem particularly in developing countries.

Methods: This is a retrospective study involving patients whose surgical specimens were processed at the central histopathology laboratory of the Ahmadu Bello University Teaching Hospital (ABUTH) Zaria - Nigeria, between January 1975 to December 2006.

Results: There were 68 males and 49 females, aged 12-70 years (mean 28.6yrs 11yrs). While paroxysmal dry cough was present in about 20 patients, abdominal pain and distension were very common. Concomitant pulmonary tuberculosis was confirmed in 15 patients (14%). The findings at Surgery in 66 patients are presented in fig.2. Multiple deposits on the peritoneum and omentum were the commonest findings (48.7% and 26.2%) respectively.

Conclusion: Abdominal tuberculosis is not uncommon and there is need to establish an early less invasive diagnostic protocol.

Keywords: Abdominal Tuberculosis, Nigeria.

Date Accepted for Publication: 20th July 2010

NigerJMed 2010: 415 - 418

Copyright©2010 Nigerian Journal of Medicine

Introduction

In 1993, the World Health Organization (WHO) declared tuberculosis a "global emergency".¹ While the resurgence of tuberculosis in advanced countries is associated with rising incidence of HIV infection; in tropical Africa tuberculosis has remain a major health issue for over half a century. Several factors including; low socio-economic conditions, poor nutrition, poor vaccination practices and rising incidence of HIV are all major reasons for the increased incidence of tuberculosis. Before the advent of potent anti tuberculosis chemotherapy, abdominal (or

gastrointestinal) tuberculosis was the commonest complication of pulmonary tuberculosis.² The pattern of tuberculosis in Africa is reported to be different from those in Europe, while tuberculosis of the kidney, adrenal gland, larynx, testis and chronic fibroid phthisis are rare in Africans, glandular tuberculosis of the liver and spleen are not infrequent³, however pancreatic involvement is rare world wide.⁴ The diagnosis of abdominal tuberculosis is difficult. Neither clinical no radiological features are conclusive.⁵ Only direct biopsy provides conclusive evidence. This is a report of the experience with abdominal tuberculosis in Northern Nigeria in nearly three decades.

Materials and Patients

The study involved patients whose surgical specimens were processed at the central histopathology laboratory of the Ahmadu Bello University Teaching Hospital (ABUTH) Zaria, between January 1975 to December 2006. A total of 158 surgical and biopsy specimens satisfied both the pathological and clinical definition of abdominal tuberculosis. The specimens were taken at the ABUTH Zaria, Kaduna and Malumfashi (132), Armed Forces Reference Hospital Kaduna (6), Kano and Katsina General Hospitals (15), and private medical centers (5). Of the 158 patients, the case notes of 117 patients were available for this review. 111 patients were treated at ABUTH complex, while 6 were treated at the Armed forces reference hospital Kaduna. All the available records including clinical data, laboratory and radiological investigations and follow up records have been reviewed.

Results

There were 68 males and 49 females, aged 12-70 years (mean 28.6yrs 11yrs). Fig.1. Presents the case and gender distribution of the patients. The trend shown is that of decreasing incidence in the early 1980's until 1987-1988, when no abdominal tuberculosis specimen was received, but by 1990 it slowly began to increase

again. This period coincide with the increasing incidence of HIV infection especially among commercial sex workers and long distance drivers who patronize these women. At this particular time many Nigerians never believed the disease actually existed. Table 1.presents the frequency of symptoms and signs found on clinical examination in 117 patients.

While paroxysmal dry cough was present in about 20 patients, abdominal pain and distension were very common. Three patients presented with pedunculated inguinal masses (mesenteric lymph nodes) mimicking inguinal hernia. Two patients had fistulae following surgery for what was thought to be appendicitis and another one presented with an anterior abdominal wall sinus. Concomitant pulmonary tuberculosis was confirmed in 15 patients (14%). Abnormal laboratory results included a raised Erythrocyte sedimentation rate (ESR) in 17%, positive Mantoux test in 8% of 32 patients, and abnormal chest x-ray in 14%. Sputum for AFB (acid fast bacilli) was positive in only 4 patients (5%).

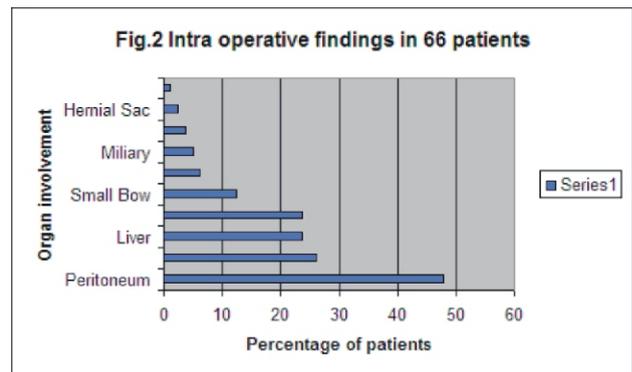
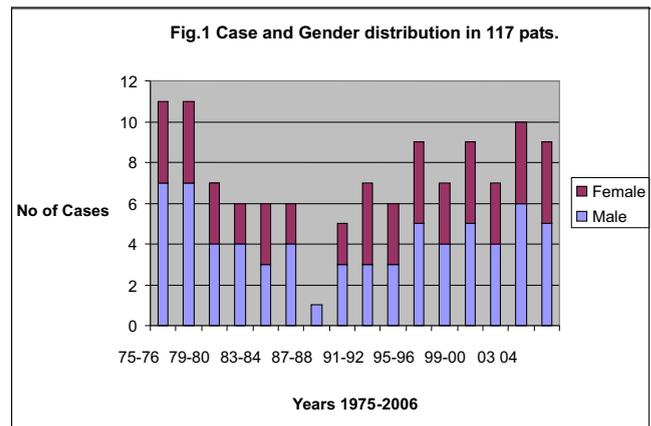
Three patients had associated diabetes mellitus with raised fasting blood sugar and one patient had abnormal liver function tests with raised serum bilirubin, transaminases, alkaline phosphatase and gamma glutamyl transpeptidase. HIV screening was done in 35 patients and 9 (26%) were positive.

The findings at Surgery in 66 patients are presented in fig.2. Multiple deposits on the peritoneum and omentum were the commonest findings (48.7% and 26.2%) respectively. Other involved organs include the liver 24%, mesenteric lymph nodes 24%, small bowel 13%, large bowel 6%, pancreas 1% and milliary in 5%. Although no organs were removed as part of treatment, by-pass operation in form of cholecysto-jejunostomy was performed in one patient. However, biopsies often multiple were taken from the peritoneum, mesentery, mesenteric nodes, and other visceral organs. Mortality following laparotomy in this group was 40%.

The patients were treated with multi-drug therapy, including thiazina, rifampicin, pyrazinamide and streptomycin, for variable length of time from 9months to 18 months. Majority of these patients 42% were lost to follow up without completing treatment.

TABLE 1. FREQUENCY OF SYMPTOMS AND SIGNS IN 117 PATIENTS

SYMPTOMS	No.	(%)	SIGNS	No.	(%)
Abdominal Pain	90	76.9	Jaundice	1	0.9
Fever	61	52.1	Anemia	29	24.8
Abd. Distension	53	45.3	Ascites	27	23.1
Weight loss	41	35.0	Hepatomegaly	18	15.4
Diarrhea	37	31.6	Abd. Mass	13	11.1
Anorexia	34	29.1	Hernia	3	2.6
Cough	19	16.2	Fistulae/Sinuses	3	2.6



Discussion

Anti-Tuberculous chemotherapy remains the treatment of choice for tuberculosis affliction anywhere in the body.^{6,7} The diagnosis of abdominal tuberculosis remains difficult and only direct biopsy provides enough information for definitive diagnosis. The peritoneum, intestine and the abdominal reticular endothelial system are usually affected singly or in combination.^{7,8} Recently however⁹, minimally invasive surgery may reveal milliary nodules in 85-95% and new serologic markers such as adenosine deaminase activity in ascitic fluid have been shown to improve diagnostic yield with minimal morbidity.^{9,10}

The earlier tuberculosis is diagnosed, the more effective is the treatment and the less the risk of spread in the community. Early diagnosis depends largely on high index of suspicion. Pearson¹¹ reports that the triad of

low-grade pyrexia, weight loss and hypomelanosis were consistent with diagnosis of pulmonary tuberculosis. However, this may not be the case for abdominal tuberculosis. We found abdominal distension, central abdominal pain, evening fevers and night sweats to be the most frequently encountered symptoms.

Our findings further confirm the bizarre clinical manifestation of extra-pulmonary tuberculosis. While majority of our patients were operated for acute abdomen, a few had distinct clinical syndromes that mimic other abdominal surgical conditions such as pancreatic head adeno-carcinoma, inguinal hernia and faecal fistulae.

About 9% of all new Tuberculosis cases were associated with HIV world wide, however, in Africa this figure is thought to be about 31% in the year 2000¹². Our findings indicate an association in about 26%. This result is lower than that reported from central¹¹ and South Africa¹³, where rates are 49% and 59% respectively. The reason for this is that only a third of our patients were screened for HIV. In the first half of the study period HIV screening was not available in the country. The rising incidence of abdominal Tb in our study however, corresponds with the rising incidence of HIV, which was first reported in Nigeria in the late 1980s.

The peak incidence of 28.7yrs confirms earlier reports from Southern parts of Nigeria¹⁴ that this disease is predominantly a disease of the young in third World countries. Most of our patients had laparotomy because of difficulty in making preoperative diagnosis. Our post operative mortality is high at 40%, but still lower than reports from South Africa at 60%¹⁵. Therefore, all efforts must be made to confirm the diagnosis through less invasive procedures, such as Fine needle biopsies and peritoneal fluid aspirations as suggested by Sayandev¹⁶. The diagnosis of abdominal TB was however considered in the patient who had an abdominal wall sinus, who made remarkable improvement on anti-tuberculous therapy. In these circumstances, peritoneal biopsy under local anesthesia would have aided diagnosis, as reported by others.¹⁷

Conclusion

The diagnosis of abdominal tuberculosis is difficult. The incidence of this condition is rising with the rising incidence of HIV infection in our sub region. The high mortality associated with laparotomy makes it mandatory to consider less invasive diagnostic methods to establish this diagnosis. In all elective cases, a trial of anti tuberculous therapy may reduce mortality associated with laparotomy.

References

1. Raviglione M.C, Sudre P, Rieder H.L. et al. Secular trends of Tuberculosis in Western Europe. Bulletin WHO 1993, 71 (3&4), 297-306.
2. Francis T.I. Abdominal tuberculosis in Nigeria- A clinico-pathological study. Trop. & Geogr. Med. 1972, 24, 232-239.
3. Hunter J. From the Works of John Hunter. Lecture notes on Surgery 1835, v.1, p567.
4. Crowson M.C, Perry M. and Burden E. Tuberculosis a rare cause of obstructive jaundice. East Birmingham Hospital. 1984.
5. Chen W.S, Su W.J, Wang H.S, Jiang J.K, Lin J.K. and Lin T.C. Large bowel tuberculosis and possible influencing factors for surgical prognosis: 30 years experience. World J. Surg. 1997, (21), 500-504.
6. Chen W.S, Leu S.Y, Hsu H, Lin J.K. and Lin T.C. Trend of large bowel tuberculosis and the relation with pulmonary tuberculosis. Dis. Colon Rectum 1992,35,189.
7. Asuku M.E. Primary intestinal tuberculosis: a cautionary note. Nig. J. Surg. Res. 1999; 1(1);33-34.
8. Underwood M.J., Thompson M.M., Sayers R.D., and Hall A.W. Presentation of abdominal tuberculosis to general surgeons. Br. J. Surg. 1992; 79:1077-1079
9. Bhargava D.K, Shrinivas and Chopra P. Peritoneal tuberculosis-laparoscopic patterns and its diagnostic accuracy. Am. J. Gastroenterol. 1992, 87, 109.
10. Dwivedi M, Misra S.P. and Misra V. Value of adenosine deaminase estimation in the diagnosis of tuberculous ascites. Am. J. Gastroenterol. 1990, 85, 13..
11. Joloba M.L, Whalen C.C, Cave D.M, Eisennach K.D, Johnson J.L, Okwera A, Morrissey A, Bajaksouzian S, Feagin J, Mugerwa R, Ellner J. and Jacobs M.R. Determination of drug susceptibility and DNA finger print patterns of clinical isolates of mycobacterium tuberculosis from Kampala. East Afr. Med. J. 2000,77 (2): 111-115.

12. Mohan A, Alladi A. and Kadiravan T. HIV/TB co-infection: epidemiology, diagnosis and management. *Indian J. Med Res.* 2000; 121: 550-567.
13. Lockman S, Sheppard J.D, Mwasekaga M, Kenyon T.A, Binkin N.J., Branden C.R, Woodley C.L, Rumisha D.W and Tappero J.W. DNA finger printing of a national sample of mycobacterium tuberculosis isolates, Botswana, 1995-1996. *Int.J. Tubercle Lung Dis.* 2000, 4 (6), 584-587.
14. Ihekweba F.N. Abdominal tuberculosis: a study of 881 cases. *J.R.Coll. Surg. Edingb.* 1993, 38, 293.
15. Clarke DL, Thomson SR, Bisetty T, Madiba T.E, Buccimaza I and Anderson F. A single surgical unit,s experience with abdominal tuberculosis in the HIV/AIDS era. *World J. Surg.* 2007; 31: 1087-1096.
16. Sayandev D. A single unit's experience with abdominal tuberculosis in the HIV/AIDS era- invited commentary. *World J. Surg.* 2007; 31: 1097-1098.
17. Das P. and Shukla H.S. Clinical diagnosis of abdominal tuberculosis. *Brit. J. Surg.* 1976, 63,941.