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Abdominal tuberculosis in a Nigerian Teaching Hospital

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Summary

Abdominal tuberculosis (TB) alone or with disseminated TB is known to mimic other conditions with non-specific investigation findings. This study aims to evaluate the clinical presentations and investigation findings of patients in our setting. The clinical records of 47 patients diagnosed as abdominal TB between January 1986 and December 2005 at the Wesley Guild Hospital Unit of the Obafemi Awolowo University Teaching Hospital, Ile-Ife, Nigeria, were reviewed. Fifty-five percent of the patients were women and mean age was 28 years. Common presenting symptoms and signs were abdominal pain 76.6%; ascites 59.6%; weight loss 53.2%; fever 29.8%. Average duration of symptoms before presentation was 3 months. Thirteen percent of patients had earlier been treated for pulmonary tuberculosis in the hospital. ESR was elevated in 89%, ultrasound scans of abdomen were abnormal in 68%, showing ascites, hepatomegaly and or enlarged nodes. Mantoux test was positive in 33% and ascitic fluid was diagnostic for TB in 29%. Chest X-ray showed abnormal findings in 25% of the patients and sputum was positive for AFB in 14.3%. Three patients were HIV positive. Forty patients (85.1%) recovered after receiving anti-TB drugs for a period of 9-12 months. Seven patients, including the three with HIV infection died. Death of 2 patients was due to unrelated causes. We conclude that abdominal TB should be suspected in patients with chronic abdominal condition and ascites as no laboratory or radiological finding is gold standard in its diagnosis. However the condition carries good prognosis if promptly diagnosed and treated.

Keywords: *Abdominal tuberculosis, management, outcome.*

Résumé

La tuberculose abdominale seulement ou avec le TB répandu est connu comme imitant autres conditions avec des résultats d'investigation non spécifiques. Cette étude avait pour but d'évaluer les

symptômes cliniques et les résultats des investigations des malades dans notre environnement. Les registres cliniques de 47 patients diagnostiqués ayant le TB abdominale entre janvier 1986 à décembre 2005 dans l'unité de Wesley au centre Universitaire hospitalier d'Obafemi Awolowo, Ile-Ife, Nigeria. Cinquante cinq pour cent des patients étaient des femmes avec une moyenne d'âge de 28 ans. Les symptômes présent et les signes étaient la douleur abdominale 76.6%, ascites 59.6%, perte de poids 53.2%, fièvre 29.8%. La durée moyenne des symptômes avant la présentation était de 3 mois. Treize pour cent des patients avaient été traités d'avance de la tuberculose pulmonaire à l'hôpital. LE ERS était élevé chez 89%, les scans de l'abdomen étaient anormaux chez 68% ayant ascites, hépatomégalie et les noeuds élargis. Le test de Mantoux était positive chez 33 % et le fluide ascitique était diagnostiqué pour le TB chez 29%. Les rayons X de la poitrine démontrait les résultats anormaux chez 25% des patients et le crachat était positif pour l'AFB chez 14,3%. Trois patients étaient positifs au VIH. Quarante patients 85.1% guérissaient après avoir reçu les médicaments anti tuberculeux pour une période de 9-12 mois. Sept patients inclus trois séropositif sont mort. La mort de deux patient était due à des causes non liées. Nous avons conclu que la TB abdominale doit être suspectée chez les patients avec des conditions abdominale chroniques. Cependant, le résultat du laboratoire ou radiologique reste le standard dans ce diagnostique et les conditions de bonne pronostique si précisément diagnostiqué et traité.

Introduction

In the last two decades, there has been renewed interest in tuberculous infections worldwide due to its resurgence following the epidemic of Human Immunodeficiency Virus Infections [1,2]. Although most of the increased incidence has been recorded in pulmonary tuberculosis, extra-pulmonary organ involvement has also increased in patients with or without HIV infection [3,4].

Abdominal tuberculosis, one of the most prevalent forms of extra-pulmonary tuberculosis, may involve the gastrointestinal tract, the peritoneum or the solid intra-abdominal organs [5]. Non-specific constitutional symptoms at presentation as well as different radiological and laboratory findings often make the diagnosis of abdominal tuberculosis a clinical dilemma [6,7]. In this study, we reviewed the records

of patients who had diagnoses of abdominal tuberculosis at the Wesley Guild Hospital Unit of the Obafemi Awolowo University Teaching Hospitals Complex, Nigeria, over a twenty year period (January 1986 – December 2005). The hospital serves the health needs of the semi-urban and rural communities of parts of Osun, Ondo and Ekiti States in Southwestern Nigeria.

Material and methods

The clinical records of all the patients seen with abdominal tuberculosis from January 1986 to December 2005 were reviewed. Patients' diagnoses were based on histological, microbiological or radiological evidence of the disease or based on a positive response to a therapeutic trial of antituberculous drugs following a strong clinical suspicion. Socio-demographic, clinical, laboratory, treatment and outcome information on each patient were extracted from the case notes and entered into a proforma designed for the study. Also two patients whose clinical records were incomplete were also excluded from further analysis. All the data were analyzed using Statistical Package for Social Sciences version 13 software for windows.

Results

Forty-seven patients with abdominal tuberculosis were reviewed. There were 21 males and 26 females, with a male to female ratio 1:1.2. The age-sex distribution of the patients is as shown in Table 1. The mean age was 28 years.

Table 1: Age-sex distribution of patients

Age (years)	Male	Female	Total
< 20	8	11	19
21 – 30	9	6	15
31 – 40	2	5	7
41 – 50	1	4	5
61 – 70	1	-	1
Total	21	26	47

The major presenting symptoms and signs are as shown in Table 2. Abdominal pain and abdominal distension were the most frequent symptoms while ascites was the most common clinical sign. Six of the patients (12.8%) had earlier been treated for pulmonary tuberculosis in our hospital. One of them did not complete the initial treatment but defaulted for 3 months before re-presenting with cough and abdominal pain.

Table 2: Presenting Symptoms and Signs

Symptoms/Sign	No	Percentage
Abdominal pain	36	76.6%
Abdominal distension	30	63.8%
Ascites	28	59.6%
Weight loss	25	53.2%
Fever	14	29.8%
Diarrhoea	12	25.5%
Chronic cough	12	25.5%
Nausea and or Vomiting	6	12.8%
Hepatomegaly	5	10.6%
Splenomegaly	3	6.4%
Enterocutaneous fistula	3	6.4%
Intra-abdominal Masses	3	6.4%

More than one feature occurred in each of the patients

Erythrocyte sedimentation rate was elevated in 42 (89.4%) patients with mean value of 107+/-18mm/hr (Westergreen), while other investigations yielded positive findings in fewer patients (Table 3). Three of the 21 patients tested for HIV were positive. Six patients had exploratory laparotomy and biopsies to aid their diagnoses with histopathologic confirmation of tuberculosis in five of the biopsies.

Table 3: Investigations done in the patients

Investigation	No (n)	Findings	
		Normal (%)	Positive/Abnormal (%)
ESR	47	5 (10.6%)	42 (89.4%)
Packed Cell Volume	47	31 (65.9%)	16 (34.0%)
Abdominal/Ultrasound	31	21 (67.7%)	10 (32.3%)
Chest X-ray	28	21 (75.0%)	7 (25.0%)
HIV screening	21	18 (85.7%)	3 (14.3%)
Ascitic Fluid Analysis	14	10 (71.4%)	4 (28.6%)
Mantoux Test	18	12 (66.7%)	6 (33.3%)
Serum Albumin	16	8 (50.0%)	8 (50.0%)
Upper GI Endoscopy	8	8 (100.0%)	-
Sputum AFB	14	12 (85.7%)	2 (14.3%)

In all, 31 (61.9%) patients had microbiological, radiological or histopathological diagnoses prior to treatment while the remaining 16 (34.0%) patients had diagnoses confirmed retrospectively following a positive response to empirical antituberculous treatment.

Thirteen patients (27.7 %) had diagnoses of intestinal tuberculosis (three of them presenting with enterocutaneous fistulae), 28 (59.6%) patients had

tuberculous peritonitis, while 6 (12.8%) had abdominal tuberculous lymphadenitis.

Forty-five patients had antituberculous therapy. The combination of Rifampicin, Isoniazid, Pyrazinamide and Ethambutol was used in 32 patients (71.1%) while in the remaining 13 (28.9%), Ethambutol was replaced with streptomycin for the first 2 months of intensive therapy. Ten patients out of the thirteen treated for intestinal tuberculosis had corticosteroids prescribed along with their drugs in the first two months. Each patient had the drug treatment for a total of 9–12 months.

Forty-two patients showed a good response to the anti-TB therapy. Of these, 21 (44.7%), including eight of the ten that had additional steroid therapy, completed their treatment and were disease free after at least 3 months of follow-up, 10 (21.3%) stopped attending out-patient clinic 2–3 months before completing their period of treatment while the remaining 9 (19.2%) patients stopped attending follow-up clinic immediately after completing their treatment. In all, seven of the patients (14.9%) died. These include the three with HIV infection largely due to poor social support and abandonment by their relations. Two other patients died before treatment could be initiated due to very poor clinical condition from disseminated disease while the other two died from causes unrelated to the disease.

Discussion

In this study, the mean age of the patients was 28 years and 87.2% were 40 years of age or less. Previous studies have noted a similar high prevalence of abdominal tuberculosis among young adults [8–11]. This shows that the disease continues to affect the economically productive age groups with attendant effect on socio-economic productivity of the society. Also, a slight female preponderance was noted in this study, similar to findings in some previous studies [12,13].

The presenting complaints in the patients were largely similar to findings in earlier studies [9–11,14,15]. The prominence of abdominal pain among the patients as well as other non-specific constitutional symptoms poses a constant challenge to the clinician in the diagnosis of abdominal tuberculosis. Ascites was also a common symptom in our patients, a finding comparable to data in the literature [11,16]. In this study, 6 (12.8%) patients presented with clinical features of previous or ongoing pulmonary disease. This differs from findings of 30% and 36% in previous studies in Saudi Arabia and Bradford, United Kingdom, respectively [9,10].

The introduction of free anti-tuberculosis drugs in our hospital by a non-governmental organization with a directly observed therapy scheme, led to a reduction in the rate of late presentation and non-adherence to treatment as well as an improvement in the cure rate of pulmonary diseases [17]. This may have reduced the number of patients with pulmonary tuberculosis presenting with abdominal disease in our hospital.

The findings in the various investigations were largely non-specific. For instance, findings noted on abdominal ultrasonography of the patients include ascites, hepatomegaly, splenomegaly, and intra-abdominal lymph node enlargements. These are also similar to findings in some studies [18,19]. The different ultrasonographic criteria advocated for diagnosis of abdominal TB in previous studies could not be confirmed in our patients [20,21]. Kolawole and Lewis (1975) had noted that calcifications and consolidation are common findings on the chest X-rays of patients with abdominal TB [22]. The findings were noted in one quarter of our patients. Other imaging studies such as Computerized Tomography axial scanning were not done in most of our patients due to non-availability of the facility in our centre for most of the study period. Peritoneal fluid examination in TB usually yield a straw coloured aspirate. Total protein >3g/dl, total cell count of 150–4000/ μ l with predominant lymphocytosis, ascitic blood glucose gradient <0.96 and serum to ascitic albumin ratio <1.1g/dl is the usual picture [2]. Also culture of the fluid may be positive in up to 20% of cases and elevated adenosine deaminase levels may be found. Ascitic fluid to serum ADA ratio >0.985 may suggest TB [2]. In this study, only 28.6% of the patients who had peritoneal fluid analysis showed a low serum to ascitic fluid albumin level.

Different drug combinations and treatment durations have been advocated for abdominal TB. The use of Isoniazid (INH), Rifampicin (RMP) and Pyrazinamide in combination for an initial two months and continuation of INH and RMP for a total of 9–12 months was advocated by Al Muneef *et al* [23]. Other combinations have also been used by many workers with good outcome. RMP induced hepatitis has been a much feared complication that may necessitate withdrawal and reintroduction of the drug after a period of time [24,25]. In this study none of the patients developed hepatitis. Similarly, the use of corticosteroids in patients with intestinal TB has been recommended in some studies [26,27]. Ten of the patients treated for intestinal disease in this study had steroid therapy. Eight of these patients completed their treatment and were disease free in the early

follow-up period. There are however few prospective randomized controlled studies on this subject and such studies will be necessary for standard recommendations.

The outcome of treatment in our patients was good as 42 of the 45 patients had significant responses after the first two months of treatment. Similar outcome are noted in previous reports [28-30]. The three patients with enterocutaneous fistulae had spontaneous closure with drug therapy. This confirms that the disease is curable hence prompt treatment with antituberculous drugs should be instituted in the patients.

Conclusion

Abdominal TB continues to affect young patients. It should be suspected in patients with abdominal pain, ascites and weight loss as no laboratory or radiological finding is gold standard in its diagnosis. However the condition carries good prognosis if promptly diagnosed and treated.

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