Original article

Female genital tuberculosis in gynecological specimens examined at the Department of Pathology, Faculty of Medicine, Addis Ababa University, Ethiopia: 20 years experience.

Abebe Kifle, Wondwossen Ergete

Abstract: A retrospective analysis of 16080 gynecological specimens examined at the Department of Pathology, Faculty of Medicine, Addis Ababa University (AAU), from January 1977 to December 1996, showed that female genital tuberculosis occurred in 222(1.38%) of them. The highest occurrence was during 1992-1996 (34.3%) and the lowest was in 1982-1986 (18%). The majority of cases (83.18%) were first diagnosed between the ages of 20 and 40 years. The most common symptoms were abnormal vaginal bleedings (45.5%) and infertility (36%). The genital organs most frequently involved were the endometrium (56.3%), fallopian tube (27%), cervix (11.3%), and ovaries (4.5%). The least affected organ was the vulva/vagina (0.9%). From this review it was evident that female genital tuberculosis is one of the causes of abnormal vaginal bleeding and infertility among female patients of the child-bearing age. Therefore, further prospective clinicopathological study is recommended to entertain the possibility of genital tuberculosis among women who complain either of infertility or of menstrual irregularity. [*Ethiop. J. Health Dev.* 1999;13(1):63-67]

Introduction

Prior to the twentieth century, tuberculosis was one of the major causes of death in both developed and developing countries (1). The first case of female genital tuberculosis was described in 1744 by Morgagni following a post-mortem examination on a 20 year old woman who died of tuberculosis and whose uterus and tubes were found to be filled with caseous materials (2). During this century it continued to be a major health problem in developing countries, but was largely brought under control in developed nations with improvement in the standard of living and the introduction of tuberculous control programs (3). Genital tuberculosis is much more common in countries with high incidence of tuberculosis. In developing countries, genital tuberculosis is responsible for a significant proportion of females presenting with infertility (4).

According to the Ministry of Health's Comprehensive Health Service Directory, 1986-87, tuberculosis is the twelveth leading cause of out patient morbidity, third leading cause of hospitalization, and first leading cause of hospital death in Ethiopia (5). The actual incidence of pelvic tuberculosis cannot be assessed accurately in any population, since it is estimated that at least 11% of patients are asymptomatic, the disease being discovered incidentally. Classically, female genital tuberculosis has been described as a disease of young women, with 80-90% of patients first diagnosed between the ages of 20 and 40. Genital tract involvement is uncommon below the age of 20 (2). Even though tuberculosis is thought to be rampant, there is little information regarding the

From the Faculty of Medicine, Addis Ababa University, P.O. Box 9086, Addis Ababa, Ethiopia

incidence of female genital tuberculosis in Ethiopia. The objective of this retrospective study is to determine the trend, age distribution, organ involvement, presenting symptoms and rate of female

genital tuberculosis among all gynecological specimens processed over a 20 year period, January 1977 to December 1996, in the Department of Pathology, Faculty of Medicine, AAU.

Methods

A retrospective review of records has been undertaken on cases of female genital tuberculosis diagnosed by histopathological examination of gynaecological specimens submitted to the Department of Pathology, Faculty of Medicine, Addis Ababa University, over a period of 20 years from January 1977 to December 1996. One of the authors reviewed the records and, because of lack information, variables like marital status and parity were excluded from analysis. Two hundred ten specimens were sent from various hospitals in Addis Ababa while twelve were from unspecified regions. Samples for histopathological examination were obtained by endometrial curettage, resection of tubo-ovarian material and cervical and vulvovaginal punch biopsies. The diagnosis was made by a pathologist in histological examination of haematoxylin eosin stained paraffin section, (6) revealing a typical morphologic feature of tuberculosis that is well formed epitheloid cell granuloma with lymphoplasmacytic infiltrates with or without caseous necrosis. This was accepted as final diagnosis. Acid fast bacilli stain and culture were not determined. The slides were not revised. The available data including demographic, presenting symptoms, and affected genital organs were provided from pathology archives and requisition forms. EPINFO statistical package was used for data analysis.

Results

A total of 16,080 biopsy specimens of female genital organs were examined in the Department of Pathology, Faculty of Medicine, Addis Ababa University, over a period of 20 years (January 1977-December 1996). On average, 804 samples from the female genital tract were seen per year. Of these, 222 (1.38%) cases were due to tuberculosis. One hundred three specimens were available from Tikur Anbessa Hospital, 52 from Zewditu Memorial Hospital, 41 from Ghandi Memorial Hospital, 10 from St. Paulos Hospital, four from Yekatit 12 Hospital and 12 cases from unspecified hospital source.

The five year distribution of cases is shown in Figure 1. The highest occurrence of 76(34.3%) cases was during 1992-1996 followed by 54(24.3%) cases during 1987-1991, 52(23.3%) during 1977-1981, and the lowest, 40(18%) cases was during 1982-1986.

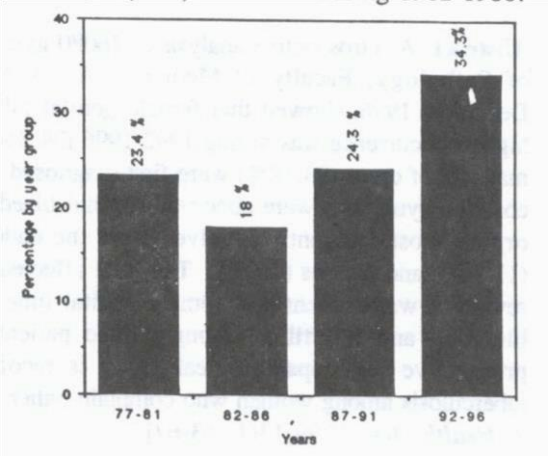

Figure 1: **Percentage distribution of 222 cases of female genital tuberculosis from 1977 -1996.**

The age range was between 18 and 65 years with the mean and median ages of 29.2 and 28 years, respectively. The majority (83.18%) of the cases occurred between the age of 20 and 40 years while the lowest occurrence was in the age group above 40 years. Nineteen cases (8.5%) were diagnosed (Figure 2).

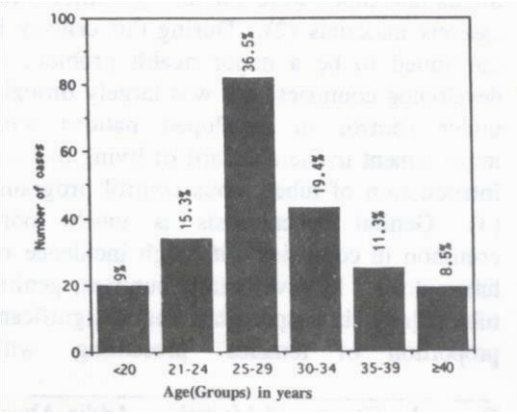

Figure 2: **Distribution of 222 cases of female genital tuberculosis by age groups**

The common clinical complaints were abnormal vaginal bleeding which occured in 101(45.5%) cases, followed by infertility 80(36%) cases, lower abdominal pain 23(10.4%), cases pelvic mass 15(6.8%) cases and signs and symptoms suggestive of tuberculosis 3(1.3%), cases, as shown in Table 1.

Table 1: **Clinical presentation of 222 patients with female genital tuberculosis, 1977 - 1996.**

Age	Clinical Presentation	Number of Cases	%
<20	Abnormal vaginal bleeding	13	5.86
	Lower abdominal pain	5	2.22
	Pelvic mass	2	0.90
20-24	Abnormal vaginal bleeding	17	7.66
	Lower abdominal pain	2	0.90
	1º and 2º infertility	14	6.31
	Pelvic mass	1	0.45
25-29	Abnormal vaginal bleeding	36	16.22
	Lower abdominal pain	7	3.15
	1º and 2º infertility	32	14.14
	Pelvic mass	6	2.70
30-34	Abnormal vaginal bleeding	19	8.56
	Lower abdominal pain	3	1.35
	1º and 2º infertility	15	6.75
	Pelvic mass	4	1.80
	Signs and symptoms of Tbc	2	0.90
35-39	Abnormal vaginal bleeding	8	3.60
	Lower abdominal pain	3	1.35
	1º and 2º infertility	11	5.00
	Pelvic mass	2	0.90
	Signs and symptoms of Tbc	1	0.45
□40	Abnormal vaginal bleeding	8	3.60
	Lower abdominal pain	3	1.35
	1º and 2º infertility	8	3.60
Total		222	100.00

The distribution of cases by involved organ is shown in Figure 3. The most commonly affected organ, the endometrium, being 125(56.3%) cases, followed by fallopian tube- 60(27%) cases, cervix 25(11.3%) cases, and ovaries-10(4.5%) cases. The least affected organ was the vulvovagina with only two (0.9%) cases. There were a total of 11591 endometrial samples in the same 20 years; tuberculous endometritis accounted for 1%.

Discussion

In places where the incidence of pulmonary tuberculosis is rampant, one may expect a high incidence of pelvic tuberculosis, since it is found in approximately 10% of patients with pulmonary tuberculosis (7). Genital tuberculosis is almost always secondary to

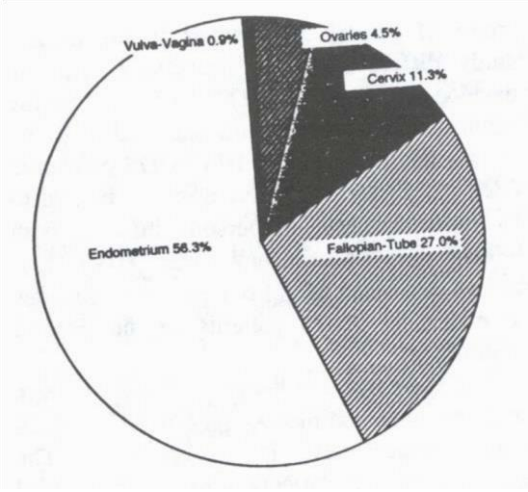

Figure 3: **Female Reproductive organs involved by tuberculosis (n=222)**

tuberculosis elsewhere, usually pulmonary and sometimes renal, gastrointestinal, bone or joint. Occasionally it is part of a generalized miliary disease process (2). Female genital tract is involved through the haematogenous route. Lymphatic spread from intestinal tuberculosis or direct spread from infected adjacent organs also occurs but is much rarer (2). Bazaz-Malik G (8) discovered tuberculosis endometritis in 2.3% of all 42,770 specimens of non-pregnant endometrial curettage and biopsies examined in New Delhi. It could be true that many cases of genital tuberculosis might have been treated on the basis of clinical diagnosis in our set-up. Of all gynaecological admissions in Riyadh, Saudi Arabia, Sisir K Chattopadhyay calculated a rate of 0.45% genital tuberculosis based on premenstrual diagnostic curettage for histopathological or bacteriological study (9). This is a much higher rate than those reported from Western Countries with similar economic background (9). On the other hand, the frequency of female genital tuberculosis was 0.002% of all patients admitted for gynaecological diseases in 47 Swedish Hospitals in the period 1968-77(10).

As shown in Figure 1, the highest frequency of genital tuberculosis reported was (34.3%) during 1992-1996 and the lowest (18%) was during 2982-1986. This steadly increasing trend of genital tuberculosis in the present study differs from the decreasing trend in developed nations (10, 11). This could be the result of the prevailing low standard of living in this country and the HIV/AIDS pandemic (12), since primary tuberculosis is thought to be more frequent in persons infected with human immunodeficiency virus (HIV) (13). Indeed, the mean age of our patients coincides with that of AIDS patients in the general population.

The age range was between 18 and 65 years with the mean and median ages of 29.2 and 28 years, respectively, in this review. The majority of the patients were in their third decade of life, accounting for (51.8%) of cases. This finding is in agreement with Bazaz-Malik G., which accounted for 62% (8), a clinicopathologic study of tuberculous endometritis in India and by Sisir K Chattopadhyay (9), pattern of female genital tuberculosis in Saudi Arabia with reported mean age of 24.8 years, but

differs from the finding in Sweden that genital tuberculosis occurred more frequently in the postmenopausal period (10).

The symptoms which brought the disease to light are shown in (Table 1). Abnormal vaginal bleeding being the commonest, accounting for (45.5%), followed by infertility (36%). However according to many sources, the most common complaints in women with genital tuberculosis is infertility (2, 8, 9). It is difficult to attribute any cause for this difference because the parity and marital status of the patients were not recorded. It is generally agreed that menstrual upset occurs in approximately one half of women who suffer from genital tuberculosis (13). Lower abdominal pain accounted for 10.4% and a pelvic mass for 6.8%. The same pattern was also noted in various series (10, 14, 15). Only 1.3% patients presented with signs and symptoms suggestive of tuberculosis clinically. This is in agreement with the fact that genital tuberculosis is a silent disease and early detection is seldom possible (14, 16, 17). The most frequently involved female genital organ in our study was endometrium (56.3%) followed by fallopian tube (27%). The usual view is that tubal infection is present in virtually all women with genital tuberculosis and endometrial tuberculosis is usually secondary from the tube (16, 17, 18). But in this study the frequency of tubal involvement is smaller than the endometrium, which might be due to the easy accessibility of endometrial sampling than the tube. Moreover, the adnexae are not likely to be accessible for examination except when clinical evidence of their involvement leads to their surgical removal. Cervical and vulval involvement accounted for (11.3%) and (0.9%) of cases, respectively. This is also similar to the findings of other studies (2, 16, 17). Cervical and vulval lesions due to tuberculosis may clinicaly simulate carcinoma or papilloma. However cytopathology may suggest the diagnosis of pap smear is done prior to biopsy (2).

Since it is generally a silent and insidious disease, a diagnosis of genital tuberculosis is easily overlooked, and histological examination of biopsy materials alone may not reveal the diagnosis in all cases (16). Sometimes typical granuloma may not be seen in tuberculous endometritis unless the biopsy is taken in premenstrual phase or multiple serial sections are studied. Moreover, most of the patients with genitourinary tuberculosis exhibit features of local organ dysfunction rather than systemic symptoms of fever, weight loss, and anorexia (14). It is estimated that 5-10% of infertile females all over the world have genital tuberculosis, although this varies from less than 1% in the United States to nearly 13% in India (2, 18, 19). As tuberculosis is the major public health problem, particularly in the developing world (3), the magnitude of infertility, menstrual irregularity, and lower abdominal pain due to genital tuberculosis seems significant. The present review confirms the significance of this problem.

Therefore, further prospective clinicopathological study is recommended to see the rate of genital tuberculosis among

women who complain either of infertility or of
menstrual irregularity. It is also recommended to look into the impact of HIV/AIDS epidemic in the increasing trend of genital tuberculosis.

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