

GENITAL TUBERCULOSIS

A Study of 30 Cases*

By

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During the past decade a great deal of progress has been made in our knowledge, understanding and treatment of genital tuberculosis. Because of markedly varying manifestations, difficulties in diagnosis and unsatisfactory treatment, this problem has created an unyielding interest in medical field.

History

Looking back at the history, tuberculosis in general was known as "Rasyaksmān", king of diseases in ancient Indian Vedas. Even in Hippocratic writings, we get vivid description of symptomatology and pathology of phthisis. It was in the 18th century that genital tuberculous manifestations first received attention. First recorded case was described by Morgagni in 1761. Hegar's monograph was published in 1886. Raymond reported the first case of tuberculous cervicitis in 1831. Kiwisch, in 1847, first reported the case of tuberculous endometritis.

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Later on, Lewis, Raymond, Spencer Wells, Murphy, Greenberg, Jedberg, Schaefer, Halbrecht, Kerchoft, Stallworthy, Sutherland, etc., have made important contributions on the subject. Great deal of work on this subject has been done by Malkani and Rajani in our country. Statistical data have also been reported by Bose, Misra and Gupta.

Material and Method

The present discussion is based on the clinical study of 30 cases of genital tuberculosis, diagnosed and treated in Civil Hospital, Ahmedabad, during two and a half years' period. Follow up study was carried out after three months to two and a half years' antitubercular line of treatment.

Incidence

The actual frequency of genital tuberculosis cannot be determined because many cases are diagnosed incidentally during the investigations of sterility in women, who were not suspected clinically of having the disease. At the same time, all patients do not come for full investigations. Considering the above mentioned factors, it was not possible to find out the incidence from this hospital. The average incidence of

tuberculous endometritis in cases of sterility, proved through routine examination of endometrium at Civil Hospital, was 1.88%, while the same through endometrial biopsies, cervical biopsies and curettage material done for various causes was 2.09%.

Past History of Extragenital Tuberculosis

This was usually available in 50% of cases. In the present series, it was available in 69.8% of the cases in comparison to 67% of the cases reported by Jedberg.

Family History

Though not very reliable it was obtained in 13.3% of the cases in contrast to 20% (Stallworthy) and 42.3% (Olli Ylinen).

Age Incidence

The maximum incidence of genital tuberculosis, i.e. 66.6%, was noted between the ages of 21 to 30 years, in comparison to 68.08% (Sheela Gupta), and 73.2% (Rao). However, there is every likelihood that this disease has been existent in the younger age groups (Table I).

TABLE I
Age Incidence

Age group	No. of cases	Percentage of cases
0-20 years	4	13.3%
21-25 years	13	43.3%
26-30 years	7	23.3%
31-35 years	5	16.6%
36-40 years	1	3.3%

Associated Extragenital Tuberculous Lesions

Associated pulmonary tuberculosis was noted in 16.6%. During the

same interval a comparative study was made to find out the incidence of genital tuberculosis in pulmonary tuberculous patients, which was 10% in comparison to 8% of Jedberg (Table II).

TABLE II
Incidence of Associated Pulmonary Tuberculosis

Author	Incidence
Malkani & Rajani	14.0%
Sheela Gupta	27.65%
Jedberg	23.6%
Present Series	16.6%

Associated Tuberculous Abdomen

Tuberculous peritonitis is a common manifestation in cases of genital tuberculosis. In the present series tuberculous peritonitis had been noted in 43.3% (no percentage quoted by Olli Ylinen), of which the diagnosis was confirmed in 33.3% of the cases on laparotomy. It is still a controversy whether genital tuberculosis spreads the infection to the peritoneum or vice versa. Barnes and Jedberg believed the former to be true in 75% of the patients. In the present study, laparotomy in few cases has made us conclude that the spread from the tubes to peritoneum seems more likely.

Associated renal tuberculosis was noted in 6.6% of the cases in comparison to 5% quoted by Jedberg. These two patients came with vesicocolic fistulae. The diagnosis was concluded on endometrial study showing tuberculous infection.

Matted axillary glands were noted in 3.3% of cases; the same reported by Malkani was 1.5%.

Incidence of Menstrual Disorder

The mean age of menarche in the present study was 14.03 years. Delayed menarche (at or above the age of 16 years) was noted only in one case, i.e. 3.3% (Table III).

hormones.

(4) Involvement of ovaries causing ovarian dysfunction.

(5) Hyperfunction of adrenal cortex due to lowered generalised resistance to infection.

TABLE III
Menstrual Disorders

Total number of patients	Total percentage of symptoms of menstrual disorder	Normal period	Primary amenorrhoea	Secondary amenorrhoea	Hypo-menorrhoea	Oligo-menorrhoea	Menorrhagia
30 patients of proved genital tuberculosis	100%	0%	6.67%	33.33%	20%	20%	20%
20 patients of pulmonary tuberculosis (from T.B. Ward)	70%	30%	—	35%	20%	—	15%

Table III shows that secondary amenorrhoea is the most significant symptom in the absence of apparent hormonal disturbance and marked general debility. In the present series, ten patients came with the history of secondary amenorrhoea of duration more than 3 months to 7 years. The high incidence may be due to the following possible causes:

(1) Decreasing blood level of oestrogen and gonadotrophin and of increasing 17-ketosteroid levels due to influence of disease on neuro-hormonal sexual system (Explanation given by A. Aldea, V. Lucas and J. Filipesca).

(2) Extensive destruction of endometrium.

(3) Impaired response to ovarian

Sterility

The incidence of primary sterility in cases of genital tuberculosis was 30% and the same was also noticed in cases of secondary sterility, while Malkani noted 39.5% and 42.4% respectively. This high incidence suggests that sterility cases should be thoroughly investigated routinely (Table IV).

Five patients had tuberculous cervicitis (16.6%). Out of these, two gave the history of dyspareunia and one gave the history of post-coital bleeding. These were the patients who had tuberculous ulcers on cervix which were proved on biopsy. The very high incidence of tuberculous cervicitis suggests two possibilities. Either patients seek

TABLE IV
Symptomatology of Genital Tuberculosis Patients

Author	Primary sterility	Secondary sterility	Leucorrhoea	Dysmenorrhoea	Backache	Abdominal pain	Dyspareunia	Post-coital bleeding
Present Series (30 patients)	30%	30%	26.6%	13.3%	16.6%	46.6%	6.6%	3.3%
Malkani & Rajani	39.5%	42.4%	61.4%	49.4%	2.5%	11%	—	—
Sheela Gupta	—	—	—	27.65%	—	65.95%	—	—
Bhaskar Rao	—	—	40.5%	—	—	30.17%	3.4%	3.4%
Jedberg	35.5%	—	—	—	—	51.1%	—	—
Sutherland	49.2%	—	—	—	—	19.8%	—	—

medical advice very late or infection came from the male partner. (Tables V and VI).

Findings on Examination

All the patients from the present study were young, minimum age being 20 years and maximum 38 years. Most of them came from mill-area, and their income was between Rs. 30/- to 150/- per month. Malnutrition was prevalent in all these patients as usually observed in other patients too. Six out of 30 had weight of more than 100 lbs. and the rest were below 100 lbs., minimum being 70 lbs. and maximum 118 lbs.

TABLE V
Findings on Pelvic Examination

Restricted mobility	70%
Ulcers on cervix	16.6%
Bilateral masses in lateral fornices	26.6%
Unilateral mass in one fornix	23.3%
Unilateral mass with adnexal thickening in opposite fornix	16.6%
Unilateral adnexal thickening in one lateral fornix	6.6%
No masses in any fornices	26.6%
Uterine hypoplasia (on clinical judgment)	20%
Vesico-colic fistulae (visualised on cystoscopy but not traceable on barium meal & enema)	6.6%

TABLE VI
Age Relation in connection with Pelvic Findings

Age group	Normal finding	Unilateral mass in one fornix	Bilateral masses in fornices	Unilateral mass with thickened adnexal in opposite fornix	Unilateral thickened adnexa	Total No.
0-20 years	1	1	1	1	1	5
21-25 years	3	2	4	4	1	14
26-30 years	1	1	2	—	—	4
31-35 years	2	2	—	—	—	4
36-40 years	1	1	1	—	—	3
Incidence of pelvic findings	26.6%	23.3%	26.6%	16.6%	6.6%	30 Patients

Table VI confirms the normal belief that the younger the age, when adnexitis is first diagnosed, the greater is the possibility of the lesion being of tuberculous origin, particularly in unmarried girls and in sterile women.

Investigations

Routine investigations, such as haemoglobin, white blood cell count, differential counts, erythrocyte sedimentation rate, urine, stool examination, etc., were carried out in all cases besides the special investigations such as screening, X-ray of chest, sputum, urine culture, cystoscopy, barium meal enema, etc., which were carried out in search of strongly suspected primary lesions.

Tuberculin test was carried out in twelve out of thirty patients of the present series; twenty-five patients were used as control. All were tuberculin positive. It can be concluded that the test has no specific value.

Routine investigations for sterility were carried out in all sterile patients. Rubin's patency test was done only in eleven safe patients (i.e. without acute inflammatory masses in fornices). Patency was noted in 45.4% of the cases. One case was diagnosed by hysterosalpingography (Fig I). For over ten years, the role of hysterosalpingography in the diagnosis of genital tuberculosis has been a subject of interest and debate in different parts of the world. We believe that, it may be used as a measure of investigation in sterile patients when histology report is negative in a strongly suspected case.

Nogalles and Bobrow have accepted the histological diagnosis as fully reliable. One case was diagnosed

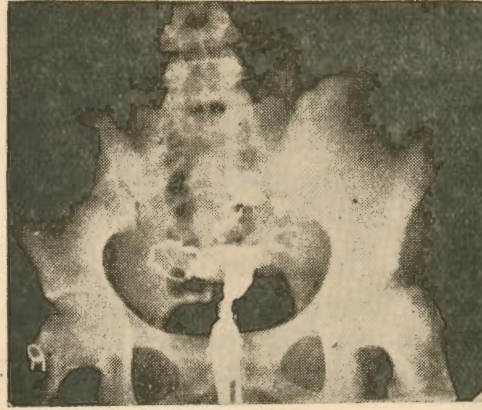


Fig. 1
Hysterosalpingograph suggesting tuberculous salpingitis.

from the histology of tissue excised from wall of a pelvic abscess after posterior colpotomy. This is a rare, but an accurate method for the diagnosis in a case of pelvic abscess of tuberculous nature with superadded secondary infection. Endometrium was normal in this case. In the present study, false negative results were seen in 80% and 20% of the cases when one strip and four strips biopsy respectively were taken. (Table VII).

TABLE VII
Means of Diagnosis

Endometrial biopsy—(one strip)	3.33%
Endometrial biopsy—(four strips)	33.3%
Cervical biopsy	16.6%
Curettage material	16.6%
Pelvic abscess wall tissue biopsy	3.3%
Laparotomy	26.6%

Menstrual blood culture was carried out in 50% of the proved cases but none of them showed the growth of acid-fast bacilli.

Treatment

Considering the treatment, streptomycin one gram per day, I.N.A.H.

0.3 G. per day, P.A.S. 12 G. per day, any of these two drugs in any combination were given to all the proved cases at least for 3 months. Later on, the treatment was again given according to the need and biopsy report.

Surgical Treatment

(1) Panhysterectomy with removal of tumor (One case).

(2) Bilateral salpingectomy (One case).

(3) Bilateral salpingo-oophorectomy (One case). Due to extensive adhesions, ovaries were removed and uterus was preserved.

(4) Bilateral linear salpingostomy (One case). Here tubes were washed with saline and streptomycin solution.

The same procedure was tried by Milosevic and associates in 73.7% of their cases and pregnancy followed in 24.6% of these cases. Hence this line of treatment may be practised more often.

(5) Window laparotomy was performed in four cases, tubercles were detected; hence intraperitoneal oxygenation was done and abdomen was closed.

(6) Posterior colpotomy for pelvic abscess with biopsy of the vaginal wall tissue (One case).

All the patients received antibiotics at least for 15 days pre-operatively and all patients had excellent post-operative recovery under the cover of antitubercular line of treatment.

Follow-up of Study (3 months to 2 years after diagnosis).

Nineteen out of thirty patients were examined and investigated. Biopsies

from fourteen patients were taken for histopathological examination. One showed tuberculous endometritis, seven showed proliferative phase, two showed secretory phase and no report could be given in three cases due to insufficient endometrial tissue.

Considering the improvement in menstrual disorder, one case of primary amenorrhoea started getting scanty regular periods, two patients of secondary amenorrhoea (9 months and 1½ years' duration) started getting normal periods, three patients with history of delayed scanty periods started getting regular periods.

No conclusive changes were noted in haemoglobin, white blood cell count, differential count, erythrocyte sedimentation rate, weight gain and screening chest, etc. Conception was not noted in any of these cases so far.

There was no mortality, nor any complications seen in surgically treated cases. All had excellent recovery and weight gain post-operatively, along with antituberculous therapy.

Discussion

In spite of a wide prevalence of pulmonary tuberculosis in India, the incidence of genital tuberculosis is very much the same as in other countries. Sutherland reported 0.56%, Sudhir Bose 0.2% and Sheela Gupta 2.0%. The incidence is low in the present study, the probable cause may be that the search for the disease was made in suspected cases only and also to some extent due to difficulties in establishing the diagnosis.

A large percentage of cases belong to the young age group (80% Jedberg, 95% Russel, 72.5% Sudhir

Bose between the ages of 20 to 40 years). It may be due to the characteristics of the disease but at the same time one may not over-look the point that the majority of out-patients attending gynaecological out-door belong to reproductive age and are young, and the disease may be discovered incidentally.

Incidence of tuberculous cervicitis (Fig. II) reported by Malkani and

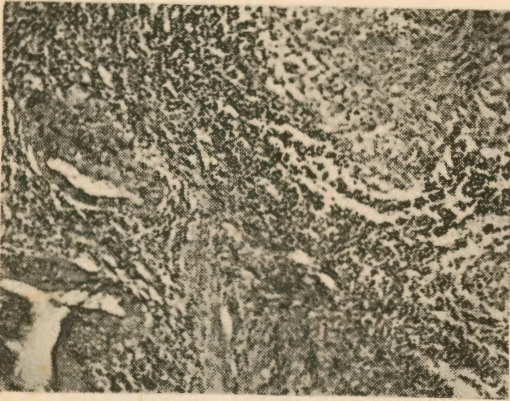


Fig. 2
Tuberculous cervicitis.

Rajani is 12.4%, by Sudhir Bose 13.75% and in the present study it is 16.6% (in contrast to Western reports 5 to 7%). This high incidence demands thorough investigation of the male partner, especially semen culture for acid-fast bacilli.

Though histopathological examination of biopsy is commonly used as a means of investigation, bacteriological examinations do occupy a unique place for diagnosing the disease in a very early stage. Four strips biopsy should replace one strip biopsy as a routine procedure. Pelvic abscess wall biopsy and linear salpingostomy

may be used more frequently as aids to diagnosis and treatment respectively in suitable cases.

True achievement is only possible when one can establish a diagnosis in very early stage of the disease and when one can restore the functions of organs not only pathologically but functionally too. Considering these facts, the treatment at present is far from satisfactory.

Summary

(1) Average incidence of tuberculous endometritis worked out on endometrial biopsies per year was 1.88%.

(2) Associated pulmonary tuberculous lesion was observed in 16.6% of cases, while the incidence of genital tuberculosis amongst active pulmonary tuberculous women has been noted in 10% of the cases (worked out on endometrial biopsies on 20 women from T. B. Ward, Civil Hospital, Ahmedabad).

(3) Associated lesion of tuberculous abdomen was noted in 43.3% of the cases (33.3% proved on laparotomy and 10% suspected clinically).

(4) History of menstrual disorder was available in 100% of the present series, and 70% of the pulmonary tuberculous patients.

(5) History of delayed menarche (at or above 16 years of age) was obtained in 3.3% of the cases.

(6) 66.6% of the patients from the present study belong to age group of 21 years to 30 years.

(7) 60% of the patients sought medical advice for sterility and 40% came for the treatment of amenorrhoea.

(8) Normal findings were observed on pelvic examination in 26.6% of cases. Abnormal findings were noted in 73.4% of the cases.

(9) Diagnosis was chiefly based on clinical evidence and confirmation by four strips endometrial biopsy. Hysterosalpingogram may help in occasional strongly suspected cases, where other means have failed to confirm it. Bacteriological diagnosis has not been of much value in the present study of 30 cases.

(10) Tuberculin test is found to be of little significance.

(11) Excellent healing took place in two cases of vesico-colic fistulae by antituberculous drugs only.

(12) Surgical intervention was done in 26.6% of the cases, without any mortality and post-operative complications.

(13) Improvement in menstrual disorders was noted in 20% of the cases by antituberculous drugs.

(14) Prognosis for life is good, in view of possibilities for controlling the disease and chances of fertility seem hopeful for the future.

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