PRIMARY AMENORRHOEA AS A MANIFESTATION OF GENITAL TUBERCULOSIS

by

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Amenorrhoea is a recognized symptom of genital tuberculosis. In Paola's series, amenorrhoea was found in 20 per cent of early cases and 50 per cent of active cases. Schroder found it in 13 out of 44 cases of endometrial tuberculosis, and Sutherland found it in 22 out of 200 cases. In all these cases, amenorrhoea was secondary. Primary amenorrhoea is a rare manifestation of genital tuberculosis. This is what one would expect as Barns has shown that primary tuberculosis rarely spreads to the pelvic organs before puberty. A majority of patients acquire the pelvic disease after puberty. Tuberculosis of the genital tract is a disease affecting younger women.

The nearer the menarche the primary infection occurs, usually lungs, the more likely it is that pelvic tuberculosis will follow. In other words, if primary infection occurs at or near menarche, pelvic infection is more likely to follow. Pelvic tuberculosis appears to come relatively late in the natural history of tuberculosis, occuring in most patients a decade after primary infection. Genital tuberculosis is generally a silent and insidious disease and hence the diagnosis is easily overlooked. Once the disease is established in the pelvis, it follows a slowly progressive, relatively benign course. Sharman found that tuberculosis of the endometrium could remain unhealed for 7-13 years. The disease can become active under stress and strain.

In a study of 301 cases of genital tuberculosis by Aldea and Luca primary amenorrhoea was found in 2.6 per cent and secondary amenorrhoea in 25 per cent. Sutherland reported 2 cases of primary amenorrhoea in 1943 and 1956, and Netter and Netter Lambert reported 3 cases in 1953. Cases are recorded by Musset and Saloman, Caudefroy and Solal (15). Reiss reported 2 more cases in 1958. We are reporting 3 such cases.

Case 1

Mrs. K. (Hospital No. 56701, Biopsy No. 1031/58) aged 23 years, was admitted at the C.M.C. Hospital, Vellore, in February 1958, for primary amenorrhoea. She had been married for 6 years. Past history and family history—non-contributory. She had 2 younger sisters aged 8 and 12 years. Patient had consulted several doctors for the past 8 years, and all had advised her to get married saying that she would be alright after that. On examination, she appeared a healthy, well-nourished individual

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with normal secondary sex characteristics. Chest and abdominal examination were normal. Blood pressure 100/60. Submandibular glands were palpable but neck glands were not. Vaginal examination showed a retroverted, small, mobile uterus. Adnexa negative and cervix was healthy. Length of the uterine cavity was 2″.

Investigation

Haemoglobin 12.0 gm%. E.S.R. 10 mm 1st hour and 22 mm 2nd hour. Manteaux positive.

A diagnostic curettage under anaesthesia was done the following day. The cervical canal was dilated upto No. 6 Hegar's and cavity curetted. The curettings were scanty. Pathological report: "Tuberculous endometritis."

Anti-tuberculous treatment was advised. No. follow-up.

Case 2

Mrs. S. (Hospital No. 108660, Biopsy No. 7256/61) aged 19 years, was admitted to the C. M. C. Hospital, Vellore, in October 1961 for primary amenorrhoea. She had been married for 3 years. Her past history was non-contributory. On examination, she appeared a healthy, thin individual. Her secondary sexual characters were normal. Chest examination was normal. Blood pressure 120/80. Pelvic examination showed a normal sized anteverted mobile uterus. There was slight thickening of the left tube. Right tube normal. Cervix showed mild cervicitis. Uterine cavity measured 2½″.

Investigation

Haemoglobin 13.9 gm%. E.S.R. 27 mm 1st hour and 57 mm 2nd hour. V.D.R.L. negative. Urine and stool examination normal.

A diagnostic curettage was done 4 days later. The cervical canal was dilated up to No. 7 Hegar's and cavity curetted. Curettings were mucoid and no normal endometrium could be identified.

Pathological report: Tuberculous granulation tissue, probably from endometrium.

Anti-tuberculous treatment was advised. No follow-up.

Case 3

Miss P. (Hospital No. 241755, Biopsy No. 2662/64) aged 22 years, was admitted at the C.M.C. Hospital, Vellore, in April 1964 for primary amenorrhoea. Patient was unmarried. Past history nil relevant. Patient had a younger sister who had attained puberty one year ago and had normal periods. On examination, patient was a healthy individual with normal secondary sex characteristics. Chest and abdominal examinations were normal. Blood pressure 115/75. Pelvic examination showed a normal sized, retroverted, mobile uterus. Adnexa were negative and cervix was healthy. The uterine cavity measured 2½″.

Investigation

Haemoglobin 13.3 gm%. E.S.R. 20 mm 1st hour and 45 mm 2nd hour.

A diagnostic curettage was done under anaesthesia the following day. The cervical canal was dilated up to No. 8 Hegar's and the cavity curetted. The curettings were scanty and were sent for histopathology and culture.

Pathological report: Tuberculous endometritis.

Culture: A.F.B. grown in culture.

Anti-tuberculosis treatment was advised. No follow-up.

Discussion

All agree that amenorrhoea in genital tuberculosis is not due to hypothalamic cause, nor is it due to pituitary cause. In a few cases amenorrhoea could be of ovarian origin, although it is rare. In such cases, the Graafian follicles fail to mature and ovarian hormones are diminished. Histologically in some, sclerocystic disease of the ovaries has been found.

In the majority of cases however, amenorrhoea is of uterine origin as shown by normal oestrogen activity and no withdrawal bleeding after hormone therapy.

Amenorrhoea is produced in one of 2 ways:

1. Complete destruction of the entire functioning endometrium. The endometrium is replaced by a fibrino-purulent exudate.

2. Mechanical obstruction in the uterus: There is severe ulcerative process in the endometrium and when it heals grannulation tissue forms and causes conglutination of uterine wall and cicatrisation.

These intra-uterine adhesions will prevent the escape of menstrual blood, where part of the endometrium is still functioning. Such patients complain of monthly pains, and retrograde menstruation may occur. In the two cases reported by Reiss, primary amenorrhoea was due to fibro-muscular bands across the uterus due to tuberculosis. It is believed that endometrium is very susceptible to tuberculosis, whereas cervical mucous membrane is comparatively resistant. Hughesdon observed that endometrial tuberculosis affects the uterine isthmus with particular severity and hence bands and adhesions are said to be commonest at the level of the internal os. These intra-uterine adhesions and bands, macroscopically are similar to those found as a result of trauma.

The curettings in genital tuberculosis might consist of grannulation tissue or in some the entire endometrium is replaced by a fibrino-purulent exudate or the curettings can be scanty.

Histologically, 2 types of the endometrium are recognized.

1. Follicular type where endometrium functions normally and periods are regular.

2. Caseous type — where endometrium is completely destroyed and amenorrhoea is present.

Where amenorrhoea is due to intra-uterine bands and adhesions, the uterine sound does not pass more than 1-1½″. Hysterosalpingogram will show a narrow uterine cavity. When the curettings are scanty in these cases and are not sufficient for histopathology, Borrel and Ryden suggest injection of 5 mg. of intra-muscular Oestradiol monobenzoate daily for 6 days followed by curettage. An alternative to this is to repeat the curettage after 1 or 2 months.

Re-percussion of menstruation on tuberculosis

Pthisis is said to become worse during menstruation. Incidence of haemoptysis is said to increase during menses. Conversely, suppression of menses reduces the incidence of haemoptysis.

Treatment

The value of early diagnosis and treatment of genital tuberculosis is obvious. The majority of us depend on histopathology alone for diagnosis. Histological examination alone does not reveal the diagnosis in 50% of cases. Bacteriological examination is more reliable than histological examination and if the curetting is insufficient for both the tests, the material should be sent for culture only. Bacteriological examination of curettings, direct smear for A.F.B. of endometrial curettings and guinea pig inoculations are essential in all cases of amenorrhoea, infertility and those who give a previous history of tuber-

culosis. It is also desirable to do routine urine culture for A.F.B. in these cases, as in Sutherland's series the incidence of active tuberculous infection of the urinary tract was 3%. Sutherland has shown that tuberculosis of the endometrium was found in other conditions also where it was not suspected, as shown below.

Tuberculous endometrium was found in 5.6% of sterility.

Tuberculous endometrium.	5.6% of sterility
—do—	1.0% of functional uterine bleeding
—do—	4.0% puberty menorrhagia (20 years and less)
—do—	0.9% bleeding with pelvic pathology
—do—	0.1% post-menopausal bleeding
—do—	4.5% post-partum bleeding.

The futility of giving hormones to any patient before curettage is done should be stressed. Once the diagnosis is made, even with minimal disease or with no symptoms, treatment must be given as there is an ever present risk of dissemination. Anti-tuberculous treatment should be given for a period of 1½-2 years. Patients should be seen every 3 months and progress judged by general condition, pelvic examination, endometrial study, erythrocyte sedimentation rate and x-ray of chest.

If atresia and bands are found in the uterus, it is doubtful if anything can be done apart from anti-tuberculous treatment. Attempts at breaking the adhesions and opening up the area and maintaining it by inserting a stem pessary or polythene tubing, are highly unsuccessful. If symptoms persist and if they are severe, surgery should be done after a full course of anti-tuberculous treatment. As the duration of treatment is long, incomplete treatment is the rule. Following anti-tuberculous treatment, the periods might start even if amenorrhoea has lasted for 6-12 years. Finally, pregnancy following treatment is rare, and if the patients do conceive, quite a large number of them get ectopic pregnancy.

Indications for surgery in genital tuberculosis

1. If bacteriological or histopathological examination reveals persistence or recurrence of endometrial tuberculosis after the patient has received anti-tuberculous treatment at least for one year.

2. Persistence of uterine bleeding or presence of tubo-ovarian masses after the completion of anti-tuberculous treatment.

When surgery is undertaken, total hysterectomy and bilateral salpingo-oophorectomy should be done. We do not agree with those who suggest that, in young girls, the uterus should be conserved.

It is essential that anti-tuberculous treatment be given pre-operatively and continued post-operatively also. Pre-operative treatment makes the operation simpler and safer and reduces the post-operative complications.

Cure in genital tuberculosis

With adequate and complete treatment, the patient can be assured that the tuberculosis will be cured. As the treatment is prolonged, incomplete treatment is the rule. Hence

we should emphasize the importance of taking the full treatment.

Chances of future pregnancy

Pregnancy following genital tuberculosis is very rare. In those who do conceive, ectopic pregnancy is common. Recently Kirchhoff of Germany & Stallworthy of England have reported normal intra-uterine pregnancies and deliveries in 6-12% of their cases with genital tuberculosis. Our own experience along with others shows that pregnancy in them is extremely rare.

Summary & Conclusions

1. Primary amenorrhoea is a rare manifestation of genital tuberculosis.
2. Three cases of primary amenorrhoea due to tuberculosis are reported.
3. Amenorrhoea is caused either by complete destruction of functioning endometrium or by adhesions and bands in the uterus, thus preventing the escape of menstrual blood.
4. Pelvic tuberculosis manifests itself about 10 years after the primary infection.
5. As the interval between primary infection and genital tract infection is usually 10 years it is often difficult to find the primary focus.
6. A plea for more bacteriological examination of curettings in these cases is made.
7. Indications for surgery are stated.

References

1. Aldea, V., Luca Zbl. Gynak. **81:** 1123-1131. July 11, 1959, 23 refs.
2. Barns, T.: J. Obst. & Gynec. Brit. Emp. **62:** 162, 1955.
3. Betty, J. Poland.: Am. J. Obst. & Gynec. 350, Feb. 1, 1965.
4. Borrell, U. and Ryden, A. B. V.: Acta Obst. & Gynec. Scand. **33:** 327, 1954.
5. Browne, F. J. and Browne, J. C. M.: London, Post-graduate Obst. & Gynec. ed. 3, Butterworths.
6. Burne, J. C.: J. Path. Bact. **62:** 101, 1953.
7. Gaudefroy, M.: C. R. Soc. Franc, Gynec. **26:** 483, 1956.
8. Hughesdon, P. E. Personal communication, 1957.
9. Musset, M. R. and Salomon, Y. C. R.: Soc-franc-Gynec. **25:** 352, 1955.
10. Netter, A. and Netter-Lambert, A. J.: J. Obst. & Gynec. Brit. Emp. **59:** 744, 1952.
11. Netter, A., Lambert, A., Kahn, J. and Montbazet, M. Montbazet, G.: Gynec. & Obst. **54:** 19, 1955.
12. Paola Di, G.: J. Obst. & Gynec. Brit. Emp. **62:** 136, 1955.
13. Reiss, H. E.: J. Obst. & Gynec. Brit. Emp. **65:** 734, 1958.
14. Schaefer George and Sutherland A. M.: Am. J. Obst. & Gynae. **91:** 714, 1965.
15. Schroder, R.: Zbl. Gynak. **45:** 43, 1921.
16. Sharman, J.: Fertil. & Steril. **3:** 144, 1952.
17. Solal, R.: Jude, — and Palvadeau, — C. R. Soc-franc. Gynec. **26:** 389, 1956.
18. Sutherland, A. M.: J. Obst. & Gynec. Brit. Emp. **50:** 161, 1943.
19. Sutherland, A. M.: J. Obst. & Gynec. Brit. Emp. **63:** 161, 1956.
20. Winifred Francis: J. Obst. & Gynec. Brit. Commn. **71:** 418, 1964.