

TUBERCULOSIS OF THE ENDOMETRIUM

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SUMMARY

Two cases of female genital tuberculosis were detected during the management of female infertility. One was found through histological examination of endometrial sample obtained from dilatation and curettage performed in the second half of the menstrual cycle to confirm ovulation. Ovulation can also be confirmed by progesterone assay in the second half of the cycle. The second case was detected through histological examination of specimens removed at myomectomy. In both cases the diagnosis was confirmed with the Ziehl-Neelsen stain.

Female genital tuberculosis maybe detected in the very health woman. It has no characteristic symptoms and it is often associated with infertility. In view of the resurgence of tuberculosis in the subregion, dilatation and curettage followed by histological examination of the endometrial sample should remain a method used in the investigation of infertility in our environment.

INTRODUCTION

In the management of female infertility an important step is to confirm ovulation. This is done by submitting endometrial tissue removed in the second half of the menstrual cycle for histological examination. The endometrial tissue is obtained by performing dilatation and curettage (D&C) or by performing an endometrial biopsy. Secretory endometrium is found following ovulation. Histological examination of the endometrium will not only confirm ovulation, but may also detect an existing endometrial disease like tuberculosis. Ovulation can also be confirmed by taking blood in midluteal phase of the menstrual cycle (Day 21 of a 28 day cycle, Day 14 of a 21 day

cycle and day 28 of a 35 day cycle) for assay of progesterone. A blood progesterone level of 6.9-27.6mg/ml confirms ovulation. The biochemical method will not detect endometrial disease like tuberculosis if it exists. In a multiple choice question (True or False) in obstetrics and gynaecology the statement "dilatation and curettage (D&C) is an essential investigation for subfertility" is said to be false. The reason given by the authors is that Ovulation can now be diagnosed biochemically and a routine endometrial culture for tuberculosis is not essential in Great Britain. This is in support of D&C as a method to be used in the management of female infertility in our environment. It will confirm ovulation if it is performed in the luteal phase of the cycle. It will also detect endometrial disease like genital tuberculosis which is still with us.

Case I

Miss A.A., a 23 year old lady, Para 0+1 reported at the gynaecological clinic with a complaint of secondary infertility. She had been married for 4 years. She had a 24 day cycle and her periods were regular and lasted four days.

There was no past medical history of a serious chest illness and she had had no contact with any person suffering from pulmonary tuberculosis.

On examination she looked healthy. The breasts were normal, the chest was clear and the cardiovascular system was normal. She had a blood pressure of 120/80 mmHg and no abnormality was detected on abdominal and pelvic examinations. The haemoglobin was 11.3 gm/dl and the sickling test was negative. A hysterosalpingogram showed a nor-

mal uterus. The fallopian tubes did not fill with the contrast medium.

Diagnostic laparoscopy and D&C were performed on the 20th day of her cycle. There was no evidence of endometriosis or of pelvic inflammatory disease. The uterus and the fallopian tubes looked normal and dye perturbation or injection of dye showed that the Fallopian tubes were patent. D&C yielded moderate curettings which were submitted for histological examination. The histology report read "sections show endometrium with granulomata showing central caseation and many Langhan's giant cells consistent with tuberculous endometritis and Ziehl-Neelsen stain demonstrated large numbers tubercle bacilli confirming tuberculous endometritis. A chest X-ray showed no evidence of pulmonary tuberculosis. She was referred to the chest clinic for Chemotherapy and she continued to attend the gynaecological clinic.

Case 2

Miss A.S., a 25-year old para 3+2 whose last child was 7 years old came to the gynaecological clinic wishing to have more family. She had no past history of a serious chest illness and had had no contact with anybody with pulmonary tuberculosis. She had a 28-day cycle and the periods lasted five days.

Her general condition was satisfactory on examination. The breasts were normal and no abnormality was detected in the respiratory and cardiovascular systems. Her blood pressure was 110/60 mmHg. The fundus of the uterus was just palpable on abdominal examination and on pelvic examination the uterine size was 12 weeks and fibroid nodules were felt in the uterus. The adnexae were clear.

The haemoglobin was 11.2gm/dl and the sickling test was negative. An ultrasonic examination showed a bulky uterus with fibroid nodules at the fundus. A hystero-galpingogram showed an enlarged uterus. The Fallopian tubes did not fill with the dye.

About a year later she complained of heavy and

painful periods and was worried because she had not got pregnant.

In view of the change in her periods, the finding of uterine fibroids and her desire to get pregnant arrangements were made to perform myomectomy and she was admitted for the operation. The findings at operation were a uterus enlarged with fibroids, and signs of chronic pelvic inflammatory disease with adhesions in the pelvis. The right Fallopian tube was blocked at the fimbriated end and there were peritubal adhesions on the left. Both ovaries were partially buried in adhesions.

Myomectomy, right salpingostomy and left salpingolysis were performed and both ovaries were freed from adhesions. Enucleation of the fibroid nodules was a bit difficult. Haemostasis was achieved and the abdomen was closed in layers with silk to skin. The fibroid nodules were submitted for histological examination. Post operatively she was managed with antibiotics, analgesics and intravenous fluids.

A.S. had a stormy postoperative period. The wound discharged profusely and later one end of it gaped. Histology report on the specimen read "4 pieces of firm fibrous tissue. Microscopy showed leiomyomata with adenomyosis. There are large areas of chronic caseating granulomatous infiltration with Langhan's giant cells consistent with tuberculosis. Ziel-Neelsen stain showed tubercle bacilli confirming infection by *Mycobacterium tuberculosis*.

A chest x-ray showed a normal heart with clear lung fields. The chest clinic was consulted and she was put on Streptomycin and the red tablet which is a combination of isonicotinic acid and thiacetazone.

The wound healed and she was able to leave hospital 2 months after surgery. She came to the clinic three weeks after leaving hospital. She was in her period and she was discharging menstrual fluid through a fistula at the operation site. She was reassured and was advised to continue taking the antituberculous drugs. A month later when she was seen at the clinic.

she was in her period and was still discharging menstrual fluid through the fistula. She was given intramuscular injection of 150 mg of medroxyprogesterone acetate in the hope that the drug would stop her periods. The drug worked and she became amenorrhoeic. Five months later when she was seen at the clinic, she was in her period and the fistula had closed.

A.S. is still on chemotherapy for tuberculosis and she continues to attend the gynaecological clinic because she wishes another pregnancy. When she was last seen she was in her period and there was no loss of menstrual fluid from the operation site.

DISCUSSION

Two cases of genital tuberculosis that were discovered during the management of infertility patients have been described. Genital tuberculosis in the female arises as a result of blood spread after primary infection² and may cause no symptoms apart from infertility, and probably indicates a good natural or acquired resistance to the infection³. Gini *et al*⁴ found 10 cases of tuberculous endometritis when they reviewed 4,700 specimens of pre-menstrual endometrial curettings from infertile women. AA was found to have tuberculous endometritis when she had a diagnostic D and C done in the second half of her cycle to confirm ovulation. Histological examination of the curettings showed she had the disease which was confirmed by Ziehl-Neelsen stain.

Laparoscopy and diagnostic D & C were not performed on AS. During the course of her investigations she was found to have uterine fibroids of about 12 weeks size and she developed symptoms of heavy periods and abdominal pain and as she was desirous of getting pregnant myomectomy was performed. Any woman in the childbearing era who is found to have a myoma which is causing symptoms, who wishes to have children and who is potentially fertile should be treated by myomectomy, but the presence of proved endometrial or pelvic tuberculosis is an example of local disease in which myomectomy would have been avoided.

A.S. had a stormy postoperative period and later developed a fistula at the operation site. There is the possibility of a sinus resulting from an incomplete operation for pelvic tuberculosis where, for example, a tuberculous abscess had been resected across tuberculous granulation tissue⁵ and when the correct diagnosis is established, it will be necessary, under full antituberculous coverage, to reopen the abdomen at the most favourable moment and complete the original operation by performing a total hysterectomy and bilateral salpingo-oophorectomy. A.S. discharged menstrual fluid through the fistula and this was not good for the community. When Oosthuizen *et al*⁶ investigated women presenting with infertility for tuberculosis, 21% of their patients had positive cultures for *Mycobacterium tuberculosis*, some from the menstrual fluid.

Fortunately the fistula closed spontaneously as she continued taking the antituberculous drugs and was made amenorrhoeic with Medroxyprogesterone acetate injection. Medroxyprogesterone acetate (Depo Provera) is an injectable contraceptive and a notable side effect of it is amenorrhoea. Use was made of this side effect of the drug in the management of the patient. In each of the patients a chest x-ray showed no sign of tuberculosis. A negative chest x-ray certainly does not rule out the diagnosis of genital tuberculosis, since the majority of pulmonary lesions are arrested by the time genital tract involvement becomes obvious.

The two patients continue to attend the gynaecological clinic and the question is whether they can achieve their goal - pregnancy and child birth. Although genital tuberculosis is always arrested if chemotherapy is taken properly, damage to the Fallopian tubes may obstruct its very small lumen so the patient may remain infertile, and because the fertilised ovum may not be able to get through the narrowed tube ectopic pregnancy may occur. Verma⁶ has confirmed the relatively poor fertility outcome associated with medical, surgical and combined treatments for genital tuberculosis and says in Vitro fertilization and embryo replacement have been

found to be successful in a few patients. Genital tuberculosis is almost always secondary to tuberculosis elsewhere - usually pulmonary tuberculosis. The mode of spread to the genital organs is usually haematogenous or lymphatic. Genital tuberculosis is difficult to diagnose because it has no characteristic symptoms. Infertility and pelvic infections are frequently diagnosed. Our records show that in 1993, 384 patients were admitted to the acute gynaecological ward with pelvic inflammatory disease and 34 patients were admitted with pelvic abscess and in 1994, 133 patients were admitted with pelvic inflammatory disease and 17 were admitted with pelvic abscess. The records make no mention of pelvic tuberculosis. The more severe manifestations of genital tuberculosis include massive pyosalpinges or tubo-ovarian abscesses. In the past two other cases of tuberculous endometritis have been seen by the author. The diagnosis was made histologically through examination of endometrial curettings obtained at D&C and was confirmed by Ziehl Neelsen stain. One of these patients had complained of irregular vaginal bleeding and the other complained of infertility.

The diagnosis of tuberculous endometritis is made by careful histological examination of curettings and a report of "Chronic endometritis" should give rise to a strong suspicion of tuberculosis unless the patient is known to have had a recent abortion². Chronic endometritis is also found in Mycoplasma and schistosoma infections and also in brucellosis.

Infertility is the most common complaint of women with genital tuberculosis. Other complaints are pelvic pain and abnormal uterine bleeding. A few of the patients may complain of amenorrhoea or vaginal discharge.

In spite of the advances in chemotherapy and surgical techniques reproductive performance remains poor following treatment of genital tuberculosis because:

1. The fallopian tubes are involved in at least 90% of cases and even though the tubes may remain

patent in many cases, the tubal damage may prevent normal fertilization and impede movement of the fertilized ovum. Tubal ectopic pregnancy is common.

2. The disease may damage the endometrium and cause adhesions which may obliterate the endometrial cavity. Nogales - Ortiz *et al*⁹ noted total destruction of the endometrium with subsequent amenorrhoea in 2.5% of their cases.
3. The ovaries may be involved and may be buried in adhesions.

The fertility committee of the Royal College of Obstetricians and Gynaecologists⁸ has stated that the most important step in the management of infertility is to confirm ovulation by taking blood in the mid-luteal phase for assay of progesterone. It stated further that at laparoscopy, simultaneous endometrial biopsy should be replaced by plasma progesterone as assessment of ovulation.

There are now in the country facilities for determining ovulation biochemically. With the proliferation of medical laboratories in the country doctors managing infertility patients have easy access to biochemistry laboratories and are likely to use the biochemical method to confirm ovulation. D and C and endometrial biopsy may be abandoned in the investigation of infertility. When this happens infertility patients with tuberculous endometritis may be missed. This will have disastrous consequences for us because there is a resurgence of tuberculosis in our environment.

CONCLUSION

Female genital tuberculosis is still with us and as it is frequently associated with infertility. It may be detected in very health looking women during investigation for infertility. D&C is the procedure that provides the curettings the careful histological examination of which confirms the diagnosis. Ovulation can be confirmed biochemically, but this method will not detect endometrial tuberculosis if it exists. D&C should therefore remain as a method

used in the investigation of infertility in our environment.

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