ACUTE PELVIC INFECTION IN THE FEMALE AND ACUTE GONORRHOEAL URETHRITIS IN THE MALE IN AN AFRICAN GENERAL PRACTICE

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It is very difficult to obtain an accurate estimate of the incidence of acute pelvic infection in the female, by which is understood the bilateral non-tuberculous inflammation of the fallopian tubes which almost invariably involves the ovaries and occurs in the young adult, with a marked tendency to recurrence. This is equally true of the incidence of acute gonorrhoeal urethritis in the male, defined for the purpose of this paper as a purulent creamy urethral discharge of recent onset associated with a marked degree of dysuria. This urethral condition in the male and pelvic condition in the female, both self-limiting diseases, have a marked tendency to recur and become chronic. The morbidity they cause is therefore high.

The following are reasons why an estimate of their incidence is difficult to obtain:

(*a*) There are few, if any, certifiable deaths from these illnesses.

(*b*) In an African community they are very often treated by unorthodox practitioners.

(*c*) If untreated, their natural history is such that they will 'burn themselves out' in the course of time.

(*d*) Studies of the infertile African female can at best only give a rough indication of the incidence of acute pelvic infection and its aftermath.

(*e*) The relatively high incidence of tubal ectopic pregnancy in the African, and the operative findings in diseased non-pregnant fallopian tubes, are but a poor reflection of the true incidence of acute salpingitis.

(*f*) Postgonorrhoeal urethral stricture in the male requiring urethral dilatation is also a poor index of the true incidence of gonorrhoea in the male.

The purpose of this paper is therefore two-fold:

(*i*) To estimate the incidence of these diseases in an African general practice.

(*ii*) To discuss the diagnosis, treatment and prevention of these diseases.

MATERIAL AND METHODS

1,000 consecutive cases of new patients of both sexes between the ages of 15 and 80 years were studied. A detailed history with particular emphasis on sexual habits, contacts, and the date of the last intercourse was obtained in all cases.

African female patients were included in the series if in addition to the history they had on clinical examination the following 2 signs: (*i*) Bilateral rebound tenderness limited to both iliac fossae, or to the lower abdomen, and (*ii*) the so-called 'cervical excitation' pain. Pain is elicited by putting tension on the broad ligaments and appendages on rocking the cervix from side to side during vaginal examination.

Male patients were included in the series if they had on examination evidence of a creamy, purulent urethral discharge. No serological tests or smears for the organism

were undertaken, the diagnosis being made entirely on the above clinical criteria. That this may be unsatisfactory is admitted. Burke[1] gave his opinion that the diagnosis of gonorrhoea can only be made by the finding of typical Gram-negative intracellular diplococci.

It was further assumed for the purpose of this paper that acute pelvic infection not occurring immediately after childbirth, or after an abortion, was due to gonorrhoea.

Results. Of the 1,000 consecutive cases of patients, unselected except for age, 447 were male and 553 female.

GONORRHOEA IN THE FEMALE

Acute Salpingitis

Of the 553 female patients seen, 64 (11·6%) had acute pelvic infection.

The age incidence. Acute pelvic infection occurs most frequently in the child-bearing age. 87·1% of the 64 cases were aged 20 - 40 years. The disease is very rare before the age of puberty. The youngest patient in this series with acute salpingitis was 14½ years and the oldest patient 43. The age-group distribution of the disease is shown in Table I.

TABLE I. INCIDENCE OF GONORRHOEA ACCORDING TO AGE

Age group	*Number of cases*	*Percentage*
15–19 years	8	12·5
20–24 years	30	46·9
25 years and over	26	40·6
Total	64	100

Marital status. 50 (78·1%) of the 64 patients with acute salpingitis were not married.

Parity. 19 (29·7%) patients were nulliparous. Of these, 8 were married, or had 'lived a married life' for 2 years. In acute pelvic infection infertility was never the reason prompting the patient to seek medical advice.

Clinical Symptoms

The symptoms in this series were distributed as in Table II. The onset of the disease was sudden in over 75% of the patients. The average duration of the symptoms before the patient sought medical advice was 3 days. The disease may be heralded by fever and rigors, these usually occurring after a menstrual period. In 0·5% of cases the onset of the disease occurred a few days after childbirth or abortion. General malaise, anorexia, and occasionally vomiting, accompanied the severe acute attack.

TABLE II. SYMPTOMS OF ACUTE SALPINGITIS

Complaint	*Number of cases*	*Percentage*
Lower abdominal pain	64	100
Dysuria	60	93·8
Heavy or irregular menses	14	21·9
Deep-seated dyspareunia	14	21·9
Vaginal discharge	25	39·1
Shoulder-tip pain	2	3·2

Lower abdominal pain. This is the most prominent symptom of acute pelvic infection. The pain may be localized diffusely across the lower abdomen or to both iliac fossae. In severe cases the patient walks slowly in an almost doubled-up attitude. *Abdominal pain was the reason for seeking medical advice in all cases.*

Pain radiating from the lower abdomen to one or other shoulder tip was an unsolicited complaint in 2 cases (3·2%). In such cases one had to be wary of diagnosing acute pelvic infection, having to consider ectopic pregnancy as a possibility. However, the response to treatment with antibiotics in both cases was dramatic and afforded considerable relief to the practitioner.

Menstrual disorders. The periods were normal in 78·1% of the patients. In the remainder (21·9%) the periods were irregular or heavy. Although menstruation was occasionally late, no patient complained of amenorrhoea.

Dysuria and vaginal discharge. Dysuria and a vaginal discharge, the latter usually creamy or occasionally sanguino-purulent, are other constant symptoms of the disease.

Dyspareunia and backache. A deep-seated dyspareunia and a backache are fairly common symptoms occurring in cases of acute-on-chronic pelvic infection. In such cases infertility primary or secondary, and palpable tubal masses were a frequent finding. 2 cases (3·2%) with fibroids presented as cases of acute pelvic infection.

Clinical Signs

In severe cases, the patient looked ill and toxic, with a dirty furred tongue. In 35·9% the temperature was above 100°F. In such cases where the temperature was raised markedly above the normal, the vagina felt 'hot and flushed'. Bilateral rebound tenderness and marked 'cervical excitation pain' were present in all cases; lower abdominal tenderness was most marked over a point half-an-inch above the middle of Poupart's ligament on both sides.

At the first vaginal examination, it is usually impossible to palpate for pelvic masses, because of the excruciating pain the patient feels. All cases were reviewed on the 5th day after treatment. It was at this second vaginal examination that tubal or other masses were felt. Such patients with residual pelvic inflammatory masses were advised to take a course of sulphadimidine tablets a week before and a week after the menstrual period for at least 6 months. This proved to be useful in 3 ways:

(*a*) It prevented the acute exacerbation of the infection.
(*b*) It limited the chronicity of the disease.
(*c*) It significantly reduced the size of the inflammatory tubal masses.

DIFFERENTIAL DIAGNOSIS

Three conditions among many others are mentioned in the differential diagnosis of acute pelvic infection.

1. *Ectopic Pregnancy*

In ectopic pregnancy a history of a missed or late period is usually obtained. In about 30% of ectopic pregnancies, a history of shoulder-tip pain is volunteered spontaneously. There is bilateral rebound tenderness and cervical excitation pain on examination. The pulse is often rapid and temperature seldom reaches above 101°F.

It is, however, often difficult to distinguish the chronic ectopic pregnancy from a case of acute pelvic infection associated with anaemia. Anaemia in such cases may obscure the diagnosis of ectopic pregnancy, delay recovery, and usually the symptoms of acute pelvic infection are more severe in the presence of anaemia.

A patient who has all the features of acute pelvic infection, but, in spite of prompt and adequate treatment for this, shows a progressive downhill course, as evidenced by:

(*a*) a persistent tachycardia,
(*b*) a persistence of the severity of the symptoms and signs, and
(*c*) a progressive fall in the haemoglobin level,

is assumed to have a chronic ectopic pregnancy, until the contrary is proved.

2. *Appendicitis*

Appendicitis is uncommon in the African. Errors in diagnosis are particularly common in the young female in whom symptoms believed to point to appendicitis often derive from the ovary. Occasionally such symptoms are related to the rupture of a Graafian follicle, the so-called 'mittelschmerz'.

3. *Torsion of an Ovarian Cyst*

Although relatively uncommon, a diagnosis can usually be made from the history and pelvic findings. Frequently, however, the diagnosis can only be made at laparotomy.

TREATMENT

1. *Choice of Patients*

The following types of patients were considered unsuitable to treat outside hospital:

(*a*) In whom evidence existed of spreading peritonitis, despite adequate antibacterial therapy.

(*b*) In whom intestinal obstruction resulted from adhesions.

(*c*) In whom a pelvic abscess developed.

(*d*) In whom the diagnosis of acute pelvic infection was in reasonable doubt.

(*e*) In whom a mass in the pouch of Douglas was associated with anaemia. The presence of this may indicate an ectopic pregnancy.

(*f*) In whom rupture of a pyosalpinx or an ovarian abscess is suspected.

2. *Choice of Antibacterial Agent*

(a) *Penicillin*. Procaine penicillin (1·2 mega units) was given daily for 5 days to treat not only the acute infection but also any concomitant syphilis. The response to penicillin was found to be prompt in these cases. In patients who responded less dramatically, the addition of Tanderil produced a definite and rapid improvement in the symptoms and signs. Failure to respond to penicillin was considered an urgent indication to revise the diagnosis.

(b) *Sulphadimidine*. This was used occasionally in conjunction with penicillin, where patients for some reason could not receive *daily* injections of penicillin.

Sulphadimidine was also used as indicated previously to cover re-infection at the time of the menstruation. In this group of patients the response to treatment was found to be prompt.

(c) *Tetracyclines* were used occasionally for those patients who lived too far away to receive treatment regularly.

(d) *Streptomycin* is recommended for the treatment of concurrent infection by *E. coli*. It was not used in this series because of the cheapness of penicillin, and the good response to it. It was also feared that streptomycin could mask underlying tuberculosis, which is common in the community.

3. *The Relief of Pain*

Morphine sulphate gr. $\frac{1}{4}$ was given initially to relieve pain in severe cases. In less severe cases sedatives such as pentobarbitone capsules were used to ensure a good night's rest.

4. *Fowler's Position*

This position which localizes the inflammation to the pelvis, was found to be of limited value. Most patients treated were ambulant or encouraged to be so by the second day. This procedure in itself helped to localize the inflammation to the pelvis.

CRITERIA OF CURE

The following criteria were used to assess clinical cure:

1. If the patient for 2 years (*a*) maintained a subjective absence of the main complaints of dysuria and lower abdominal pain, (*b*) on clinical examination showed no evidence of lower abdominal tenderness or rebound tenderness, (*c*) showed no cervical excitation pain, and (*d*) had no palpable masses in the tubes.

2. If the patient showed no infectivity to others.

3. If she showed the ability to conceive and bear a uterine pregnancy.

GONORRHOEA IN THE MALE

Acute Urethritis

Of the 447 males seen, 121 (29·1%) had acute gonorrhoeal urethritis. Males seek medical advice and help earlier than females because they are alarmed at the appearance of pus and the intense pain on micturition. The illness showed many concomitant features in the male.

1. *Age distribution of acute gonorrhoeal urethritis.* A comparison of the age-group distribution in the male in the present series with that of the British Co-operative Clinical Group[2] which studied 29,519 males from 150 clinics in England and Wales is shown on Table III. The youngest patient in this study is 17 years and the oldest 58 years.

TABLE III. INCIDENCE OF GONORRHOEA ACCORDING TO AGE

Age-group in years	*Number of cases*	*Percentage*	
		Present series	*Brit. series*
15–19	5	4·1	6·3
20–24	23	19·0	27·1
25 and over	93	76·9	66·6
Total	121	100·0	100·0

2. *Re-infections.* 44 males (36·4%) in this series were re-infected after a period varying from 2 months to 3 years after treatment. The average number of re-infections per patient was 2 with a range varying from 2 to 5 per patient. It is suggested that these re-infections are primarily due to the large 'reservoir of infection' in asymptomatic female carriers of the disease.

3. *Epididymitis.* In 7 cases (5·8%) of gonorrhoeal urethritis there was evidence also of acute epididymitis. In all but one case it was unilateral epididymitis.

4. *Condylomata acuminata.* There were 2 cases (1·7%) of condylomata acuminata with a creamy urethral discharge.

5. *Urinary obstruction.* One patient (0·8%) with acute gonorrhoea presented with a bladder palpable 4 fingers above the pubic symphisis. The obstruction was probably due to post-gonococcal urethral stricture that was aggravated by re-infection.

6. *Double infection with venereal diseases.* One patient (0·8%) had both a urethral discharge and a primary syphilitic chancre.

7. *Polyarthritis.* Flitting polyarthritis was the mode of presentation in 2 patients (1·7%) whose ages were 28 and 58 years. It is admitted that these could have been cases of Reiter's disease. In both cases the patient had been treated previously for gonorrhoea and on this occasion both the urethral discharge and polyarthritis cleared up dramatically on Bicillin.

8. *Impotence.* 2 patients (1·7%) complained of inability to get erections. They had both been treated for gonorrhoea and strongly believed that their impotence was due to the disease.

Common Beliefs among the African concerning the Cause of Gonorrhoea

The sick African will seek treatment according to his belief of the cause of his illness. It is therefore relevant to examine some of these beliefs, since they largely influence his decision to seek orthodox or unorthodox treatment for his disease. Some of these beliefs have a slight foundation in medical truth, and others have the effect of enforcing social sanctions.

1. *Penny or pin belief.* A penny or safety pin held tightly by the female during intercourse is believed by some to be the cause of the subsequent urethral discharge in the male partner.

2. *Breath-holding beliefs.* It is believed that if the female partner holds her breath during intercourse, this forces the 'bad air' in the mouth to find an outlet through the vagina and thus infect the male partner. There is no medical truth to support these 2 beliefs but they have sometimes resulted in the female partner being assaulted a few days after intercourse.

3. *Beliefs associated with the postpartum, postabortal or postmenstrual period.* It is believed to be dangerous to have intercourse with a female during these periods. This belief may have some medical support for it, because during these periods the female genital tract is not only open to infection but organisms in the crypts of the cervical glands may come to the surface. This belief is an example of a social sanction belief.

4. *Belief regarding a widow.* Intercourse with a widow whose husband has recently died is also believed to be the cause of gonorrhoea.

5. *The possessive female* who does not wish to share her male partner with another is believed to resort to 'medicinal herbs' to insure his undivided attention. It is believed that when this 'medicine', for unknown reasons, does not have the desired result, the male partner will get the disease. It is such beliefs that induce the male to seek unorthodox remedies.

TREATMENT

Because gonorrhoea is so easily 'cured' it is treated lightly by many general practitioners. This attitude not only hampers effective health education and prevention of this disease, but also, which is more serious, may encourage the emergence of resistant gonococcal strains.

Bicillin (1·2 mega units into each buttock) was used in treatment of male patients with gonorrhoea. It is the author's experience that as soon as the alarming pus has disappeared, males are rather reluctant to continue treatment. It was further hoped that such treatment would also treat any concurrent syphilis.

PREVENTION

After clinical cure, emphasis should be laid on prevention. Many factors have to be considered.

Factors Contributing to Promiscuity

'The factors concerned in the spread of venereal infection seem straight-forward enough until they are studied in detail, when they appear almost as complex as human behaviour, on which, ultimately, they depend. Neither peace, nor prosperity, nor effective remedies have eliminated them.'[3]

Promiscuity can be regarded as a symptom of social and marital maladjustment and for the purpose of this paper it is assumed that the more promiscuous a community the more prevalent will be venereal disease. The community in this practice can be regarded as standing between a double moral code, which makes assessing the prevalence of promiscuity in the community a difficult task.

There is, on the one hand, the Christian moral code, which forbids under pain of sin, premarital, or extramarital sexual relations. On the other hand there is a traditional attitude of morality which attaches no moral sanctions to such sexual behaviour, but rather encourages it. Among the factors encouraged by this traditional moral 'code' are the following:

(*a*) *Plurality of wives.* This, besides fostering 'extramarital' intercourse is a status symbol of affluence. A man may have a wife wed by Christian rites, and 2 or 3 others wed by rites of custom.

(*b*) *Premarital intercourse.* It is not uncommon for an 'engaged' couple to have premarital intercourse. Often it is insisted by the parents of both parties that before 'Christian marriage' can take place, a viable baby must be born. If the bridegroom-to-be has paid 'lobola' it is sufficient reason for the couple to stay as husband and wife until a child is born. In short, it can be said that this traditional attitude of morality encourages male licence.

Other factors encouraging promiscuity are:

1. *Unstable family unions.* These are encouraged to a large extent by the migratory labour system and by other economic factors which force both husband and wife to be away from home separately for prolonged periods. This presents a tempting opportunity to the teenage children left in the home.

2. *Alcohol* is another factor contributing to promiscuity. 30% of patients of both sexes admitted to the immoderate drinking of alcohol.

3. *Motor cars.* 45% of the male patients with gonorrhoea owned motor cars. It seems possible that the possession of a motor car offers opportunities for promiscuity.

4. *Custom.* The fear of being different in a community where illegitimacy and promiscuity are ill-defined is a final factor.

Factors Preventing Promiscuity and Infection

The following factors have been considered for the prevention of venereal disease in this practice:

1. *Stabilization of the family.* This is a socio-political problem not within the scope of this paper.

2. The use of a *condom* by the male partner.

3. *Prophylactic penicillin* before intercourse to male. This practice could lead to the emergence of resistant gonococci.

4. *Notification.* If the disease were made notifiable, the local authority with his greater resources could trace contacts more effectively.

5. *Religion.* In this community with its two-fold code of morality, the fear of sin and its punishment is no very great deterrent. It seems reasonable to conclude therefore that moral or religious teachings provide insufficient motive for abandoning promiscuity.

SUMMARY

1. 1,000 consecutive cases selected only by age were studied.

2. Among the females, 11·6% had acute pelvic infection and among the males, 29·1% had acute gonorrhoeal urethritis.

3. The diagnosis and treatment of these diseases are discussed.

4. Emphasis is laid on prevention of gonorrhoea, and the role of the double code of morality of this community is discussed.

I am indebted to my wife for her encouragement and to Rev. Father Raymund Mullan for his criticisms in the preparation of this paper.

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