years she had complained of sickness and weakness. Six months ago her abdomen was swollen. She has lost flesh. Abdominal pain at intervals. The abdomen contained free fluid around an ovarian cystic tumour. The fluid decreased in amount during the few days she was at rest in hospital.

Operation.

On November 14th, 1900, the abdomen was opened, and the thick ovarian intraperitoneal fluid and the ovarian tumour were removed.

CASE IV.—*Cyst adenoma, 8 in. by 8 in.; one heavy tumour, tensely cystic along the right and less tensely cystic along the left border.*

E. B., aged 42, twenty-six years married, three children, the youngest 10 years old.

History.

History of abdominal pain for one year; irritable bladder; menses longer in duration and shorter in interval. She had lost flesh. She was a sallow, anaemic woman. There was an adenomatous polyp of the cervix uteri; the ovarian tumour in the abdomen reached 2 in. above the umbilical level.

Operation.

At the operation on February 16th, 1909, the pedicle was ligatured and the whole tumour removed from amidst a pint of free ovarian fluid; the small aperture of recent rupture of the cyst and the dribble of its contents were observable through the large incision before the tumour was handled during the operation. Adhesions supplied by one omental band of blood vessels attached to the tumour some distance from the site of rupture.

A brief analysis of the four cases is suggestive. In non-malignant cyst-adenomata the clinical manifestations are those of—

(a) Tumour degeneration: (1) impairment of health disproportionate to the size of the tumour; (2) abdominal pain; (3) variable distension of the abdomen; (4) irritability of the bladder; (5) irregular menstruation subject to the usual modifications of pregnancy, lactation, and the climacteric.

(b) Rupture of the cyst, acute pain, recurrent pain, vomiting, the accumulation at a variable rate of free fluid in the abdomen.

The diagnosis of cyst rupture by free intraperitoneal fluid can only be (1) positive, when the partially-filled cyst can be felt or when the previously firm cyst has completely collapsed; (2) presumptive, when the clinical manifestations of degeneration and rupture have been obtained; and (3) occasionally and exceptionally, when the free fluid is small in quantity and the rupture minute, both may escape detection before and during the operation of ovariectomy. The modern preference for removal of the tumour entire, if practicable, accounts for a long incision in Case IV, whereby both the 20 ounces of free intraperitoneal mucoid fluid, and the dribble through the small aperture of rupture were exposed to view.

The teaching of Matthews Duncan—that, although the diagnosis of an ovarian tumour approaches practical certainty, it is not one of scientific precision—applies also to the recognition of complications.

The ovarian tumours of small size and the largest of only moderate size in my series of ruptured cysts had impaired the health of the patients to an extent unusual for the size of each growth. Not one was malignant. The general peritoneum, so far as it was visible, was only changed in one case (1), in which it was injected and thickened, but not shreddy.

The quantity of fluid in Case I may be estimated at 37 gallons, but it is not the fluid alone that exhausts the patient.

Records of tappings, as of other achievements during life, have been preserved in odd places. On the authority of T. Stafford Lee, an old tomb (1728) in Bunhill Fields Cemetery, inscribed with the name of Dame Mary Page, who died at the age of 55: "In 67 months she was tapped 66 times, had taken away 240 gallons of water." Several similar epitaphs have been discovered. A dried ovarian cyst in the museum of the Royal College of Surgeons⁵ is catalogued with this history: "Between 1757 and 1783, a patient, aged 27, to begin with, underwent 80 tappings, and lost 6,631 pints of fluid in 26 years."

The mechanical inconvenience caused to a patient by an abdominal tumour may be distressing. A multiple pregnancy or a combined ovarian tumour and advanced pregnancy entail physical inconvenience equal to that of an ovarian tumour of corresponding total size, yet the vital effects on the patient have always been widely different, as illustrated by the photographs.

Degenerative changes in cyst-adenomata are important; they frequently exist without clinical evidence, because the often slowly formed compensatory vascular adhesions they excite check or modify their course. Rupture is rare, and, like the degeneration of which it is the consequence, may occur early with a small growth, as in Case I, where the growth was the size of an orange.

Degeneration, whether the tumour be ruptured or not, varies in its effect on the patient with the degree of vital reaction she possesses, and with the total recumbent rest she takes; it may be revealed by corresponding clinical symptoms showing exacerbations or improvements. These variations are inconsistent with a locally progressive simple tumour, and they have not been shown to have been due to chronic inflammation.

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THE INCIDENCE OF GONORRHOEA IN GYNAECOLOGICAL HOSPITAL PRACTICE.*

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It is somewhat remarkable that a disease so widely spread in the community and disastrous in its effects upon the female pelvic organs should have been treated with less attention than the more rare gynaecological diseases. The explanation is partly the natural avoidance of an unpleasant subject. It is also probable that medical practitioners who are not regularly attending gynaecological departments do not fully realize the prevalence of the disease. Again, dread of publicity and possible litigation prevents frank statements from the doctor to the patient or patient's relatives. It therefore arises that the medical profession as a whole is somewhat indifferent on the subject of gonorrhoea, from ignorance of its prevalence, especially in the chronic forms.

Cases may be regarded as simple leucorrhoea, cystitis, or pelvic inflammation, unless a searching inquiry is made into their etiology. It follows that the lay public is entirely unaware of the lifelong suffering and chronic ill health caused to thousands of women annually by this infection. Otherwise it is inexplicable that while attention is concentrated on the falling birth-rate, no one should have brought forward gonorrhoea as the most frequent cause of sterility. Women are not infrequently blamed as unnatural creatures losing the maternal instinct in the present-day struggle for ease and pleasure when they are the victims of a preventable disease. The chief danger of gonorrhoea lies in its chronicity, as cases are multiplied by those who believe themselves to be cured.

Impressed by the relatively large number of cases of gonorrhoea in all stages presenting themselves for treatment in the gynaecological out-patient department of the Liverpool Stanley Hospital, I have kept brief notes for the purpose of getting some approximately accurate figures of the frequency of this disease in women.¹

It will readily be understood that a seaport, with its mixed nationalities and large proportion of sailors, would be in the unenviable position of being more generally infected than an inland city.

It is from 1,052 consecutive out-patients and 157 in-patients, drawn chiefly from the wives of dock labourers and sailors, that I have made notes on which I venture to base these statements. In many cases I have confirmed the clinical diagnosis by a bacteriological examination of the discharge from urethra, cervix, Bartholini's ducts, or of the contents of pelvic abscesses.

Diagnosis.

Most of the usual points have been considered—namely, a history of pelvic inflammation following the first menstruation after marriage, associated with painful micturition, sterility, and, when there are children, with the presence of ophthalmia neonatorum.

* Read before the Association of Registered Medical Women, March, 1909.

In getting the history, leading questions have not been asked, as it only adds mental misery to her physical sufferings if the suspicions of the patient are aroused as to the cause of the illness. In acute cases the physical signs are usually sufficiently striking, in latent cases there is more difficulty when the organism cannot be found. The presence of bilateral inflammation of Bartholini's ducts, shown sometimes by redness at their orifices, acuminate condylomata on the vulva, a caruncular condition of the urethral mucous membrane, may assist the diagnosis. In some of the more acute cases oedema of the cervical mucous membrane may cause a polypoid appearance at the external os. This may be followed by an erosion of the cervix with a yellowish-green vaginal discharge. The urethral lips may be swollen and oedematous. At the time of the menopause an irritating vaginitis sometimes occurs. When the disease is no longer limited by the internal os, but has spread to endometrium or tubes, a tender enlarged uterus, or an inflammatory mass in the pouch of Douglas, will be noted. The bilateral character of the lesions is not an infallible guide, as I have found the organism in a unilateral pyosalpinx, and a solitary Bartholini abscess.

Obscure cases of cystitis are frequently of gonorrhoeal origin, as the organism readily extends along the urethral mucous membrane to the trigone, and chronic ulceration results. Direct examination of the bladder and urethra by Kelly's cylindrical cystoscope with head lamp or forehead mirror is of the greatest value. In the knee-elbow position the bladder can be inflated with air and readily inspected. If a small-sized instrument is used no anaesthetic is necessary. At the same time, local treatment can be applied to the affected bladder or urethra.

Menstruation is usually increased in frequency and duration when the endometrium is infected. A mucopurulent discharge without menorrhagia is symptomatic of disease of the cervix limited above by the internal os. In quiescent cases menstruation is not infrequently followed by an exacerbation of the discharge, when the gonococcus can be more readily found.

A latent case may become acute after extreme exertion, exposure, during pregnancy, in the puerperium, or from any cause producing pelvic congestion.

Attempts at replacement of fixed retroverted uteri, pessary treatment, or curettage may cause an exacerbation in a latent case.

Incidence.

American and Continental observers have published statistics of the incidence of the disease, varying somewhat widely. Noeggerath,² who in 1872 was the first to point out the frequency of gonorrhoea, made some rather sweeping statements, which he modified later. Sanger³ estimated that 18 per cent. of all gynaecological cases had gonorrhoea. His facts were criticized by Erb,⁴ who found 4.5 per cent. of all married women affected among the cases he examined.

Statistics will vary with the class of patient, the character and religion of the population, and the personal factor of the observer. In the results here recorded I have not included doubtful cases.

Among 1,052 consecutive gynaecological out-patients I found 149 cases of gonorrhoea—14 per cent.—an incidence rather lower than that of Sanger. This means that one out of every seven women who come or are sent to the out-patient department has gonorrhoea in an acute or chronic form. Three cases of gonorrhoeal vulvo-vaginitis occurred in children. Nearly all the patients were poor, respectable, married women. Of them, 47 were sterile, 30 per cent., while a considerable number had only one child. I have not been able to ascertain the relative incidence of sterility in the pelvic or uterine cases and of those limited above by the internal os, though it might be of some value to ascertain if the latter condition affects fertility least.

Among 157 in-patients, nearly all operation cases, 39 were gonorrhoeal, or 24 per cent.—1 out of every 4 women admitted. Of these 13 were sterile, 33 per cent. Of these 39 cases, 5 required operation for purulent salpingitis, 2 for pyosalpinx, and 2 for ovarian abscess. In 2 there was a haematoma of the ovary, in 1 haematosalpinx. The latter condition was associated with haematuria and profuse cervical discharge. In 18 there was chronic salpingitis with adhesions from localized pelvic peritonitis. Among

them were 3 cases of hydrosalpinx. A large majority required laparotomy, 7 only, chiefly very chronic and long-standing cases of endocervicitis, were treated by curettage and the intrauterine application of pure carbolic acid. Among the total number have been some striking instances of the latent form becoming acute.

One patient after treatment for chronic pelvic inflammation became pregnant. She had a good deal of pain during the pregnancy and in the puerperium an acute exacerbation occurred necessitating later the removal of both tubes and the separation of innumerable adhesions.

A second case illustrates the danger of curettage for sterility. This operation had been performed at another hospital, acute symptoms immediately supervening. The patient declined further operation and was treated by a doctor at home for some months. When she was sent to the Stanley Hospital she had a large ovarian abscess extending nearly to the umbilicus.

A third patient, a widow, gave a history pointing to gonorrhoea fourteen years before. She had a small cyst of Bartholini's duct, and suddenly developed acute purulent salpingitis. It was possible that the organisms had remained quiescent in the duct, but a second infection was also possible.

A fourth case emphasizes the danger of pessary treatment in chronic gonorrhoeal cases. In a young woman attending for pelvic pain it was possible after prolonged douching to replace a somewhat fixed retroverted uterus bimanually and insert a Hodge pessary. A week later she returned with an attack of acute purulent salpingitis necessitating operative treatment.

Curettage occasionally reveals the fact that what one has believed to be a limited endometritis has spread to the tubes.

A patient was curetted for supposed simple endometritis. Under the anaesthetic a questionable thickening of one tube was felt. The next day there was a high temperature with symptoms of pelvic peritonitis, which fortunately rapidly subsided.

Curettage should be limited to cases of endocervicitis, where the infection has not spread beyond the internal os.

The Gonococcus.

The gonococcus, though difficult to cultivate, can be fairly easily recognized in smear preparations from its morphological characters, staining reactions, and tendency to penetrate the protoplasm of the leucocytes. In pus of long standing the gonococci may be absent or scanty, and when found look unstained and degenerate. Secretion from urethra, cervix, or Bartholini's ducts gives the best results. The organism has a tendency to linger in recesses lined by columnar epithelium.

Mortality.

In this series of 37 in-patient and 149 out-patient cases there has been no death.

Prognosis.

Once infected the prognosis as regards cure is uncertain. Even when the disease is confined to the lower zone—that is to say, is limited above by the internal os—it is possible for the organism to lurk in a recess and to cause further trouble. In pelvic cases complete recovery without a mutilating operation is uncommon, even when prolonged rest can be taken. Conservative efforts directed towards preservation of the tubes frequently end in disappointment and a second operation. Still, the occasional success of such efforts is an encouragement to refrain from unnecessarily severe measures. In most cases the patient, if a young woman, prefers to run the risk if the facts are explained to her. Reinfection frequently spoils a successful course of treatment. One patient curetted for long-standing leucorrhoea was quite well for six months. She then returned with an exacerbation apparently due to a reinfection.

In a mild case the prognosis is difficult. The disease may subside to light up again after extra exertion or during menstruation or pregnancy. In many cases the patient becomes the subject of chronic pelvic pain, which takes her from one hospital to another. The physical signs are so slight that she is often regarded as the victim of neurosis, and it is only on opening the abdomen that one finds justification for her complaints. In such cases operative measures are often quite successful, and, freed from the chronic pain, the nervous system may return to a normal condition.

Treatment.

The treatment of these cases has necessarily varied with the character and site of the disease. If acute, rest and

cleanliness have been the first measures adopted. Alkaline sitz-baths have been advised, to relieve the pain and remove the discharge.

In chronic bladder lesions, the local application of silver nitrate solution through a Kelly's speculum, followed by boracic lotion irrigation has given good results.

Caruncular excrescences of inflammatory origin have been snipped off and the bases cauterized, and similar treatment has been applied to acuminate condylomata.

Cases of acute salpingitis have been kept in bed until the temperature fell, on milk diet, saline aperients, having turpentine stupes applied for the severe abdominal pain. If pus was suspected, the abdomen was opened. In all but one case, at least one ovary has been left.

This patient, a young woman, came up a few months later looking very miserable. She said she had no pain, but felt wretched, was irritable, had pains in her head, and was getting thin. She improved on tonics to a certain extent. The operation had been for a pyosalpinx which had undergone torsion with resulting haematosalpinx. The other tube was diseased, and so intimately associated with the ovary that removal was necessary. The uterus was left.

It has been occasionally possible to excise the inflamed corpus luteum containing sero-purulent material by a wedge-shaped incision, leaving healthy ovarian tissue, and such cases have done well.

Expectant treatment has been adopted when the acute attack passed off rapidly, and the physical signs were slight. Unfortunately cases of complete recovery have been few, a relapse often driving the patient back into hospital. After a sharp attack, when the patient has to return to hard household labour, such as washing, it has proved more satisfactory to open the abdomen, and then to treat them as conservatively as possible.

In two of the 39 cases the uterus was removed with the tubes.

In one case an ovarian abscess communicated by a small fistulous opening with the rectum, and was secondarily affected by *B. coli communis*. All the pelvic organs were matted together by adhesions of some eighteen months' standing, and the uterus was removed for vaginal drainage. It was easier to remove than to leave it.

In a somewhat similar case of large ovarian abscess the wall had become adherent to the bladder, into which it was on the point of discharging. With some difficulty on account of the infiltration at the base of the bladder the uterus was removed with the tubes and right ovary, no rupture of the abscess taking place. As there was danger of leakage from the bladder, the pelvis was drained with iodoform gauze carried through into the vagina. The uterus was large, and its lining resembled the wall of an abscess cavity.

In both these cases the pouch of Douglas was opened up posteriorly to avoid leaving an undrained cul-de-sac. The after-result in these cases was better than in those in which the uterus was left, where leucorrhoea often persists.

Drainage has not been adopted in gonorrhoeal cases, unless there has been some complication, and only in one instance through the abdominal wall, where there was suspicion of injury to a ureter in a myxoedematous patient, whose condition did not warrant prolonging the operation. Drainage has proved to be entirely unnecessary, and, after mopping out the pelvis with warm saline solution on gauze sponges, the abdomen has been closed.

One case subsequently developed a small pelvic abscess, necessitating drainage, following the removal of a thickened tube and ovarian haematoma.

She was a very anaemic and debilitated woman. The abscess was so small that it could not be localized from below, and was reached through an incision above Poupart, through which adhesions were separated. Two fingers in the vagina were of assistance in locating the pus, the quantity of which did not exceed a teaspoonful.

In all cases the abdominal wall was sewn up in three layers, with fine catgut for the peritoneum, and buried continuous silkworm gut for the sheath of the rectus. No hernia has at present been reported, though belts were not advised, and the patients got up about the tenth day, leaving on the twelfth, unless there was some contra-indication. No suppuration in the abdominal wound occurred in any of these cases, except in that of the pelvic abscess, where the silkworm gut was removed at the second operation. It would appear that a high opsonic index has been reached, and that the tissues are highly resistant to microbial infection.

It is too soon to give complete after-histories. At present a considerable number have reported themselves as quite well. In three or four some chronic pain remains, and these are unfortunately those in whom adhesions were separated, leaving what were to all appearances healthy tubes. Leucorrhoea has persisted in some instances where the uterus was left.

Prophylaxis.

My object in bringing forward these facts is to renew interest in a disease extremely widespread, and the cause of endless suffering to many ignorant and innocent women, and in the hope that practical prophylactic measures will be suggested.

I would suggest that, with the co-operation of the medical profession as a whole, further investigations be undertaken to ascertain the extent of this disease, and some attempts made to lessen the incidence.

I do not venture to indicate how to deal with the sensitive social conscience of the present day, but it is obvious that ignorance constitutes a grave danger to the community.

Loyalty to the patient herself must be the first consideration, and the risks employers and others are running secondary. Apart from education, the only solution of the problem is notification, as has been suggested for ophthalmia neonatorum, so that early and complete treatment could be adopted and if necessary enforced. To this method, unfortunately, there are many grave objections.

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CAESAREAN HYSTERECTOMY IN PREGNANCY COMPLICATED BY MYOMA UTERI.

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A GOOD deal has been written lately on the treatment of myomata in pregnancy. My experience in Leeds confirms the view that operative interference is very rarely called for to secure delivery. The myoma very rarely obstructs the birth. When, however, the parturient canal is seriously obstructed, operation is necessary to save the child and to obviate risks to the mother. When anatomical relations permit, myomectomy is the operation to be preferred, but in most cases that require operation hysterectomy is best.

CASE I.

Mrs. A. B., wife of a medical man, was brought to me by her husband in July, 1908, on account of myomatous growths in the pregnant uterus. She was 35, and had been married six years without becoming pregnant; she had enjoyed good health on the whole, and, though liable to dysmenorrhoea, had never suffered from menstrual excess. She had not suspected that anything was wrong with the uterus until a few weeks pregnant. Menstruation ceased in April, 1908, and labour was due about January 22nd, 1909. The usual symptoms of pregnancy were present when I saw her, but the uterus reached two-thirds the distance between pubes and navel in the third month, and there was a hard myoma on the right of the fundus. On vaginal examination, another could be palpated occupying the posterior and left wall of the cervix and projecting in the direction of the broad ligament. It was clearly recognized that this might prove an obstacle to normal delivery, but it was decided to let the case go to term if possible. The husband was very anxious that the child should be saved and that delivery should take place *per vias naturales* if possible, and that later the myoma should be operated upon, for he was contemplating removal to a foreign station, and very much dreaded the possible recurrence of the conditions now present at a time and place where skilled assistance might not be available. I willingly agreed to do my best to carry out his wishes, but stipulated that if at term the parturient canal were found to be seriously obstructed I should be at liberty to perform Caesarean section and deal with the myomata at the time as might seem best. What one would most anxiously avoid would be to allow labour to progress to the second stage and then to be compelled to destroy the child, or to risk damage to the myoma and uterus, or else to have to perform Caesarean section on a patient advanced in labour after fruitless efforts at vaginal delivery. This discretion was freely given by those concerned.

In the following month the uterus increased rather quickly in size, and there were at least two attacks of severe pain, with symptoms of obstruction of the bowels; fortunately these yielded to simple treatment. During the autumn there was a good deal of pain in the left leg, and vomiting was troublesome.