A Lecture

ON

PUERPERAL PELVIC INFECTION.

DELIVERED TO GRADUATES AT THE MANCHESTER
ROYAL INFIRMARY

BY

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PUERPERAL pelvic infection only differs from other pelvic infections in that it appears just after a confinement at term, a premature labour, or an abortion. The cause may be one or more of a very long list of pathogenic organisms, which may come from the exterior or from the patient's own body.

The route of infection may be by the vagina, the uterus, and the tubes; by the torn perineum and recto-vaginal septum; or by the torn cervix and parametrium. Again, it may be from bowel across the peritoneal cavity, or by the blood stream from some focus of infection in another part of the body. The inflammatory reaction may occur in any part of the reproductive tract from the pelvic peritoneum to the vulva, including the neighbouring pelvic cellular tissue, the blood vessels, and the lymphatics.

The clinical features present protean variety, as do the results. Complete structural and functional recovery is no doubt the rule, but suppuration sometimes occurs with pus formation in ovary, tube, cellular tissue, or pelvic peritoneal cavity. Sterility is a common sequel, and sometimes a premature menopause is brought about. Short of this, invalidism, varied by acute recurrent attacks of inflammation, is far from rare. Death occurs sometimes so quickly that there is no time for the development of any obvious lesion; while, in other cases, the fatal result is delayed for weeks and months.

How is it possible to bring this large heterogeneous aggregate of conditions within the bounds of one group with a single name? Each case included must present three features—one for each word in the name. It must be puerperal in time, the inflammatory reaction must be pelvic in place, and it must be infective in origin. In the absence of any obvious pelvic lesion, any infective febrile disturbance must be regarded as pelvic infection if no cause for the fever can be found in any other part of the body.

What is the incidence and what is the fatality of such cases? How many of them will be observed in 100 confinements? How many will die?

The only cases carefully recorded, studied, and published are those of the patients delivered within the great maternity hospitals. Those that show clinical evidences of fever are first selected by the application of some arbitrary standard. The cases with ascertainable non-pelvic causes of fever are next excluded. Those with no ascertainable cause of fever are regarded, together with those that present pelvic lesions, as due to puerperal pelvic infection.

To give a single example, the report of Queen Charlotte's Hospital for 1921 deals with 1,700 cases, of which 234 were febrile. Excluding the cases of fever due to nervous reaction, constipation, lung lesions, influenza, mastitis, pyelitis, tonsillitis, eclampsia, tuberculous meningitis, appendicitis, inflamed piles, and other non-pelvic conditions, there remained 134 cases regarded as examples of puerperal pelvic infection out of 1,700 (8.6 per cent.). Two of these patients died (a fatality of 1.57 per cent.).

Throughout a series of years I studied the published annual reports of several British maternity hospitals. The figures vary from year to year, according to the standards of morbidity used, and also with the nature of the cases habitually admitted to each hospital. But if enough reports are collated for several years it appears that pelvic infection occurs in 6 or 8 per cent. of the cases delivered, and that of the patients so infected 3 or 4 per cent. die. In other words, out of 1,000 confinements we may expect 60 or 80 infections and 2 or 3 deaths.

E. Eno¹ has published a careful analysis of 3,500 deliveries in the Pennsylvania College Hospital, with 300 infections and 10 deaths (namely, 8.6 per cent. of infections and 3.5 per cent. fatality). This is a close parallel to the British figures of several years. R. A. Johnston² and R. S. Sidall have written on the same subject as studied in the Johns Hopkins Hospital. They say that "in every 100 spontaneous deliveries there are approximately 19 women who have a temperature of 100.4° F. or more on two successive days." They consider that there is little hope of reducing this morbidity. But they managed to do it themselves. For it occurred to them that too much scrubbing up of the patient with antiseptics in preparation for labour might favour infection. They therefore omitted routine preparation in 44 consecutive cases. Only four of these (9.1 per cent.) became febrile. Preparation was then omitted in every alternate case in a series of 389 patients. Of the prepared 16.3 per cent. became febrile, but of the unprepared only 12.4 per cent.

This observation bears out the well founded and widely held opinion that the indiscriminate use of irritating antiseptics is responsible for many cases of infection in modern obstetric practice. There is a class of antiseptics cheap to make, dear to buy, and strong to smell, which, in dilutions of efficient strength, are too irritating to be applied with propriety to either the exterior or the interior surfaces of the human body. In dilutions weak enough to be comparatively harmless, their use appears to give to midwives and others a sense of false security and satisfaction, probably accounted for by the odour of the preparations in question. But in this odorous fools' paradise there is often neglect of the details of ordinary domestic cleanliness, which are more important than antiseptics in obstetric work.

How many cases of puerperal pelvic infection occurred in England and Wales during the year 1920? There are two ways of roughly estimating the number. The number of births registered in that year was 957,782. Suppose only 7 per cent. of the mothers showed clinical signs of infection, that would mean over 67,000 cases. Again, there were 2,087 deaths from puerperal sepsis registered in that year. There would be about 100 cases for every three of these 2,087 deaths, which would mean over 69,500 cases. In addition to births there are abortions, about two to every seven confinements, and infection is said to be commoner after abortions than after labours at term. Thus we should add at least another 10,000 cases of infection after abortion to get an idea of the total number of cases of puerperal pelvic infection. It would appear that there must have been 70,000 or 80,000 cases in England and Wales during the year 1920.

In antiquity and the Middle Ages it was thought that there was a special fever peculiar to lying-in women, and about the year 1716 this imaginary disease began to be known in this country as "puerperal fever." Referring to the Aberdeen epidemic of 1779-82, Gordon wrote: "I had evident proof of its infectious nature and that the infection was as readily communicated as that of small-pox or measles." Gradually the error of this conception became evident, and by about the middle of the nineteenth century it was realized that there is no special infectious or "catching" fever peculiar to lying-in women, but that puerperal pelvic infection is just the same as ordinary wound infection.

Thus the term "puerperal fever" should have been dropped (except for historical purposes) about 1850, when it was recognized that there is no such disease. But the Registrar-General began to use the term about that time. The continued use of the name seems to have perpetuated the idea; for not long ago a medical officer of health objected to the removal of a case of puerperal pelvic infection to a hospital in a cab, because the cab was a public conveyance!

In spite of the steady advance of knowledge, "puerperal fever" was included with small-pox, scarlet fever, and the like in the Notification of Infectious Diseases Act, 1889, and by the extension of that Act in 1898 the notification of "puerperal fever" was made compulsory. A supplement to the Medical Officer's Report to the Local Government Board gave some interesting figures for 1911-14 for England

and Wales. At that time there were twenty-five county boroughs and counties in which there were more deaths from puerperal sepsis than there were cases notified. In eleven other areas the deaths and the notifications were equal in number. The official report for the year 1921 shows that:

In 10 areas there were 16 deaths and 0 notifications.					
" 28	"	"	114	"	63
" 28	"	"	180	"	180
" 27	"	"	0	"	0
—		—		—	
93		310		243	

There were only 204 areas in all, and in 93 of them the total of deaths was larger than the total of notifications. In the other 111 areas results were not much better, for the general outcome is that there are only about twice as many notifications as there are deaths, instead of some thirty times as many.

When the Act of 1898 says "puerperal fever" it surely means puerperal pelvic infection. If not, what does it mean? When a midwife observes "rise of temperature above 100.4° F. with quickening of the pulse for more than twenty-four hours," she has to call in a registered medical practitioner. If he then decides that the case is one of puerperal pelvic infection presumably he is supposed to notify the case. If this is so, some 70,000 or 80,000 cases might have been notified in England and Wales during 1920, and quite a nice sum would have been transferred from the public pocket to that of the medical profession—not that the public or the patients would have been much the better for it. What a curious fascination "notification" possesses for some minds! Some propose to notify pregnancy, and others venereal disease. They surely know that the notification of tuberculosis is a failure, and should see that if twenty-five years of compulsion has only secured comic figures concerning a respectable condition like puerperal pelvic infection, success is not likely with syphilis and gonorrhoea.

Why is a patient with puerperal pelvic infection taken to a fever hospital? The idea seems to be that if she is left in her own home she is a source of contagion. So she may be if the person who nurses her continues to attend other parturient and lying-in women. But in the cases attended by midwives this possibility is efficiently prevented by the Midwives Act, and other patients have their own monthly nurses and their own medical attendants.

Lying-in women and their friends strongly resent removal to a fever hospital. The family doctor also objects to it. The medical men in charge of the fever hospitals also dislike having to treat cases which are not in their own line. They know the cases are not infectious; they profess no special knowledge of the diseases peculiar to women or of the treatment of pelvic inflammations; nor are nurses trained in fever hospitals accustomed to carry out the local treatment of pelvic conditions.

In certain exceptional cases, generally late in the course of the inflammatory reaction, suppuration occurs and collections of pus form in the pelvic peritoneum, in the cellular tissue, in the tube, or in the ovary. These cases demand surgical intervention, which should be carried out at the time and by the method judged to be most suitable by men who have served their time at work of this kind in hospitals for women. Thus those cases of puerperal pelvic infection which require skilled nursing, experienced judgement, and possible surgical treatment, should be sent, not to fever hospitals, but to hospitals for the diseases peculiar to women, or to general hospitals staffed and equipped so that they can deal efficiently with pelvic cases. With very good technique 'septic and clean' cases can be nursed safely in the same wards. But perfect technique is difficult to maintain, and it is no doubt desirable to have separate "septic" wards with distinct nursing staffs for septic cases, whether they are puerperal or not. This has been done for a long time in the Birmingham Hospital for Women, where the municipal arrangements for the care of puerperal pelvic infection are an example for other cities and towns.

REFERENCES.

¹ *Surg., Gyn., and Obstet.*, June, 1923, p. 797. ² *Amer. Journ. Obstet.*, December, 1922, p. 645.

THE EXTENDED LEGS AS AN ABNORMALITY IN THE FOETAL ATTITUDE.*

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BARBOUR, in the *Anatomy of Labour* (1899, page 187), wrote:

"To sum up as regards the attitude of the foetus, we may say that frozen sections, which give us an opportunity of studying the attitude of the foetus *in utero* with precision, show that there are minor deviations from the classical description adopted in the textbooks. The occurrence of these must be borne in mind, and we must not attribute to labour changes in the relation of the head and trunk which may have been present before labour began."

Similar discernment is my aim under the heading of this communication.

The foetal limbs in relation to the head and trunk in their minor deviations are both frequent and insignificant,

FIG. 1.—A 4½ months male foetus, with extended legs, within the intact amniotic sac.

but in their major deviations attach the designations of extended legs and extended arms.

In the foetal attitude, as an abnormality, extension of the legs signifies full flexion of the hips and full extension of the knees, placing the full length of each of the lower limbs in contact with the corresponding side-front of the abdomen and chest; the foot reaches on each side the face and lower hemisphere of the skull. This abnormality in the foetal attitude is found early in pregnancy.

Mrs. O. D., aged 30, primigravida, gave birth to a 4½ months male foetus at 11 p.m. on August 14th, 1912. The last menstruation ceased on March 27th; the haemorrhage of a threatened abortion at two months continued scantily for three weeks, and then more freely up to the time of the completion of the miscarriage. During the course of the miscarriage her doctor first diagnosed a head, and, forty-eight hours later, a breech, presentation; active foetal movements were felt by the finger introduced into the cervix. The intact amniotic sac contained a male foetus with extended legs. The whole placenta, some blood clot, and a portion of the extraplacental chorion were expelled. (See Fig. 1.) The amnion was relatively flaccid from the transudatory escape of the liquor amnii.

The narrow pole of the foetal ovoid by adaptation presented as an incomplete (the frank) breech—that is, the breech with extended legs. If, as on rare occasions it has done, the wider pole of the foetal ovoid presented as the vertex, the foot and hand of the foetus on each side at the periphery of the head would be palpable per vaginam, but not obstructively overlapping the vertex.

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