An Address ON THE WOMAN DAMAGED BY CHILD-BEARING.*

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THE subject of this address is the case which we all see frequently—the woman who has never enjoyed good health since the birth of her children, and, more particularly, since the birth of her last child. In such cases the last pregnancy or birth is commonly responsible, because, as we know, the factors that make for the chronic ill health are frequently those factors which, at the same time, make for infertility. When a woman gives a history, for example, of one or more pregnancies with a normal spacing in time followed by a lengthened interval of ill health and sterility, the inference is very strong that we are dealing with some pelvic damage sustained at the last pregnancy of the series. Where this sequence follows the birth of one child we have that not infrequent source of marital anxiety, the one-child marriage. It is true that in some of these cases there may be some general medical disability—such, for example, as heart or kidney disease; or there may, of course, be intentional prevention of pregnancy—but in the great majority of cases the source of the ill health-sterility complex is to be looked for in a local damage of the pelvic functions.

This morbidity of childbirth is one of the most important problems that face the profession and the community at the present time. It is responsible for much individual, family, and economic distress, and to those of us who are attached to a hospital this army of shattered lives that swell the out-patient attendances and that crowd our already large waiting lists has become a problem of very serious concern. We know that each year in Great Britain about 4,000 women die during pregnancy and in childbirth. We have no certain knowledge of the numbers who escape death with their health undermined from the same causes. It is probably understating the case to say that, for every woman who dies, at least ten live with their systems scarred, giving on a moderate estimate about 40,000 annually who pass on to recruit this army of ill health, and who later in many cases fall out by the way from disease whose origins in the fact of childbirth are often very imperfectly or not at all revealed on the death certificate.

In the majority of such cases there is obvious damage of the pelvic organs, and, in general terms, the lesions found fall under one or other of two heads: (1) mechanical, (2) infective. For reasons that are not far to seek we often find that the two types of lesion are combined, for lacerations of the soft structures of the pelvis, which end, it may be, in displacements or cicatricial immobilization of the organs, constitute at the time of birth the most important predisposing cause of infection. It thus happens that in such women some of the symptoms are more properly to be ascribed to an alteration in the statics of the pelvis, whilst other symptoms spring from the super-added infection. At the same time we have to note at the very beginning of our survey that, whilst a purely pelvic pathology may in some instances provide a complete explanation of the impaired health, in many more this is by no means the case. In no class of chronic sufferer is there greater need for the broad outlook in diagnosis than in the woman damaged by child-bearing, for the lesions to which she has been exposed are pre-eminently of that kind that tend to spread their effects into both adjacent and remote parts of the body. A vaginal prolapse, for example, may lead to diseases of the urinary, the gastro-intestinal, and the nervous systems; a cervical infection may not only cause a uterine or tubo-ovarian inflammation or be the factor behind a persisting urinary sepsis, but it may be responsible for chronic rheumatism or even progressive heart disease. Again, chronic ill health dating from childbirth

may be a compound of pelvic infection and disease of the gall-bladder with gall-stones—a condition in the causation of which child-bearing and its lesions play an important part.

These few examples suffice to point the lesson that to deal successfully with such cases we must cultivate a comprehensive method of approach. There is no class of patient in whom shoddiness of diagnosis and treatment is more disastrously easy, with its attendant disappointment to patient and doctor. Speaking as a gynaecologist and a specialist, whose limited contact with my patients has often made me acutely conscious of the difficulty in pursuing that ideal approach which I am urging, I would earnestly remind my general practitioner listeners of the privileged position they occupy for the study of these problems with that comprehensiveness which they demand. In the hope that I may help to this end I have in this lecture traced the main varied features of the subject, emphasizing those aspects which experience has shown to be most important.

DISPLACEMENTS AS A CAUSE OF GENERAL ILL HEALTH.

The most common *mechanical* lesion is undoubtedly that group of conditions which fall under the general term of *prolapse*, and which are caused by a stretching or tearing beyond a recoverable degree of the lower margins of the levator ani muscles and the connective tissue that bridge across the bony outlet of the pelvis. The lower parts of the levatores ani spring from the pubis in front, and consist of two strong bellies which pass backwards on either side of the bladder and vagina to encircle the rectum. They control the lower end of the bowel, and hold it and the vagina firmly forwards towards the pubis. When their fibres are torn on one or both sides the rectum and anus and posterior vaginal wall fall backwards and downwards, the genital opening gapes, and through it the vaginal walls, with the bladder in front (cystocele) and, less frequently, the rectum behind (rectocele) are forced downwards, with a stretching and dragging on all the surrounding structures of the pelvis. The prolapse of the lower vaginal wall is apt to be followed quickly by a dragging downwards of the womb and tubes and ovaries. Not infrequently an accompanying birth lesion consists of laceration and infection of the cervix, which is then apt to become tightly cicatrized at the vaginal vault; in these circumstances the uterus is able to withstand the intra-abdominal pressure which is the immediate cause of prolapse, and the lesion then consists for a long time only of the vaginal walls and the adjacent viscera (bladder and rectum).

It is unnecessary for me to discuss the ordinary symptoms of prolapse, for these are well known to you all. In the majority of cases the symptoms begin to manifest themselves soon after the occurrence of the damage to the pelvic floor, and they are especially apt to develop early in the woman who has to resume her work before there has been time for an attempt at natural recovery. In many cases, however, the symptoms do not appear for a considerable time, and in such it is not infrequent for the first manifestations to reveal themselves only after the menopause. The typical symptoms are a feeling of "something coming down," a dragging or bearing-down pain in the small of the back and lower abdomen, frequency of micturition and "exertion incontinence" of urine, and constipation. If there has been a tear extending right through the entire thickness of the perineal body and the lower end of the rectum and anus there is, of course, incontinence of the bowel. In such cases, it is true, there often is little or no prolapse, as if the clean-cut laceration of the structures in the mid-line had allowed the easy escape of the child, and had thus saved the levatores ani on either side from being stretched to bursting point.

I would draw your attention specially to certain other common symptoms, which, although springing originally from the pelvic lesion, have little obvious relation with the pelvis. For this reason their significance, or even their existence, is often overlooked, with resulting errors in diagnosis and treatment of grave moment to the patient. Women with prolapse, for example, will tell you that they suffer from a feeling of exhaustion, which increases as the day goes on, and which is especially severe after exertion. This, added to their bladder symptoms, may make ordinary

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outdoor exercise intolerable. They go to bed overwrought, sleep poorly, and waken up unrefreshed. Their appetite suffers, they become irritable and depressed, and women whose temperament previously had been bright and buoyant may on this score become a source of great annoyance to themselves and their family. These more general symptoms, in which the nervous element is strongly marked, often lead to the poor woman being marked down by her friends and relations, and sometimes even by her doctor, as "suffering from nerves," and this, in its turn, naturally tends to aggravate her symptoms by adding to her troubled mind a further source of worry. My experience of ailing women has long convinced me that in the majority of cases neurasthenia has a physical basis, and that there is no more important contributory cause of this condition than vaginal prolapse. I have seen such women tortured by the attitude of their nearest and dearest, and by their own sense of self-depreciation, and treated by their doctors for functional nervous disorders, the real source of the trouble being meanwhile unrecognized.

Another extremely important point in regard to prolapse is that the longer it is untreated the greater is the risk of the health becoming permanently damaged. In this connexion we have to remember especially that the disturbance of the urinary apparatus may in the course of time lead on to infection of bladder and kidney, and that the constipation caused by the loss of the muscular control of the lower end of the bowel may result in increasing stasis of the intestine with the production of permanent structural changes. Moreover, in course of time the nervous system may become damaged beyond recovery. For all these reasons it is important that prolapse should be treated early.

In many cases the condition can be treated effectively with a pessary, but this must be carefully fitted if it is to be of any use. In slight cases a small ring is sufficient, but in marked cases, and more especially where there is a considerable degree of cystocele, it is better to use a large instrument of oval shape, for at its lower end this forms a shelf for the bladder. By plunging a vulcanite ring for a few seconds into boiling water it can be softened sufficiently to allow of its being compressed to the desired shape. Rubber instruments should never be used, since they quickly corrode, producing crevices and spaces in which the vaginal discharges accumulate and putrefy. On the whole, unless the patient can be trusted to douche the vagina twice or thrice weekly, and to report at intervals of two or three months to have the instrument removed and cleaned, the pessary regime is unsafe, and operative treatment, consisting of a lifting up and a fixation of the bladder at a normal level and a repair of the damaged pelvic floor behind, should be carried out.

The other common class of displacement of the uterus, *retroflexion*, frequently owes its origin to childbirth, especially if there has been any infective complication which has prevented the healthy involution of the uterus and its supporting ligaments. Under these conditions the uterus remains permanently enlarged (subinvolution), and it does not recover its normal position. On the other hand, apart from the sterility or the tendency to abortion which the displacement may cause, the symptoms so commonly associated with retroflexion, such as menorrhagia, dysmenorrhoea, leucorrhoea, and dyspareunia, are usually caused not by the abnormal uterine position, but by the associated chronic infection. For these reasons an operation for the replacement of a retro-deviated uterus is required only on comparatively few occasions. We see many cases in which failure to appreciate these facts has led to operations that bring no relief. Treatment of an infected cervix and curettage for the menorrhagia may be all that is required. Where, on the other hand, the womb is greatly enlarged and forms a tender tumour pressing on the bowel, causing constipation and pain on defaecation, dyspareunia, and pain in the lower abdomen and back, an abdominal operation for replacement and forward fixation is necessary. This at the same time allows of the treatment of the tubal and ovarian disease, which is often present in such cases, and which may be responsible for adhesions that fix the uterus in its backward position. Where the uterus is mobile and can be lifted forward a tentative trial of a pessary enables

us to gauge how far the symptoms have been derivable from the retroflexion alone in those cases where otherwise the diagnosis is not quite clear. In this way we get an indication as to how far an operation is likely to be helpful. If the retro-deviation is recognized in the puerperium, reposition of the uterus and the use of a pessary for a few months may be followed by cure of the condition.

STRAINS OF THE SPINAL AND PELVIC JOINTS.

Another common mechanical disability dating from childbirth or child-bearing consists of *strains of one or more of the articulations of the spinal column and pelvis*. These strains are a frequent cause of chronic pain and discomfort, and, as they often remain undiagnosed and untreated, they constitute a fertile source of persisting ill health. The joints apt to be so affected are the sacro-iliac, the lumbo-sacral, the sacro-coccygeal, and the symphysis pubis. Whilst strains of these articulations are by no means uncommon in nulliparous women and in men, where trauma and faulty posture play an important part, there are present during pregnancy and childbirth certain influences which peculiarly tend to their production. The first of these factors is the softening of the ligaments and the increased mobility of the joints found at these times; the second is the marked alteration in the spinal posture which the pregnant woman tends to assume, and the third is the stretching of the ligaments and the excessive movement of the joints which may occur during labour, especially when there is mechanical difficulty arising from undue size of the child or other cause. To these factors must be added such common individual defects as arise from general loss of tone and muscular and structural flabbiness, which lead to an aggravation of the changes resulting from postural or parturient causes, and which, in such women, may easily result in structural alterations.

Sacro-iliac and lumbo-sacral strains are a frequent cause of low back pain, situated over the affected joint or spreading into a broad area of the "small of the back." The pain frequently extends into the iliac fossa and groin, across the buttock and down the back of the thigh. It is present during standing or sitting, and it is unrelieved by lying down, whilst it is aggravated by stooping and by lateral movement of the trunk; these movements may be restricted. There is tenderness on pressure over the affected joint. In sacro-iliac strain pain may be felt in the joint when the thigh is flexed on the abdomen with the knee straight, whilst in lumbo-sacral strain full flexion of the thighs with bent knees causes pain. In severe cases there may be lameness.

It is important to remember that these orthopaedic lesions, by causing pain and discomfort in the back and lower abdomen, may easily lead to an erroneous diagnosis of gynaecological disease, appendicitis, or kidney disease. The confusion in diagnosis is still further increased when, as not infrequently happens, the strained joint is accompanied by disease of the pelvic organs. In the presence of prolapse, for example, which is a common cause of low back pain, the existence of a sacro-iliac or lumbo-sacral strain may easily be overlooked. We have further to recognize the possibility that a gynaecological or abdominal lesion—for example, visceroptosis—by establishing a fault in posture or by inducing a general hypotonus, may be the primary factor behind the strained joint. A recognition of all these facts has led, on the one hand, to the discovery that much of the suffering which has persisted in the past after our plastic operations for prolapse and our abdominal operations for pelvic disease is to be traced to an accompanying and undiagnosed static disorder. On the other hand, it has forced us to the view that treatment of a damaged joint, if it is to be successful, should be accompanied by treatment directed to any associated gynaecological or general abdominal condition.

The treatment of sacro-iliac and lumbo-sacral affections to be effective must be prolonged and carefully supervised, and consists of rest in bed for several weeks in a posture aiming at easing the strained ligaments, the application of hot fomentations over the joint, and, later, the use of prescribed exercises and the provision of a well-fitting brace or belt. In working-class and poor women such lengthy treatment is usually impossible, and we then have

to be satisfied with the support given by strips of adhesive plaster extending round the pelvis and placed above the level of the trochanters, or by the application of a belt. In addition to these measures any local pelvic disease should be treated and dietetic and hygienic procedures instituted with the object of increasing the general health. In aggravated cases with dislocation of the joint manipulation under anaesthesia may be required.

The following case is a typical example of unrecognized sacro-iliac strain associated with, and probably secondary to, abdominal and gynaecological disease.

A nullipara, aged 43, fifteen years ago (in Canada) underwent removal of the right and partial removal of the left ovary for severe dysmenorrhoea. Her condition was greatly improved. Four years ago she was operated on for right inguinal hernia, and two years ago for gall-stones. For four years she had constant incapacitating low back pain, frequent and painful micturition, and much abdominal distress with attacks of recurring pain. The uterus was large, retroflexed, and tender. An operation was performed for intraperitoneal shortening of the round ligaments. Following this the bladder and abdominal symptoms were relieved, but the backache was unimproved. Re-examination and x-ray photograph showed faulty posture with marked lumbar lordosis and tilting back of the sacrum, and evidence of sacro-iliac and lumbosacral strain on the left side. Manipulation under gas anaesthesia was carried out by Mr. Cochrane, and followed by rest in a prescribed position and local application of hot fomentations for two weeks; a brace was fitted to hold the shoulders forwards and the pelvis and lower abdomen back. These measures resulted in a cure of the condition.

Strain of the pubic symphysis during labour is a not infrequent cause of pain over the joint in the early puerperium, but it has usually passed off by the time the patient is ready to get out of bed. In rare cases the condition may persist, and in some instances it may cause serious discomfort lasting for many weeks or months and necessitating prolonged rest in bed. The treatment consists in immobilization of the joint by adhesive plaster placed in broad strips round the pelvis and worn for some weeks after the patient is allowed to get up. *Strain of the sacro-coccygeal joint* may cause long-persisting pain which is aggravated by sitting, and is especially marked in cases where there has been a backward displacement and fixation of the coccyx in a position which causes its point to project under the skin. The treatment consists in forcible reduction of the displacement and rest in bed till the bone becomes fixed in a normal position. In some cases excision of the coccyx may be necessary.

Before leaving the consideration of the conditions arising from mechanical damage I would refer briefly to a rare lesion of which I have seen only one example—namely, *fracture of the pelvis during labour*.

The patient was a 4-para, aged 35, who since the instrumental birth of a baby weighing 11½ lb. four years previously had suffered from severe pain in the small of the back and lameness affecting both legs. Since then she had been a cripple, being able to walk only with difficulty and with the aid of two sticks. On x-ray examination she was found to have fractures of the transverse and descending rami of the pubis on both sides and a series of fractures of the iliac bones radiating from the sacro-iliac joint on each side. There was, in addition, a severe degree of osteoporosis of the pelvic bones and of the shafts of the long bones; the skull was not involved. The condition was diagnosed as one of defective calcium metabolism with bony absorption due to deficiency diet, and treatment including the administration of cod-liver oil and artificial sunlight was instituted.

I have records of a further case showing marked disturbance of locomotion with a waddling gait in an unmarried girl of 19 years, in whom x-ray examination revealed osteoporosis of the pelvic bones. Under a general dietetic regime and the administration of cod-liver oil the condition has returned practically to normal within a few months.

These cases demonstrate the role of deficiency disease in the production of osseous lesions of the pelvis.

INFECTION OF THE PELVIC ORGANS AS A CAUSE OF CHRONIC ILL HEALTH.

Infection dating from childbed may involve any part of the pelvic area, but the most common lesion by far is *infection of the cervix*. It is only within recent years that the importance of this lesion has come to be appreciated. It is recognized by the soft, pulpy feeling, and, on examination with the speculum, by the deep congestion of the mucous membrane surrounding the external os, although the lesion is, of course, more deep-seated. The starting point of the trouble is often an imperfectly healed laceration.

Enlargement of the cervix from general congestion and fibrous thickening is common. Blockage of the tubules of the cervical glands leads to distension of the acini by a thick infected mucous secretion to form the so-called Nabothian follicles, which are felt as hard nodules and frequently show on the surface as small raised greyish points. A chronically inflamed cervix often bleeds on being touched, and this, added to the hardening produced by the fibrosis and the Nabothian nodules, may lead to an erroneous diagnosis of cervical cancer.

The cardinal symptom of chronic cervicitis is "whites," and sterility is common. In many cases it may cause little further disturbance of the pelvic functions or of the general health, whilst in others it is a source of much pelvic discomfort and chronic disability. Disease of the cervix itself does not cause pain, but cervicitis, by leading to a persisting infection in the surrounding cellular tissue, is one of the most frequent causes of that commonest of all chronic pelvic symptoms—pain in the left iliac fossa. It is also a fertile source of pain in the right side and in the sacral area. The relationship between the cervicitis and the pain in these areas can often be brought out in a striking manner by the simple expedient of putting the corresponding tissues on the stretch. If, for example, the cervix be pushed over to the right side, a left iliac pain caused in this way can be reproduced accurately. So, in chronic utero-sacral cellulitis, a fairly common sequel of cervicitis, by pushing the cervix forwards we immediately elicit the sacral pain and the sense of discomfort often felt by such patients when the bowels move. The fibrosis and cicatricial contraction following these cellulitic deposits may lead to the cervix becoming immobilized and displaced in the direction of the scar.

Infection of the cervix is a further source of trouble in that at any time it may spread upwards into the uterine body, and thence—or perhaps more commonly by extending via the veins or lymphatics—it may involve the tubes and ovaries. Furthermore, as we believe, chronic cervicitis is a common precursor of malignant disease.

For all these reasons cervical infection should always become the object of active treatment, the best method we at present have at our disposal being a thorough opening up of the inflamed areas with the cautery. This allows of drainage of the infected and distended glands and of the pent-up sepsis in the cellular tissue. Thereafter the daily introduction of a tampon containing ichthylol (10 per cent.) in glycerin should be carried out for two or three weeks. To avoid staining of the clothes with the ichthylol a thick diaper should be worn. In severe cases two or three cauterizations at monthly intervals may be necessary. Where there are cervical lacerations these should be repaired. Where the cervix is markedly enlarged from deep-seated infection the best treatment often consists in amputation.

We have next to consider a fairly common group of cases in which the pathology is ill defined, but in which a chronic infective factor seems to predominate. They consist of parous women typically nearing the age of the menopause, although they may be much younger, in whom the dominating symptom is excessive menstrual loss, often with much clotting of the blood, and frequently, in addition, irregularity of the periods and intermenstrual bleeding. Leucorrhoea and dysmenorrhoea are common, and debility and anaemia from the blood loss are frequently present. On examination the cervix is often found to be lacerated and chronically infected and the uterine body to be large and tender. There is no evidence of a fibroid growth in the uterus, and the existence of mucous polypi or malignancy is excluded by curettage. Curettage gives no relief. Largely as a result of this process of exclusion with, in addition, the frequent evidence of an infective element and chronic ill health dating from childbed, these cases are often thrown into the category of chronic inflammation of the uterine body or *chronic metritis*. In some cases the symptoms may in reality spring from ovarian dysfunction. They require active treatment on account of the excessive blood loss, and in many instances this can be effectively and safely carried out by the introduction of 30 mg. of radium into the uterus for four days. This induces an artificial menopause, and has the advantage of obviating

the risks incidental to an operation for removal of the uterus. In the absence of radium, hysterectomy is the only alternative.

Chronic inflammation of the tubes and ovaries dating from childbed infection is a fairly frequent cause of persisting invalidism, revealing itself in iliac fossa premenstrual dysmenorrhoea, chronic lower abdomen pain, sterility, menorrhagia, dyspareunia, and leucorrhoea. It produces tender inflammatory masses felt behind and to the sides of the uterus, which is usually enlarged, immobilized, and often retroflexed. There are general systemic symptoms, such as dyspepsia, headaches, loss of weight, etc. It is important to remember that chronic tubal and ovarian disease frequently follows a puerperal infection so mild in its onset that there may be little or no history of acute symptoms or fever in the puerperium. In such cases the origins of the trouble are to be found in the history which the patient gives that she has never been fit since the last miscarriage or labour. "Acute exacerbations" of the symptoms may occur, although they are not so common in puerperal as in gonococcal salpingitis, where we now recognize that the typical tendency to recurring acute attacks is dependent usually upon reinfection. In some cases the ascending infection may arise primarily in a diseased cervix, and in these a sort of reinfection may continually be going on. In some instances a puerperal infection consists in reality of a pre-existing more or less quiescent gonorrhoea, which flares up as the result of the trauma of labour and the opening up of fresh raw surfaces.

The treatment of salpingo-oophoritis should in the first place always be palliative. The infected cervix is first dealt with, and thereafter the diseased appendages are treated by rest, attention to the bowels to relieve pelvic congestion and local pressure, douching, and plugging with some such material as ichthylol in glycerin. A mixed vaccine containing streptococcus and *B. coli*, given in doses below the reaction point and administered over a period of several months, is often useful. Under such measures clinical recovery may sometimes be looked for, although functional recovery with an opening up of blocked tubes is much less certain. Where the local or the general symptoms persist operative removal of the diseased appendages is called for.

Sterility.—In many cases of chronic infection of the genital organs the consideration of greatest moment to the patient and her husband concerns the possibility of further pregnancies. The doctor is often asked to give an opinion on the prospects, and in any treatment to be carried out the chance of conception which this will give often weighs largely with the patient. At the outset we have to remember that it is always necessary to give a very guarded prognosis, because experience teaches that a period of sterility following chronic infection frequently implies a permanent loss of function. At the same time the outlook must necessarily depend on the degree and site of the damage. Thus, in that most common infective lesion chronic cervicitis, which is a common cause of sterility, pregnancy not infrequently follows active local treatment. The reposition of a retroflexed uterus, and its suspension with a vaginal pessary, is also sometimes followed by pregnancy. The outlook is gloomiest in cases of tubal infection, for whilst it is true that chronically infected and blocked tubes may become spontaneously recanalized, as witness the occurrence of tubal pregnancy in such cases after a period of sterility, in the majority of instances the fine structure of the tube is damaged beyond repair. In some cases an abdominal operation for the purpose of liberating the adherent tubes and ovaries and the making of a new ostium in closed tubes (salpingostomy) may be followed by pregnancy. Where, on the other hand, the destruction of tissue is great, the chances of functional recovery are negative, and such operations as that which consists in insinuating the ovary with its mesentery into the uterine cavity through a hole made in the cornu are still too untried to be generally justifiable. It should be mentioned that, short of operation, a certain amount of accurate information regarding the condition of the tubes can be obtained by two methods recently added to our

diagnostic procedures—namely, the insufflation of the tubes from the uterus by means of air or carbon dioxide under pressure, and the injection of some opaque fluid (for example, lipiodol) into the tubes via the uterus, followed by an x-ray photograph. By these methods the existence and the site of a tubal block can be recognized, and their practice is sometimes followed by pregnancy, probably owing to the gas or fluids having dislodged some obstructing discharges lying in the tubes.

Finally, we have to remember that infection of the pelvic organs must always be considered in our hunt for sources of focal sepsis in cases of chronic rheumatism, chronic heart disease, etc. The two following cases illustrate this point.

1. A 3-para, aged 37, had suffered from chronic ill health since childbirth nine years previously. Of the last two years she had spent eighteen months in hospital for valvular heart disease and progressive rheumatoid arthritis with marked deformity of wrists, elbows, ankles, and knees. Leucorrhoea was discovered on the last occasion in hospital. The cervix was found to be very septic and was amputated. This was followed by rapid improvement in the condition of the joints and in general health.

2. A primipara, aged 34, with a progressive painful rheumatoid condition of the wrists, fingers, and ankles of several years' duration. Leucorrhoea was present, together with a "granular" vaginitis secondary to infection of the cervix and uterine body. Panhysterectomy was performed. Within a few days improvement set in and increased progressively thereafter. Within two months the vaginitis and leucorrhoea were arrested and the swelling and tenderness of the joints gone. Movement and use of the limbs were being recovered fairly rapidly.

GENERAL CAUSES OF ILL HEALTH.

The conditions previously brought under review in this address, although entirely local in their origin and often predominantly local in their symptomatology, may initiate a pathology which spreads its ravages beyond the pelvis to almost any system and region. Thus we have seen that prolapse frequently causes gastric and intestinal dyspepsia, involvement of the urinary tract, and nervous phenomena, and the same is also markedly true of chronic pelvic infection. In the majority of cases of pelvic infection we find irritability of the bladder with diurnal and often nocturnal frequency. There may be an associated bacilluria and pyuria, although not uncommonly the urine is free of abnormal constituents. Whether this involvement of the urinary tract is due to a direct spread of the inflammation across the tissues intervening between the infected area—for example, the cervix, and the bladder and ureter—or whether it is a blood-borne infection it is difficult to say. Furthermore, chronic pelvic infection may constitute the causal factor in cases of rheumatism and heart disease, whilst both puerperal sepsis and the toxæmias may produce brain lesions that persist in the form of mental impairment or even actual insanity. We have, further, to remember that there are a variety of antecedent diseases, such as gonorrhoea, pulmonary phthisis, heart disease, and Bright's disease, which are specially liable to suffer exacerbation by the fact of pregnancy or the strain of labour, whilst there is hardly any taint which is not apt to be augmented by an abnormal pregnancy or the debility following a complicated labour which saps the general resisting powers of the patient.

A class of disease often with obscure symptomatology but with pointers towards an origin in an *endocrinal abnormality* is not an uncommon legacy from pregnancy and childbirth. Space will allow of only a brief reference to this extremely interesting and at the same time intriguing type of disorder, which constitutes a field in which further data remain to be gathered. A common complex includes amongst its salient features an increasing general adiposity, dryness of the skin, thinning and falling out of the hair, scantiness, suppression, or irregularity of the menses, and a low basal metabolic rate—features, in other words, suggestive of a hypothyroidism, with perhaps a superadded ovarian deficiency. In other cases the appearances are more suggestive of a pituitary syndrome. Many of these patients have obvious pelvic lesions, and it is not improbable that the endocrinal upset is usually secondary to pelvic sepsis. Hence it is necessary to treat the local factors in addition to the exhibition of the appropriate

gland products (ovarian, thyroid, pituitary). The following case may be quoted in illustration of these conditions.

A primipara, aged 28, since the birth of a child two years previously, which was nursed for seven months, had never felt well. There was complete amenorrhoea, and she complained of leucorrhoea. She gained nearly 3 st. in weight. The skin was dry, and the hair falling out. On examination she was found to have marked cervical infection; otherwise there was nothing abnormal in the pelvis. The cervix was treated, and half a grain of thyroid extract administered night and morning. Within two months the weight was reduced by 1 st. and menstruation resumed.

A still further cause of loss of health following child-bearing is found in the dregs remaining behind after pregnancy pyelitis and toxæmia. In the production of pyelitis, stasis in the ureter due to the pregnant state is an important predisposing cause, and there is usually a rapid recovery from the symptoms after delivery, but, on occasion, active infection of the urinary tract may remain, causing pain and tenderness in the kidney area and abdomen, frequency of micturition and dysuria, recurring pyrexia, and pyuria. In some cases the condition first reveals itself in the puerperium. It is important in all such cases to make a careful search for areas of focal sepsis, as this factor is known to play an important part in the initiation and perpetuation of infection of the urinary tract. Another lesion of the urinary tract, to which Hunner has recently directed special attention, is *stricture of the lower end of the ureter* with dilatation of its upper section and of the renal pelvis. Whilst predisposed to by child-bearing, it occurs not infrequently in childless women. In some cases it is associated with infection. Its chief symptoms are backache high up in the flanks, pain and tenderness over the corresponding side of the abdomen, and frequency and pain on micturition. The urine may be normal, or may reveal nothing but an occasional red blood cell or leucocyte. The pain, especially at first, may be definitely menstrual in its timing, and if situated, as it commonly is, in the iliac region, it may suggest a gynaecological source. In other cases the occurrence of nausea and sickness may lead to an erroneous diagnosis of appendix, gastro-intestinal, or gall-bladder disease. Such errors may lead to faulty treatment and to futile operations. In other cases the stricture of the ureter is combined with gynaecological or other disease. The condition is revealed by the existence of an obstruction to the passage of a bougie and by a pyelographic examination following the injection of an opaque fluid. The treatment consists in dilatation of the stricture in one or both ureters by means of a bulbous ureteral bougie. At the same time any local pelvic lesion that may be contributing to its production—for example, cervicitis or cellulitis—should be dealt with. According to Hunner a not uncommon causal factor is focal sepsis in the teeth or tonsils, and this, if found, must receive attention.

Pregnancy toxæmia, like pyelitis, is usually recovered from quickly after the birth of the child. In some cases, however, especially in women who have had a recurrent series of toxic pregnancies, the acute kidney lesion may pass over into chronic kidney disease. In such women chronic cardio-vascular lesions, as manifested by persisting hypertension, arterio-sclerosis, and hypertrophy and dilatation of the heart, are commonly present as well. In a recent communication¹ I have shown that in about 50 per cent. of cases pregnancy toxæmia (eclampsia, albuminuria) recurs in succeeding gestations, and that in women with this taint the risk of permanent cardio-renal lesions increases with each succeeding pregnancy. For this reason women who have had two toxic pregnancies should be instructed to avoid further pregnancies, whilst, in the event of conception again occurring, they must become the subject of very strict ante-natal supervision.

I must not take leave of our subject without a reference to the influence of child-bearing on *gall-bladder disease*, which constitutes a fertile source of chronic invalidism in women, especially in the middle and later periods of life. It is well known that gall-stones are two or three times commoner in women than in men, and that the main factor behind this high female incidence is multiparity. In attempting to explain the bearing of pregnancy on this tendency to cholelithiasis we have three possible factors to consider, which may operate singly or in combination.

The first is the high cholesterol content of the blood in pregnancy, and which in the last months is about twice the normal (Moynihan).² The second is the tendency to the occurrence of stasis in the biliary ducts during pregnancy. The third is the frequency with which women who have borne children suffer from focal sepsis in the pelvic, urinary, and other regions. There is reason for the belief that infection of the gall-bladder usually precedes the deposition of stones, and that this infection may reach the gall-bladder from some such distant source. Gall-bladder disease is notorious for the frequent obscurity of its symptomatology. Where it is associated with local pain and tenderness, recurring biliary colic, and jaundice its recognition is easy. Often, however, these cardinal features are absent, and its presence will be missed unless it is brought under suspicion in all cases of parous women, especially those tending to obesity, who suffer from chronic ill health, dyspepsia, and vague abdominal symptoms. It is a common accompaniment of chronic gynaecological disease.

CONCLUSION.

The woman suffering from chronic ill health dating from childbirth is frequently the subject of multiple lesions. Failure to carry out a comprehensive investigation of the various systems may lead to an imperfect diagnosis, resulting in operations and other forms of treatment that bring little relief.

REFERENCES.

- ¹ *British Medical Journal*, January 19th, 1929, p. 91. ² *Ibid.*, February 28th, 1925, p. 393.

THE DIAGNOSTIC VALUE OF THE PLANTAR RESPONSE IN INSULIN COMA.

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RECORDS of the plantar reflexes in insulin hypoglycaemia are rare. Emmons¹ was apparently the first to report an extensor response in a case of insulin coma during the period preceding recovery. Elliott and Walshe,² in comment on Emmons's case, suggested that the state of the plantar reflexes might be of great value in distinguishing between ordinary diabetic coma and that due to hypoglycaemia, but they could not supply the necessary clinical evidence. Pemberton³ then reported a fatal case of insulin coma, in which an extensor response was obtained, persisting up to within a few minutes of death. On the other hand, a flexor response was recorded by Graham⁴ in a case of temporary hemiplegia without coma, the result of insulin overdosage.

In the two cases of insulin hypoglycaemia described in this paper an extensor response was observed while the patients were comatose. As consciousness returned the extensor response faded, the plantar reflexes becoming flexor in one case and inexcitable in the other.

It seems to us that these cases now suffice to provide the evidence required to establish the clinical value of this physical sign as a means of distinguishing between the two states of coma in diabetics.

CASE I.

The patient, a man aged 70, was admitted to the Royal Northern Hospital on November 24th, 1928, suffering from severe diabetes of at least three years' duration. Two years previously he had been taken to an infirmary in insulin coma, but there had been no recurrence of this complication.

On admission his general condition was good, in spite of loss of weight. The urine contained sugar and acetone bodies in considerable amount. He was given a generous diet with 10 units of insulin morning and evening. On November 27th the blood sugar three hours after insulin and breakfast was 0.24 per cent., and accordingly the dose of insulin was increased.

At 11.30 a.m. on December 2nd the patient rose as usual for his bath, but on getting out of bed felt giddy, and fell against his locker. He was put back to bed. At 12.40 p.m. he collapsed, becoming breathless, cold, and clammy. He was able, however, to drink 7 ounces of 5 per cent. glucose, while 10 minims of