cannot be seen. It is a very difficult thing sometimes to tell when a patient's condition is due to loss of blood and when it depends on the shock of pain or of such an accident as the rupture or strangulation of bowel, but there is a steady progression of the adverse signs in the case of hæmorrhage which is, I think, characteristic.

The chief points then, are previous good health, perhaps a little irregularity of menstruation, very sudden and increasing collapse, with possibly a small swelling felt at the side of the uterus. There may be a history of recent slight attacks of pain and faintness and a deciduous membrane may have been discharged. Such evidence would aid in making a definite diagnosis of extrauterine foetation, but the medical man may find that there is little or nothing to guide him to a diagnosis except the symptoms of hæmorrhage.

DIFFICULTIES IN DIAGNOSIS.

It is obvious that as the history is so important an aid to the recognition of an extrauterine foetation, especially in its earlier stages, the difficulty in identifying this condition must be greatly increased if it occurs after irregular menstruation of long standing. Then the diagnosis must depend mainly on the physical signs and symptoms. The symptoms may not be very urgent or definite, and an encapsuled mass of blood in the pelvis, unless there were rapid changes in its size and shape, would be very difficult to differentiate from other pathological states. It is only very rarely that we can be sure under such circumstances that the mass felt is not of long duration. In the following case, for instance, I had no suspicion that the patient had an extrauterine conception.

Last August a woman was sent to me, 40 years of age, married twenty years and with two children, the younger of them being 18 years old. She was unhealthy looking, and had complained of uterine discharge and menstrual irregularities for fifteen or sixteen years. She had been seized with sudden illness some weeks before I saw her, and on examination a big mass was found in the pelvis. When the febrile symptoms and pain with which she had been attacked had subsided she was sent up to see me from the country. There was a rounded tumour, filling Douglas's pouch, and fixed there. I thought from the history that it was probably an ovarian tumour which had become inflamed in consequence of twisting of its pedicle, or that there might be a large abscess in the left Fallopian tube. I recommended operation, and found that the mass was a collection of encapsuled blood due to rupture of the Fallopian tube.

In connection with the important evidence of the existence of an extrauterine foetation which is afforded by the expulsion of a deciduous membrane, it is well to remember that some women form and throw off a decidua with almost every period.

TREATMENT.

If a profuse hæmorrhage is diagnosed, no avoidable delay in resorting to surgical interference is justifiable. Nothing else will save the patient, and she may be almost certainly saved by prompt removal of the affected tube. The question may arise as to whether the patient is too ill to be operated on, but the worse she is the more urgent is the need for arresting hæmorrhage. The operation should, of course, be supplemented by saline transfusion, the two operations being performed as nearly simultaneously as possible.

When slighter hæmorrhages occur, complete rest may lead to absorption of the blood and the patient may have no more trouble, but where there are evidences of repeated hæmorrhages it may be better to operate and avoid the risk of further complications.

When the child is believed to be alive I consider the proper treatment to be to remove it by operation without delay. If the condition is diagnosed before the tube bursts the operation should be simple and safe, and there cannot be any object in waiting to see how much hæmorrhage will take place or whether the pregnancy will go on to term. Later, if the foetus has escaped the dangers connected with the rupture of the Fallopian tube, to delay in operating is still to wait to see if a worse thing will happen. Under any and all circumstances it seems to me that, so long as the embryo is alive, danger must increase, and the risks of an operation must become greater with delay, whilst there is no reasonable prospect of avoiding an operation altogether. The only circumstances in which I should be inclined to waver in advising immediate operation when the child is alive would be those in which a pregnancy had advanced to the end of the sixth or the seventh month and it was considered desirable to save the life of the child at some risk to that of its mother. If, however, I were to sanction delay under these conditions I should state very

clearly that I considered the risk to the mother to be increased by the waiting, and I should leave to the patient and her relations the responsibility of deciding in favour of postponing the operation.

It has been recommended that at term surgical interference should be put off until after the child is dead, so that the placenta may die and the risks of hæmorrhage may be avoided. Sometimes, however, the placenta may be easily removed by operation without loss of blood, if, for instance, it is mainly attached to the broad ligament and omentum. Undoubtedly difficulties from hæmorrhage may be very great. Notwithstanding this, it seems to me that any advantage gained in making hæmorrhage less likely by waiting till the child is dead will be fully counterbalanced by the extra risk of strong adhesions forming to the intestines in consequence of the presence of a dead foetus and amnion amongst them. I have already pointed out that the living amnion and foetus seem to cause little irritation.

The advice to operate with all convenient expedition on every case of extrauterine gestation in which the child is believed to be living may not meet with universal approval. But I have no hesitation in urging that to watch a living foetus developing outside the uterus will in a very great majority of cases, if not in every case, expose the patient to greater risks than those of an operation.

REFERENCES.

¹ Playfair's *Midwifery*, 1878, p. 95. ² *Loc. cit.*, p. 96.

THE DIAGNOSIS OF CANCER OF THE WOMB.*

By FREDERICK J. McCANN, M.D., C.M. EDIN.,
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It has now been proved beyond doubt that if cancer of the womb be diagnosed at a sufficiently early stage in its course it can be cured by operation. I will first narrate a typical example of cancer affecting the neck of the womb, and then indicate some of the pitfalls in diagnosis.

A married woman, aged 54, was admitted into the Samaritan Free Hospital under my care on July 13th, 1896.

History.—At the end of February, 1896, she noticed a discharge of blood from the vagina, which continued daily until her admission into hospital. It was never offensive. She did not complain of any pain, and was always able to work, but was losing flesh. The menopause had occurred seven years previously, and she had had no blood loss until her present trouble commenced. She had had five children (twins twice) and two miscarriages. She was fairly well nourished, with no cachexia. Her appetite was good and she slept well.

On bimanual examination the uterus was found to be freely movable. There was no infiltration of the broad ligaments. A nodular growth was felt involving chiefly the posterior lip of the cervix, and extending upwards into the cervical canal. The appearance of the growth by the speculum suggested malignant disease, the surface bleeding readily when touched.

Operation.—On July 17th I performed vaginal hysterectomy. The operation occupied thirty-five minutes. The patient recovered and has remained free from recurrence. The growth was proved by microscopical examination to be a columnar-celled carcinoma.

Hæmorrhage.—This case illustrates the importance of hæmorrhage as an early sign of cancer of the neck of the womb. The bleeding may at first be small, occurring only after sexual intercourse. Later it may be evidenced by increased menstrual flow, and when this ceases a sanious watery discharge remains. In other cases a somewhat profuse bleeding suddenly occurs which may be regarded as a miscarriage. If, however, bleeding appears after the menopause a thorough examination of the pelvic organs should be made, as this is always a sign of some pathological process. The same is true of the profuse hæmorrhages which occur at the climacteric.

There is still a widespread belief that the great sign of cancer of the womb is a putrid discharge, but in early cases the discharge is not foul smelling, and the septicity of the discharge indicates sloughing of the cancerous surface, due either to an advanced stage of the disease, or to infection by fingers, syringe, or other instruments. In fact a cancerous growth may attain considerable proportions without causing any foetid discharge. The foetus is due to

* A paper read before the North London District of the Metropolitan Counties Branch of the British Medical Association.

infection with septic organisms, and is no part of the cancerous process.

Pain is a late symptom of cancer. Women, especially among the lower classes, will disregard hæmorrhage and putrid discharges; but pain, especially if it interferes with sleep, prompts the sufferers to seek relief. Unfortunately, however, pain, if at all severe, indicates that the disease has spread to the pelvic peritoneum and cellular tissues, and that it is too advanced for eradication.

Wasting and cancerous cachexia are the result of pain, sleeplessness, hæmorrhage, absorption of septic discharge, and possibly also of some product produced by the cancerous growth.

Later signs and symptoms of cancer are due to the spread of the disease. They are bladder troubles and fistulæ (recto-vaginal and vesico-vaginal), blocking of the ureters, followed by hydronephrosis and uræmia; pressure on the iliac veins, causing thrombosis, and swelling of one or both legs.

Death occurs from marasmus, uræmia, or peritonitis in one to two and a-half years in untreated cases.

DIAGNOSIS.

I will now indicate some common mistakes in diagnosis, choosing for this purpose cases which have been sent to me under the impression that they were cancerous.

1. *Cervical erosions*, especially the cockscomb-like erosion which hangs from the cervix and bleeds readily when touched. An early cancerous growth has a sharp, prominent, clearly-raised, and somewhat infiltrated margin; the base is irregularly nodulated; it is raised above the surface, and is yellowish-pink in colour. The erosion is bright red, tears very readily, and has no hard or infiltrated edge.

2. *Mucous polypi* occurring in women after the menopause, with ulceration and sloughing of the surface. A case of this kind was sent to me under the impression that the patient had advanced cancer. Three polypi were found hanging by a stalk from the cervix; their surface was ulcerating, causing an offensive purulent discharge. The discovery of the stalk and the appearance of the polypi settled the diagnosis. The stalk was ligatured and the polypi removed.

3. *Chronic endocervicitis*, with plugged follicles (Nabothian ovules), causing hardness of the cervix and irregularity of the external os uteri. Puncture of the follicles with a knife, allowing the escape of the glairy mucoid contents, will settle the diagnosis.

4. *Fibromatous polypus*, with sloughing of the surface, causing a profuse stinking discharge, is frequently mistaken for malignant disease. If, however, a careful local examination be made, the polypoid nature of the swelling, together with the fact that the surrounding neck of the womb is healthy, will exclude malignant disease.

5. *Fungous endometritis* (uterine adenoids), when the hypertrophied nodules project through the external os uteri, has caused errors in diagnosis. Here it will be necessary to explore the uterine cavity, and also to examine portions of the growth. Such cases, however, are more apt to be mistaken for cancer of the body of the uterus.

6. I had a patient sent to me supposed to have a cervical myoma. The cervix was enlarged, having on the left side a swelling which certainly felt not unlike a small myoma. The external os was a little expanded, and on introducing the finger it entered into a crateriform cavity, which extended in the direction of the left broad ligament. This then was an example of cancer beginning in the cervical canal. It is the most malignant form affecting the neck of the womb, because the growth is in the direct line of the lymph channels which run in the base of the broad ligaments, and moreover the disease is usually well advanced before it is detected. In such cases it is necessary to insinuate the finger into the cervical canal, or if necessary to dilate the external os in order to facilitate the introduction of the finger.*

CANCER OF BODY OF UTERUS.

I shall now narrate a case of cancer of the body of the uterus.

* The appearance of cancer affecting the cervix uteri was demonstrated on a series of specimens removed by the writer. Three main clinical types may be distinguished: (1) Where ulceration exceeds growth as in those cases of deep ulcer, where it is difficult to locate the orifice of the cervical canal; (2) where ulceration and growth are equal, as in the case narrated; (3) where growth exceeds ulceration, as in the so-called cauliflower excrescence. This last form is relatively rare.

A lady, aged 53 years, was seen by me in August, 1900.

History.—For eighteen months her menstrual periods had been irregular, and had ceased for three months before I saw her. The menstrual flow had been very profuse and accompanied by clots. For six months she had had pain in the lower part of the back during the period. Between the period she had no pain or blood loss, but for six months she had a profuse muco-purulent discharge, which became offensive six weeks before I saw her (I believe the result of being examined). She stated that she was losing flesh. She had had one child 28 years ago, and 15 years later a miscarriage at the third month.

Examination.—She was well nourished, and appeared to be in fairly good health. She suffered very little pain, and was able to attend to her household. On bimanual examination the uterus was found to be of the size of a three months' pregnancy. It was freely movable, and from its interior a copious purulent discharge issued. On looking through the speculum the cervical canal was seen to be occupied by necrotic tissue. I diagnosed cancer of the body of the uterus, and advised operation.

Operation.—The uterus was removed by vaginal hysterectomy on August 5th, 1900. The patient recovered and has remained well.

This case exemplifies the important signs of cancer of the body of the uterus, namely, hæmorrhage, discharge, and enlargement of the uterus.

Pain is stated to be an earlier symptom than in cancer of cervical cancer. The periodic attacks of severe pain may be due to uterine contractions produced by accumulated secretions. I believe, however, that pain is not an early symptom, and that the disease advances considerably before causing any painful sensations.

Malignant disease of the body of the uterus is more chronic than that of the cervix, and in some cases appears to be preceded by a benign form of adenoma.

DIAGNOSIS OF CANCER OF THE BODY.

Cancer of the body of the uterus has to be distinguished from

1. *Pregnancy* in the earlier months, associated with hæmorrhage and discharge. Here the history and physical signs will serve to exclude malignant disease. The condition of the breasts should be noted. On vaginal examination, the purple discoloration of the vulva is a confirmatory sign. By bimanual examination the uterus will be found enlarged and the cervix softened. The character of the uterine enlargement is important, for in the early months of pregnancy the uterus retains its pear shape, and the internal fingers may be made to meet those of the external hand where the cervix joins the body of the uterus. In cases of malignant disease the enlargement is more uniform, and the cervix is not softened to any appreciable extent. In cases in which the blood loss is continuous dilatation of the cervix will be called for and the diagnosis thus completed. Retained portions of placenta or membranes may also lead to mistakes. The history of the case and the result of dilatation will decide.

2. *Intrauterine tumours* (polypi) present certain difficulties in diagnosis. The amount of hæmorrhage is usually greater even than in cases of cancer. Exploratory dilatation and examination with the finger *in utero* will determine the true nature of the case.

3. *Fungous endometritis*, if well marked, gives rise to considerable difficulty in diagnosis. The scrapings should be examined by a microscopist versed in uterine pathology. When the disease recurs again and again after curetting a guarded prognosis should be given, as malignant disease may be a later development.

4. *Senile endometritis* is an interesting disease, which must always be carefully watched, as cancer may be a sequela. The patients I have seen have been over 60 years of age. There is generally little or no pain, but a more or less constant purulent discharge, at times blood-tinged. The purulent discharge is thin and greenish-yellow in colour, with a foetid odour. It is different from the discharge in advanced cancer, as it never contains pieces of growth. Further, the discharge may come on quite suddenly and be very copious, or even exhibit considerable variation in amount from time to time. It is probable that the discharge in these cases collects in the uterus forming a pyometra, and is voided at intervals. When the uterine cavity is dilated nothing abnormal may be appreciable to the finger, or a patch of diseased mucous membrane may be detected which may prove on examination to be commencing malignant disease. The uterus affected by senile endometritis is usually not much enlarged.

5. *Myoma.*—The enlargement of the uterus from myoma may be difficult to distinguish from that due to malignant disease; a uterus affected by cancer of the body may attain a

considerable size. I have myself removed by abdominal panhysterectomy a uterus which reached above the umbilicus, and whose cavity was filled with that cheesy purulent material so frequently seen in cancer of the uterine body. Cancer may develop in the body of a myomatous uterus. It is not uncommon to find after removing the uterus that the two diseases coexist. A myomatous uterus containing in its interior a sloughing polypus may easily be confounded with cancer. Exploratory dilatation of the uterine cavity will in the majority of cases settle the diagnosis. A microscopical examination of any tissue removed from the interior of the organ will aid in doubtful cases. Moreover it is well to have obtained your patient's permission to do hysterectomy if necessary, and so avoid the necessity of a second operation.

In conclusion, it may be stated that any enlargement of the uterus found after the menopause should be carefully watched, and if it increases the organ should be removed.

ACUTE LEAD POISONING IN WOMEN RESULTING FROM THE USE OF DIACHYLON AS AN ABORTIFACIENT.

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It is now nearly eight years ago since Dr. Pope of Leicester published the notes of two cases of lead poisoning in women caused by taking diachylon pills, both of which ended fatally. Since that date cases have been recorded by Dr. Crooke,¹ Dr. C. B. Taylor² and Dr. Branson,³ and finally, a year ago, Dr. Ransom⁴ published an article dealing with the subject, and giving notes of several cases. The subject, therefore, is no new one, and my reason for publishing these cases is partly on account of the severity of the type and the rather unusual symptoms which some of them presented, and partly to emphasise the fact that, in the cases of lead poisoning in women, diachylon as a possible cause must always be remembered.

That the consumption of this preparation for illegal purposes is prevalent in the districts of Leicester, Nottingham, and Birmingham I think there can be no doubt from the cases that have been recognised there. It would now appear that this pernicious practice is carried on in Sheffield, for the fifth case in my series occurred in this town.

For permission to make use of the notes of Cases III and IV I am indebted to Dr. Pope, and of Case II to Dr. Headley Neale.

CASE I.—M. A. C., a single woman, aged 22, was admitted into the Leicester Infirmary on June 7th, 1898, suffering from blindness and loss of power in arms and legs.

History.—Patient says she had a child a few weeks ago: she is not certain of the date, but she was very ill after it, and for a week previously. She was not conscious of what was happening until May 29th, 1898. When she "woke up" on May 29th, she was not able to tell by touch "glass from wood, or wood from anything else." She was not able to raise her hand at the wrist at all, and was quite blind. She had been in the habit of taking three pills a day since October, 1897, until this illness (which began apparently about March, 1898). Then she was away from work for eight weeks. During the greater part of this time she was in bed owing to severe attacks of pain in the abdomen, which came on suddenly and doubled her up. Soon after this she was confined. Since then the abdominal pains have been less frequent, and have now been absent for some time. The blindness, she says, came on since her confinement. At the time of her confinement she is said to have had convulsions.

State on Admission.—The most noticeable features in the patient's condition were the ocular symptoms and the extreme general weakness. There was considerable proptosis of the right eye, and the lids only just came together when she closed it. There was great weakness of all the ocular muscles. On the left side the globe was almost immobile; on the right the movements were only slightly less limited, for although there was some power in an upward and downward direction, there was very slight movement to the inner side, and none outwards. The pupils were dilated; the left contracted to light; the right did not, but varied in size on attempting to move the eyes. The right eye was quite blind; in the left there was perception of light, but fingers could not be counted. On examination of the fundus, intense papillitis was found in both eyes, and a few quite small retinal hemorrhages. The media were clear.

There was extreme muscular weakness, and the patient was unable to stand unsupported. There was wasting of the muscles about the shoulder joint, and of the thenar and hypothenar eminences. The extensors of the wrist were very weak, causing wrist drop. In the legs, the extensors of the feet were weak, and there was much flabbiness of all the muscles of the limbs. In the left hand, sensation to touch was defective over the thumb; there was an oblique line of hyperæsthesia in the palm, and beyond this impairment again, with delayed sensation. Painful stimuli were readily felt. In the right hand there was delayed sensation, and some irregular hyperæsthesia. In the feet and legs there was great de-

ficiency in localisation, a touch on the foot sometimes being referred to the thigh. The superficial reflexes were for the most part exaggerated. The knee-jerks and elbow-jerks were absent on both sides. Her mental condition was dull, and her memory defective. There was a very definite blue-black line on both gums (which had quite disappeared by July 4th).

During her stay in the infirmary she suffered from pains in the abdomen, limbs, and head and neck. On one occasion she had a hysterical emotional outburst. She was discharged relieved on September 10th, 1898, having regained almost complete power in the affected muscles. Her eyes, however, had suffered irreparable damage. There was no longer any ocular palsy, but vision in the right eye was restricted to perception of light; with the left eye she could count fingers at a distance of a metre. There was consecutive atrophy in both eyes, with much distortion of the right disc.

The child of this woman was born at about full term, removed from the mother, and brought up carefully by hand. It lived a month, and at death only weighed 2 lbs. 11½ ozs. An inquest was held. The liver and kidneys were examined for lead, but none was detected.

CASE II.—R. B., married, aged 24, was admitted into the Leicester Infirmary on June 25th, 1898, complaining of pain in the head, sickness, and failing sight.

History.—Patient first felt ill on May 29th, 1898, when she had a bad bilious attack which lasted a fortnight. She had much pain in the head, neck, and shoulders, and was continually vomiting green, bitter material. She took but little food, and that was returned almost immediately. These symptoms all came on suddenly. The attacks of vomiting continued at frequent intervals for four weeks. There was not much abdominal pain, and none of a colicky nature. She had weakness of the right hand and arm, so that she was unable to grasp things properly or to fully extend the wrist. The left hand and arm were hardly, if at all, affected. She had only noticed that her sight was failing a day or two before. Patient admitted that she had been taking lead pills for a fortnight before her illness began, and continued to take them until June 14th, on which date she had a miscarriage. She thinks she was pregnant about a month. She had three children living who were well, and had never previously had a miscarriage.

State on Examination.—There was paresis of the external rectus muscle of the right eye, causing internal squint and diplopia. In the left eye the muscles were unaffected. The pupils were of equal size, and reacted normally to light and on accommodation. Optic neuritis was found in both eyes, the discs being red and swollen, and the edges indistinct. No retinal hemorrhages were seen. The grasp of both hands was weak, the right being most affected. There was no wrist-drop or foot-drop. The knee-jerks could not be elicited. There was a well-marked bluish-black deposit under the gums at the alveolar margin, and also under the mucous membrane of the lower lip. The pulse was slow, 56 to the minute, full, but compressible; the tongue was furred, and there was considerable anæmia.

Progress.—On the fourth day after admission she became delirious, being talkative and noisy, sleepless, quite irrational, and was constantly getting out of bed or trying to do so. Her mental condition improved in a few days, and on July 8th she left the infirmary at her own request. The grasp of the hands was a little stronger, but the knee-jerks were still absent. The blue line was still very marked.

As a result of the inquest on M. A. C.'s child, the police took the matter up, and after a time a woman who had given evidence at the inquest and from whom these two patients had obtained pills, was arrested and charged with administering noxious drugs to them for an illegal purpose. The two cases were tried separately. Among the pills seized by the police was one composed of oleate of lead. On both occasions the woman was acquitted.

CASE III.—A. B., a married woman, was admitted into the Leicester Infirmary June 11th, 1899, on account of severe abdominal pain.

History.—Two months before she began to complain of pain in the abdomen and back, which had continued on and off up to the time of admission. At the same time she had gatherings in both hands. She had lost much flesh during this period and had been very constipated. She was blistered on the abdomen with turpentine on June 9th, but with no relief to the pain. The catamenia were regular, except that the last period was a week over time. She had suffered from "growing pains," but had never had rheumatic fever or chorea, or sore throat. Her husband stated it had come to his knowledge some months ago that his wife had been taking some pills to prevent her having any more children. He had remonstrated with her and forbidden her to continue them. Lately he suspected that she had been taking them again.

State on Admission.—She was very weak. The pulse was 90, regular, and of fair volume. The cardiac dulness was not increased, but a slight thrill was felt at the apex, and a short presystolic *bruit* was detected on auscultation. The knee-jerks were absent; the plantar reflex was present and not exaggerated. The tongue was furred, and a thin blue line was present on the alveolar margin of the gums, particularly noticeable over the right central incisors and upper and lower canines. She spoke in a whisper, and was quietly delirious at times. There was no ocular paralysis or papillitis.

Progress.—Patient continued to be restless and delirious and slept badly. The bowels were constipated. On June 20th the tongue was clean. She had slept well after paraldehyde 3j, and her mental condition seemed somewhat improved.

On June 22nd there was pain in the calves of the legs on pressure, and great weakness of the legs and hands. The knee-jerks were still absent. The pulse was 122. She was delirious again.

On June 26th the pulse-rate had increased to 160 to the minute. The delirium continued. She still spoke in a whisper. No laryngoscopic examination could be made. Breathing was more rapid, the chest moved badly, and there was deficient air entry; moist *râles* were heard over the lower lobes of both lungs. There was marked weakness of the diaphragm,