AIDS IN THE DIAGNOSIS AND TREATMENT OF ECTOPIC GESTATION

BY

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The diagnosis of ectopic gestation in all its varieties is notoriously difficult, and for the attainment of some certainty in this it is necessary to evaluate carefully the history, symptoms, and signs. Proper treatment depends on a correct diagnosis, and doubtless there are cases in which the condition is unsuspected and entirely missed. By an error in diagnosis one may unnecessarily be exposing a patient's life to grave risks. It is thus incumbent on one to marshal all facts that may assist in the elucidation of the disease from which the patient may be suffering.

Acute tubal rupture with severe internal haemorrhage and its dramatic sequence of events is known to all. This is the picture of ectopic gestation which the recently qualified doctor has in mind. In actual fact it is surprising how rarely one sees the acute compared with the subacute or chronic (haematocele) type. A proper orientation and perspective of this disease and its common manifestations is required. Shaw (1936) states that "the diagnosis of ectopic gestation, in which localized haematoma are formed, often presents an extremely difficult clinical problem, and a careful interrogation of the patient as to the severity of the pain is always necessary." Cope (1935) refers to Grandin's observation that "the man who suspects every woman of having the condition is the man who is least liable to err in diagnosis." It may be considered that this is an overstatement, but with increasing gynaecological experience one appreciates that it is not so. A mass in the pelvis may be due to many causes, but in considering ectopic gestation the usual mistake made is between this and tubo-ovarian inflammation, an ovarian tumour or an early uterine pregnancy with a small tubo-ovarian swelling (inflammatory or neoplastic). With acute tubal rupture the condition has to be diagnosed from other abdominal catastrophes such as perforation of a hollow viscus. Most gynaecological surgeons will admit that at some time during their careers they have mistaken an ectopic gestation for a threatened abortion.

Pelvic Haematocele

As aids in the diagnosis of pelvic haematocele I wish to stress the importance of certain points in the history and the presence of *pulsation* in one or other vaginal fornix. Cases will be cited as illustrations.

With regard to the history, in something like 30 per cent. (Whitehouse, 1935) of cases there is no definite interruption of the periods, as irregular bleeding makes its appearance at or before the time when the first period following conception becomes due. I have noted that bleeding of an intermittent character may start before the period is expected or it may be coincidental with menstruation. On the other hand this may be delayed for a few days, and then blood loss be continuous for some weeks. One can almost invariably elicit a history of pain in the lower abdomen, present perhaps for one day only but in most cases recurring at intervals and being of a colicky nature. Eventually it may settle down to become a continuous dull or dragging ache. The combination of repeated attacks of pain and bleeding is most significant. Where the haematocele is large the main complaint may be bladder distress.

Pulsation in a Fornix

Writers in the last century were fully aware of this sign. Allbutt (1896) states: "Some authors have enumerated among the symptoms, during the progress of haematocele, an undue pulsation of the arteries in the vagina and cervix uteri." Whitehouse (1935) says that "pulsating vessels are often to be felt." In distinguishing tubal pregnancy from a tubo-ovarian swelling associated with an early uterine pregnancy he says that "the presence of definitely pulsating vessels on the affected side only favours a diagnosis of tubal pregnancy." Contrarily, Munro Kerr (1933) does not attach great importance to this, for he has observed that in inflammatory conditions of the appendages it is also well marked.

I have found pulsation in one or other fornix to be of considerable help in arriving at a correct diagnosis, and I cannot easily reconcile Kerr's statement with what I have experienced. In this part of China (Hong Kong) pelvic infection, due either to gonorrhoea or to septic abortion, is rife, and pelvic abscess is commonly seen. As yet a haematocele has been the finding at operation in every case in which there was pulsation. In some of them the husband has been known to be infected with gonorrhoea.

It is easy to miss the presence of pulsation in a fornix. The tip of the index finger should rest gently in the region of the attachment of the vagina to the cervix. It is there that pulsation is best felt. Only light pressure should be applied, for if it is too firm then the pulsation will be obliterated. For the elicitation of this sign in the right fornix it is preferable to use the left index finger.

ILLUSTRATIVE CASES

Case 1.—This was a six-para aged 31, who had been married twelve years. The husband had a history of gonorrhoea. Previous deliveries were normal, and the last was nine months earlier. There had been one abortion five years previously. The patient complained of abdominal pain followed by bleeding a fortnight before admission. She was still lactating, and had had no periods since her last confinement. On vaginal examination an irregular mass was felt in the left fornix, but the uterus could not be distinguished from it. There was marked pulsation in the left fornix. At laparotomy a pelvic haematocele was found, and it was impossible to identify the left tube and ovary.

Case 2.—A four-para aged 24, married six years, whose last delivery was six months ago. Menstruation commenced two months later, but the subsequent period was a fortnight overdue. Fourteen days after this a severe attack of pain occurred in the left side, followed by continuous bleeding for six weeks. There were three recurrent attacks of acute pain. Abdominal examination disclosed a mass rising out of the pelvis and extending into the left iliac fossa equivalent in size to a sixteen-weeks' pregnancy. Per vaginam, pulsation was felt in the left fornix and an irregular-shaped swelling filled the left half of the pelvis. At operation a large haematocele was found with many intestinal adhesions. The left tube and ovary were not seen.

Case 3.—A four-para aged 33, married twelve years. The husband admitted having had gonorrhoea. Deliveries had been normal except for one abortion. The last confinement was one and a half years ago. Three weeks before admission the patient fainted as the result of a severe attack of abdominal pain. This was followed by continuous bleeding. Whilst lying in the ward prior to examination she was seized with acute abdominal pain. There was no history of menstrual irregularity. On vaginal examination the uterus was found to deviate to the right owing to a mass in the left half of the pelvis. Pulsation was present in the left fornix. At operation a large haematocele was found.

Case 4.—This patient was a nullipara aged 29, who had been married eleven years and whose husband had gonorrhoea. Menstruation had always been irregular, but the last period lasted for only one day instead of the usual week. The day after there was generalized abdominal pain, which recurred during the following week and was accompanied by a profuse blood-stained discharge. On examination the uterus was bulky and retroverted. A mass was felt in the left fornix together with pulsation. At operation a small haematocoele was removed. The right ovary was buried in adhesions.

Case 5.—A five-para aged 33, married nine years. The husband had been treated for gonorrhoea. The last delivery was one and a half years ago. Three weeks before admission there was an acute attack of abdominal pain with fainting. Severe bleeding ensued. This continued for eleven days, and was followed by another bout of pain. The condition had been diagnosed as a pelvic abscess and treated conservatively. A mass was found rising out of the pelvis, and per vaginam it was filling most of the cavity. There was marked pulsation in the left fornix. When the abdomen was opened a large haematocoele was seen with the appendix adherent to it. An appendicectomy was performed as well as the usual attempt at removal of as much of the blood clot as possible.

Acute Tubal Rupture with Internal Haemorrhage

Even in the acute type of ectopic gestation it is sometimes difficult to be certain of the diagnosis. Particularly is this the case in the Tropics, where patients suffer from severe degrees of anaemia due to conditions other than surgical, such as ankylostomiasis, which give the impression of sudden and excessive blood loss. In doubtful cases I would commend the simple procedure of puncture of the posterior vaginal fornix. Either a lumbar puncture needle or an ordinary wide-bore needle with syringe attached will suffice. The risk of infection is negligible, and perforation of the intestine is minimal. If there is free blood the intestines will float on the surface and so be removed from any danger of puncture by the needle. After cleansing the vaginal vault with dettol the needle is pushed through the posterior fornix into the pouch of Douglas, keeping parallel and as close to the posterior aspect of the cervix as possible. If blood is aspirated freely into the syringe the test is positive for intraperitoneal bleeding. This is a useful means of differentiating between an abdominal catastrophe due to perforation of a hollow viscus and one due to free bleeding into the pelvic cavity, as from an ectopic gestation. In Allbutt's textbook will be found the statement that "in all doubtful cases . . . recourse may be had to an exploring needle or aspirator as recommended by Sir J. Simpson and Professor Braun." In those cases in which there is much blood, and consequently irritation of the inferior surface of the diaphragm, shoulder pain may be present as demonstrated by Cope.

Case 6.—This patient was a four-para aged 34, married sixteen years, whose last pregnancy was fourteen months ago. She had had amenorrhoea for two months. The day before admission she had slight bleeding, with backache and pain in the lower abdomen. Twelve hours later there was a recurrence of bleeding and abdominal pain. The patient was very anaemic and had marked oedema of the legs. There was slight suprapubic rigidity. Per vaginam the uterus was bulky and a mass was protruding through the os. On examination of the stools ankylostoma were found. A general anaesthetic was given and the uterus explored. I was not satisfied that the case was an abortion, since the material removed on curettage lacked the typical appearance of products of conception. The posterior fornix was punctured and blood withdrawn. At laparotomy a right tubal abortion was found. There was one litre of free blood, and some of this was utilized for autotransfusion. Convalescence was uninterrupted.

Pathological examination of the uterine contents showed them to be portions of a decidual cast.

The difficulty in this case lay with ankylostomiasis complicating the picture, and an unnecessary abdominal operation on a woman so infected might have proved fatal. Puncture of the posterior fornix revealed the true condition.

Case 7.—A nullipara aged 29, who had been married twelve years, had had vaginal bleeding for eight days after missing one period. Abdominal pain preceded the bleeding by about eight hours. There was a history of shoulder pain. Hypogastric rigidity was present and a small tender swelling was felt in the posterior fornix. The diagnosis was in doubt, since the patient declared that her periods were irregular and often accompanied by pain. The posterior fornix was punctured and blood aspirated. At operation the abdominal cavity contained much blood and a right tubal gestation was present. An autotransfusion of 700 c.cm. of blood was given.

Treatment

Once the diagnosis of ectopic gestation, whatever its type, is made the treatment is operation. No matter how ill or how well the patient appears there should be no alternative to this line of treatment. In all cases, provided there is no infection, the abdominal route should be employed, but where a haematocoele has become infected and has developed into a pelvic abscess, then drainage through the posterior vaginal fornix should be adopted. Even if a mistake in diagnosis is made and the condition is found to be a pyosalpinx, it is more prudent to have done what may prove to be an unnecessary operation than allow an ectopic gestation to remain untreated.

Pelvic Haematocoele.—In the past palliative treatment was strongly advocated in those cases in which the haematocoele was small. It was suggested that the mass was absorbed *in situ*. One has only, at operation, to look carefully at the capsule to realize how thick it is and what a length of time must be required before absorption is complete. I am of the opinion that all cases should be dealt with by operation. The objections to conservative treatment are: (1) the interminable length of convalescence and invalidism before absorption is complete; (2) the persistence of uterine bleeding, either continuous or intermittent, which will induce anaemia; (3) the constant pain, which at times is punctuated by acute attacks; (4) the risk of infection and formation of a pelvic abscess. At operation as much of the blood clot as possible should be removed. If the capsule is found to be adherent to the bowel no attempt should be made to separate it. When the appendix is involved in the mass an appendicectomy should be done. Only in the presence of definite infection or where there is persistent oozing from raw surfaces should a drainage tube be inserted.

Acute Tubal Rupture.—The value of autotransfusion requires emphasis. In some gynaecological clinics it is a routine procedure, and even in the case of fibroids removed by hysterectomy Wallingford (1937) is now conserving the blood and returning it intravenously to the patient. It is obvious that in the presence of infection one would never employ this method. The beneficial result of the transfusion is remarkable in cases which appear moribund, and convalescence is more rapid. Care must be taken to filter the blood through several layers of fine gauze. The "citrate" method has been used in all cases.

Summary

1. In the diagnosis of pelvic haematocoele the history of recurrent attacks of low abdominal pain accompanied

by periodic or continuous uterine bleeding is very significant. Pulsation in one or other fornix confirms the diagnosis.

2. In acute tubal rupture if there is doubt as to the presence of free blood in the pelvic cavity, puncture of the posterior fornix is a useful accessory means of diagnosis.

3. Operation should be resorted to in all cases, no matter how small the haematocele. If possible, drainage should be avoided. In the acute case where there is free intraperitoneal bleeding and no infection autotransfusion should be performed during the operation.

I wish to thank the Director of Medical Services for permission to publish these cases and for the clinical facilities he has given me.

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Clinical Memoranda

Prostigmin in Paralytic Ileus

The points of interest in regard to the case reported appear to be: (1) Cracked ice should not be given post-operatively unless there is adequate supervision to ensure that the melted ice is not swallowed. (2) Atropine brakes the action of prostigmin, and is thus better avoided. (3) There was no alteration in the pulse and respiration as the result of the administration of 2.5 mg. of the drug in one injection.

The patient was a man aged 62 weighing 17 stone, who was operated on for intermittent left renal colic. A lower polar aberrant vessel was divided and the pelvi-ureteral junction straightened over an inlying catheter splint. The anaesthetic was 15 c.cm. of a solution of 1 in 1,500 percaïne intrathecally, supplemented by gas and oxygen.

No purgatives or enemas were used in the pre-operative preparation, and the bowels had acted normally on the morning of the operation. During the first twenty-four hours following his return to bed nothing was given by the mouth, but four pints of 5 per cent. glucose in normal saline were injected intravenously. Cracked ice was sucked by the patient, and it appeared afterwards that he had swallowed large quantities of the melted ice. This was the probable cause of his subsequent trouble. Flatus was passed within a few hours of his return to bed, but on the second day distension had set in. No relief was obtained from enemas of all varieties, including ox-bile and molasses. Pituitrin had no effect. Acetylcholine was given in 0.1 gramme doses every two hours without result. By the third day regurgitant vomiting had begun, and upper abdominal distension was marked. At noon on this day 5 ampoules, each of 1 c.cm. prostigmin (2.5 mg.) were injected subcutaneously together with 1/100 grain of atropine sulphate. Colic and sweating occurred within thirty minutes, and a fair amount of faeces and flatus was passed. The upper abdominal distension remained, and the action of the drug exhausted itself within fifteen minutes.

By 7 o'clock in the evening distension had increased, though the pulse was stronger. Another 5 c.cm. of prostigmin was injected. This had no effect for twenty minutes. At the end of that time sweating and violent colic commenced, and after a few minutes large quantities of faeces and flatus were passed. The emptying of the bowels continued for some

hours, by which time the abdomen was flat. The bowels required some adjustment for the next few days, but convalescence was on the whole uneventful.

Similar fortunate experiences resulting from the use of large single doses of prostigmin have been recorded by some Continental writers, and by W. E. David (*Lancet*, May 11, 1935) in England.

Johannesburg.

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Parkinsonism following Peripheral Trauma

The case recently reported (Walker, 1937) prompts me to record one other.

In January, 1916, a man aged 27 sustained a gunshot wound in the right forearm while serving in Mesopotamia. He shows the scar of entry about an inch proximal to the wrist-joint, and a two-inch scar about six inches above it, where the bullet was partly removed. A piece of shot is still palpable.

He was sent to India, where he did nothing for twelve months, and was then posted as band storeman and as unfit for active service because he could not use his arm. The ring finger of his right hand had twitched since the injury—the tremors were worse when not inhibited by his active consciousness of them; he had some pain and stiffness (hypertonus) and loss of power in his right hand. In February, 1919, he was demobilized, and this disability was still present.

In July, 1919, he was appointed policeman at Dover Marine Station, which post he held for twelve years. In 1924 the twitching spread to his right hand; he could still write, but only slowly. In 1928 he complained of stiffness and loss of power in his right knee (hypertonus). In 1929 the sensation of "pins and needles" occurred in his hand and arm; about this time his wife noticed that he held himself very stiffly and that his arms were kept in a flexed position. She also stated that they changed houses in that year, and that he used to run on the path uphill to the house, as he found this easier than walking: he tended to drag his foot (hypertonus). The tremors got steadily worse, and because of this he lost his position, as he could neither write nor walk properly. From 1931 to 1934 he was keeper at a level crossing, his wife performing most of his duties. In the latter year he was dismissed owing to incapacity for work.

In 1934 my notes stated that he presented the full clinical picture of the Parkinsonian syndrome: tremors no longer unilateral, blank expression, forward gait and posture, and dry flat monotone. In addition there were signs that neuritis was affecting his radial, ulnar, and median nerves. He is going slowly downhill, and one of his most prominent symptoms is his frequent desire to be moved in bed—a symptom quoted by some authorities.

COMMENTARY

This case shows all the characteristics of Naville and de Morsier (1932).

1. In the interval between the injury and the full development of the Parkinsonian syndrome the injured limb remains weak, painful, and subject to sensory disturbances.

2. Tremors and hypertonus almost always appear on the injured side.

3. The syndrome becomes manifest on the injured side.

4. Mental changes are absent.

I regret to say that my representation and that of the other two doctors who had attended him met with no success from the Ministry of Pensions in 1934.

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