ANGULAR PREGNANCY: A CLINICAL ENTITY

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It is a common experience in medical practice that specific clinical rarities are seldom encountered singly. A striking illustration of this is furnished by the two cases to be described, which were admitted into our unit of the Glasgow Royal Maternity and Women's Hospital within a period of twenty-four hours. They proved to be examples of that rare variety of gestation designated "angular" pregnancy, which we are inclined to think has never received sufficient recognition as a definite clinical entity.

CASE I

A woman, aged 32, pregnant for the sixth time, was sent into hospital on November 12th, 1933, as a case of ectopic gestation. The fifth pregnancy, in 1929, had ended as an abortion at two months. In each of the first four deliveries, three of which were instrumental and the fourth spontaneous, the noteworthy feature was delay in the third stage. With each pregnancy there was complaint of increasing weakness. Menstrual periods had been irregular as regards both frequency and duration, but the patient was quite definite that the last occurred on July 28th. On the morning of admission there was a sudden gush of watery discharge (suggestive of rupture of the membranes), and acute pain developed in the right side of the abdomen. Pain thereafter was persistent; the patient felt cold and shivery, but she did not have any vaginal bleeding.

On admission she appeared to be extremely ill, being cold, pale, restless, and complaining of severe abdominal pain, mainly right-sided. There was no distension of the abdomen, but a rounded swelling, tender to touch, was present on the right side. The lower part of the abdomen was also tender, and marked Blumbergism was evident. No dullness was detected in the chest, but the respiratory murmur was harsh and accompanied by a few coarse rales. Bimanual examination showed that the cervix was closed, and that the size of the uterus corresponded to the stage of gravidity suggested by the period of amenorrhoea—namely, fifteen weeks; in addition, there appeared to be a cystic swelling to the right of the uterus.

A provisional diagnosis of ectopic pregnancy or ovarian cyst with torsion of the pedicle was made, and, in view of the evidences of peritoneal irritation, immediate laparotomy was performed under general anaesthesia. No blood or free fluid was found in the abdominal cavity. The ovaries were healthy, and the tubes, while somewhat congested, presented no abnormality. The intestines were normal and the appendix innocuous. Examination of the uterus, which contained no fibroids, showed marked elongation of the right cornu, and the diagnosis of angular pregnancy was established. The abdomen was closed.

The following day, November 13th, at 11 a.m., the patient had a rather prolonged rigor, during which the temperature rose to 106°. The sputum, scanty and muco-purulent, was found to contain abundant pneumococci of Type IV. With the subsidence of the rigor, the temperature fell abruptly to normal, and remained so. Incidentally, had serum been administered without typing the organism, the satisfactory result would probably have been ascribed to that agent. Complete abortion occurred on November 14th at 2 a.m., after which the patient felt much better. Subsequent progress was uneventful, and she was dismissed well on December 2nd.

CASE II

A primigravida, aged 21, was admitted to hospital on November 13th, 1933, on account of violent, cramp-like pains in the lower abdomen, especially on the right side. The pregnancy had been uneventful until six days previously, when she had had her first experience of these violent pains. At that time her doctor had noticed that there was tenderness over the uterus, which extended to the right side. He had also noted the hardness of the uterus, and what appeared to be a purulent vaginal discharge, but there was no haemorrhage. With rest and thorough evacuation of the bowels the severe pain passed away, but the cramp-like ones persisted, culminating in the violent right-sided abdominal pain which necessitated removal to hospital. The patient mentioned that, from the onset of pregnancy, she had experienced pain radiating down the posterior aspect of the left thigh, but this did not incapacitate her in any way, and was probably unrelated to the obstetric condition.

She was afebrile on admission, but the pulse rate was increased. Inspection of the abdomen revealed a swelling lying obliquely towards the right side. Palpation confirmed this observation, and demonstrated the marked tenderness, especially over the upper pole, which occupied the right side of the abdomen below the umbilical level. On bimanual examination the elongated and tender right cornu of the uterus was made out, the patient was deemed to be about nineteen weeks pregnant, ectopic pregnancy and other abnormalities were definitely excluded, and angular pregnancy was diagnosed. Repeated examination of the urine for pus cells and organisms yielded negative results. The sedimentation rate of the erythrocytes was normal. Four days after admission the patient was seized with acute right-sided abdominal pain, which caused her to be doubled up. Temporary relief followed a large bowel movement, but the severity of the pain afterwards necessitated the administration of morphine.

The patient was allowed home on November 25th, and was kept under close supervision. Occasional bouts of right-sided abdominal pain occurred, but on the whole she remained fairly comfortable. The uterus continued to occupy its oblique position as the right-sided enlargement became progressively more marked. It was determined that, after the delivery of the child, the uterus should be manually explored in order to localize the placental site. On March 19th, 1934, she was readmitted on account of the recurrence of cramp-like abdominal pains; in addition, she complained of constant generalized pain in the abdomen and lumbar region. She was now thirty-five weeks pregnant; the uterus was lying obliquely, with the upper pole to the right, over which there was exquisite tenderness; and this part of the uterus was so tense as to suggest the presence of the foetal head.

On March 21st, at 7 a.m., the patient complained of severe abdominal pain, which increased in severity until at 10.30 a.m. she was in such agony that morphine had to be administered. The uterus at this time was uniformly tense and tender, but no contractions were observed. Definite labour pains began at 9 p.m. At 12.15 a.m. on March 22nd the cervix was found to be practically fully dilated, and the membranes were artificially ruptured. An hour later a male child, 17 inches long, and weighing 5 lb. 1 oz., was delivered with forceps. After extraction of the child, the uterus continued to lie markedly towards the right side. According to plan a hand was introduced into the uterus; the placenta was found to occupy the elongated right cornu, while the corresponding left cornu at a lower level was quite clear. Bystanders with a hand on the abdomen had no difficulty in appreciating the difference in level of the cornua, and the ease with which the observer's fingers could be felt in the left as contrasted with the right cornu was striking. The placenta measured 9 inches by 4½ inches, and had the shape of a large kidney; there was no evidence of retroplacental haematoma.

The progress of the patient was entirely satisfactory, and she was dismissed well on March 31st. Involution was progressive, but the marked elongation of the uterus to the right side, together with tenderness to the most gentle touch, remained noteworthy features for the first five days of the puerperium.

Remarks by Professor Munro Kerr

Many years ago I directed attention to the subject of angular pregnancy—namely, that particular variety of gestation in which the zygote becomes implanted in the angle or cornu of the uterus. The exact implantation site would appear to be either directly over the tubal opening, or, more probably, in the interstitial portion of the tube immediately external to that opening. The condition is quite distinct from the typical interstitial variety of ectopic pregnancy, for the ovum develops not *in substantia uteri* but towards the uterine cavity. The term “angular” has been employed by several writers in order to distinguish it from “interstitial” pregnancy on the one hand and “cornual” pregnancy on the other, as the latter term is often used to describe a pregnancy in a horn of a uterus bicornis.

In addition to the two cases described, I have seen four which were definitely proved examples of angular pregnancy, and a number not so typical but nevertheless suggestive of this specific abnormality. One of these four cases I described many years ago, but the story bears repetition, and is as follows:

I was asked by a medical friend to see his wife, as he feared she was threatened with an abortion. I had attended the lady at her two previous confinements—one seven and the other four years previously. When I visited her she gave me the history of a period missed. She also told me that ten days after the period was expected abdominal pain and haemorrhagic vaginal discharge appeared. The discharge was not great, but the pain was sometimes severe, and was more marked towards the left iliac fossa. Upon making a vaginal examination I discovered that the uterus was enlarged, and at the left cornu in the neighbourhood of the tube I could detect a small localized bulging. I told her husband of my fear that there might be an extrauterine pregnancy, and that I was chiefly alarmed because it was so close beside the uterus. My fear appeared to be fully justified when, two days later, a cast complete except at one corner was expelled. I thought I would have to open the abdomen at this stage, but my friend requested me to delay doing so. We were, however, prepared for any possible sudden call to operate; the patient was watched very carefully, and all discharges kept. Four days later a small piece of membrane, which just completed the sac that was expelled, came away in the vaginal discharge. Attached to this little piece of decidua was the ovum, which, unfortunately, I lost.

The two cases recorded above and the others I have encountered have all shown similar features: (1) pain; (2) lateral distension of the uterus in the region of the uterine cornu; and (3) tendency to abortion. The pain, as these recorded cases illustrate, may be very severe; indeed, in all the cases I have seen pain has been a pronounced feature. The reason for the pain can only be surmised. Round the tubal ostium there is a very abundant distribution of circular muscle fibres. Again, the blood supply is rich in that region, so that haemorrhages into the uterine wall or beneath the placenta are prone to occur. This is probably the explanation also of the tendency to abortion with this implantation. Of these six definite cases three terminated in abortion.

The outline of the uterine distension is characteristic: an elongated, distended lateral sacculation of the uterus at one cornu. Furthermore, it is very tender to pressure. In the case recapitulated the distension was no greater than the size of a walnut (examined under anaesthesia). In another case—an abortion at four months, which I removed with my fingers—I was afraid that I might perforate the uterine wall. From my experience the condition most commonly first attracts attention, as in the two cases here recorded, between the twelfth and twentieth weeks of pregnancy. It is obvious that the condition very closely simulates ectopic pregnancy,

pregnancy in a rudimentary horn, a fibromyoma undergoing degeneration, an ovarian cyst with torsion of the pedicle, appendicitis with lateral flexion of the uterus, or pyelitis complicating pregnancy.

Scattered through obstetric literature are references to angular pregnancy. Paul Bar, Howard Kelly, and I directed attention to it long years ago. Few obstetricians, however, appear to recognize the condition as a specific clinical entity. Modern textbooks, even those of considerable size, make little if any reference to it. For example, the subject is not mentioned in Williams's *Obstetrics*, and is only briefly referred to in the sixth edition of DeLee's textbook. Several examples of cornual and angular pregnancy have been described in foreign journals, but British literature appears to be singularly lacking in such references. The two cases here described and most carefully investigated by myself and my staff cannot be unique experiences. As previously stated, I have already encountered four exactly similar. Many other obstetricians must have dealt with cases of a like nature: we should feel grateful if they would furnish a summary of their observations.

ACUTE EPIDURAL SPINAL ABSCESS

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The epidural space lies between the dura mater and the periosteum lining the bony walls of the vertebral canal. Dandy,¹ writing in 1926, deplors the lack of anatomical description in current textbooks, and discusses the appearances of the space in a cadaver. He attaches great importance to variations in size. Absent over the cervical enlargement, and nearly so over the lumbar swelling, the epidural space becomes deepest where the spinal cord or the mass of its roots is smallest—that is, in the upper dorsal and lower lumbar sections. According to this author the space exists only on the dorsal aspect of the dura, the ventral dura being closely applied to the bones of the vertebrae and their ligaments. The experience of one of us (A. A. McC.) suggests that in the thoracic region of the cord the ventral dura is less firmly adherent than elsewhere.

Pathology

The epidural space is occupied by a loose meshwork of areolar tissue, which, by virtue of a feeble blood supply, offers a favourable site for infection. Epidural spinal abscess, known also as suppurative peripachymeningitis, and by the more generic but less accurate term “external pachymeningitis,” is an uncommon but important disease. Many of the recorded cases have been discovered at necropsy, and although there is a record by Traube as long ago as 1871 the condition occupies little or no space in the textbooks.

Dandy classifies the causes into two groups:

1. Extension from a neighbouring focus of infection—namely, boils, or anthrax of the nape of the neck; extrapleural suppuration; osteomyelitis of a rib; osteomyelitis of the vertebrae.
2. Metastatic infection from a distant source.