RUPTURE OF THE PREGNANT UTERUS FROM INDIRECT INJURY

BY

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As very few cases of rupture of the uterus from indirect injury, when advanced in pregnancy, have been recorded, it was thought worth while to report the following case.

Case Record

A Hindu primigravida aged 17 was admitted on February 20, 1937, to the Lady Hardinge Hospital, New Delhi, from a distant village. She was at full term, but had not come into labour, and the relatives were doubtful if the foetus was still alive, as the abdomen had been getting smaller since the patient had had a fall of some 12 feet from a first-floor veranda ten days previously. In other ways she was considered to have entirely recovered from the accident. The full history was not obtained till some days later; it was then said that she had lost her balance over a low parapet and fallen on her right side, being stunned for four or five minutes. She was picked up, and for the next few days stayed in bed. She complained of pain, mostly over the right loin and hip, and vomited several times, but this passed off gradually, and by the end of about five days she was able to get up and take food as usual. The bowels acted normally and she never complained of undue abdominal distension. She was seen by a doctor once, but he apparently found nothing very serious, and as the girl was recovering the relatives did not trouble to call him again. Foetal movements were thought to have been felt for three or four days after the accident, but the patient was not very sure. A blood-stained discharge was noticed four days before admission, and this had continued to a slight extent. Before this pregnancy menstruation had been regular and of the 3-4/30 day type.

CONDITION ON ADMISSION

The patient was a rather thin, slight girl with sallow complexion, and was fairly well developed for her age. Her mental condition was rather dull and she answered questions unwillingly. There was only slight anaemia. She moved about the bed easily and did not complain of any pain. The tongue was moderately coated; temperature 98.4° F., pulse 88, respirations 20. There were signs of bronchitis in both lungs, especially at the bases, but no complaint of cough was made.

The abdomen was enlarged with what appeared to be a full-term pregnancy in the left occipito-anterior position, with the head just over the brim, but no foetal movements could be detected and no heart sound was heard. No uterine contractions were felt. There was no abnormal distension or tenderness in any part of the abdomen.

On vaginal examination the os was seen to be closed and the cervix not taken up, and the presenting head could be palpated high up in the brim. The pelvis appeared quite normal in size. There was a little blood-stained discharge.

PROGRESS OF THE CASE

As there was no suspicion of ruptured uterus at that time, medical induction of labour with castor oil, quinine, and enema was tried. Two days later there were no pains and only a slight show, so she was re-examined, and as the cervix was still not taken up and a piece of membrane was felt protruding from it a laminaria tent was introduced and the vagina packed with gauze soaked in acriflavine and glycerin. The temperature was now normal and the pulse rate not above 90. The next day the pack and tent were removed and a douche given, and as the head bones of the macerated foetus could be just felt above the internal os three tents were introduced into the cervical canal and another vaginal pack inserted. The patient's general condition was unaltered

and she still had no pains, but the pulse rate had risen to 98. The following morning—that is, the 24th—she was decidedly worse, though it was reported that she had had a fairly good night. For the first time there was some fullness and resistance at the sides and upper part of the abdomen, and she seemed anxious and nervous, though she would not acknowledge that she had any pain. The foetus was apparently in the same position. The pulse had risen from 116 at 6 a.m. to 148 at 10 a.m., and was very poor in volume; the temperature was 101°. The vaginal pack and tents were removed and, after douching, a finger was easily introduced through the cervix, but now the lower uterine segment was found empty except for the extreme edge of the placenta. Laparotomy was decided on, as evidently the foetus had been at least partially displaced from the uterus by the tents. On opening the abdomen by a median subumbilical incision the first thing encountered was the very macerated foetus lying free among the intestines, with the placenta low down on the left in front; the edge was still attached just inside the uterus, which was small, had a large gaping transverse tear right across the fundus, and had retracted and involuted in the shape of a cup. There was a little brownish free fluid in the peritoneal cavity but no sign of recent bleeding or general peritonitis; a small amount of lymph was present, however, round the pelvis, and the anterior part of the uterus was adherent to the bladder. As the patient's condition under the anaesthetic was very poor, the foetus and placenta were removed and the tear hastily stitched up with catgut and the wound closed after providing for drainage at the lower end. She was too ill to undergo hysterectomy.

After the operation her condition gave a good deal of anxiety as she developed pleurisy, followed by pneumonia, first at the base of the left lung and then in the corresponding position on the right side, and the signs persisted, though she complained very little of her chest. At first there was no abdominal distension and the wound seemed to be healing normally, but at the end of a week the edges began to fall apart, and later the whole wound gaped widely, as if the patient's powers of healing were at a minimum. She then began to show signs of partial intestinal obstruction, with vomiting on and off, but only a little distension. She seemed too ill to withstand another abdominal operation, especially as it was doubtful if the stitches would take. Another factor which had to be considered was that her relatives were ignorant peasants who would probably not only have refused to permit the operation if it had been suggested, but might have removed her promptly from the hospital and left her without medical aid and any hope of recovery. She was kept on rectal salines, which were retained well, and was given very little by the mouth except glucose water and fruit juice. A faecal fistula burst at the lower end of the wound on the eighteenth day after operation, and in two or three days she began to improve. The fistula healed spontaneously after eight days; her appetite then returned and she started to gain weight. The lungs were a long time clearing up, and did not become normal for quite another month. The abdominal wound also took a very long time to heal, but by May 11 the granulating area was only the size of a pea and the patient was discharged a few days later. By that time her general condition was good; her mental condition was quite bright, and she looked years younger than on admission.

The last vaginal examination was made on May 4, when the uterus was felt to be in good position and fairly normal in size and shape; the cervix was small and closed and the fornices were clear, but there appeared to be some adhesions between the fundus and the lower end of the abdominal wound.

Comments

On looking up the literature on uterine rupture one finds that from time to time cases due to direct injury, apart from labour and attempts at criminal abortion, have been recorded as well as a fair number of cases of so-called "spontaneous rupture," excluding those due to the giving

way of Caesarean and other scars. One can, however, find very few cases following severe indirect injury, although in some of the spontaneous cases a history of slight trauma or strain was recorded. DeLee (1933) states that only under the most violent indirect injury will a healthy uterus tear. According to the review by Kane (1923) the predisposing cause in multigravidae, apart from a clear history of previous uterine trauma or disease, appears to be thinning or hyaline degeneration of the uterine wall left from previous pregnancies, but in primigravidae some other reason must be looked for. It is suggested that some degree of infantilism may be present in certain cases that have no gross abnormality such as a poorly developed uterine cornu; but that is not very likely, as most patients in this class are sterile and menstruate scantily if at all regularly. In 1926 Riddell collected twenty reported cases of rupture during pregnancy; and among these no fewer than nine patients had had previous uterine disease and six had been subjected to instrumental intervention at some distant date, and only three were primigravidae. One-third of the total cases had terminated before the sixth month. In the present case there was no predisposing cause, as the patient had been free of uterine disease, and though she was rather young she had menstruated regularly for at least one or two years before conception, so it was unlikely her uterus was underdeveloped. In certain of the reported cases, such as that of Reeder and Moore (1935), the primary injury seemed to have been sufficient to cause a haematoma in the uterine muscle, and the onset of labour pains shortly afterwards completed the rupture and brought on acute symptoms of internal haemorrhage with shock. In this case, however, there was no history of labour pains, and so it must be concluded that the fall itself was the cause of the complete tear.

The classical clinical signs and symptoms of rupture of the uterus—that is, haemorrhage, external or internal, shock, and those of peritonitis following the death of the child—were conspicuous by their absence, though the patient had vomited, and had experienced enough discomfort to keep her in bed for a few days. In some of the published cases—for example, those of DeLee (1904), Green-Armytage (1913), and Gordon Ley (1920)—haemorrhage was very great, and in that of Green-Armytage led to death before there was even time for laparotomy. By the time the present patient came to hospital she had had only a small amount of toxæmia, and not until the tents had caused slight displacement of the head from where it had been resting on the widely open uterus did more acute symptoms arise. By itself the macerated foetus lying among the intestines was not sufficient to produce any general peritoneal irritation. There was also no evidence that she had had any marked internal haemorrhage, although the site of the tear, transversely across the fundus from one corner to the other, was almost exactly that shown in the sketch of Green-Armytage's specimen.

When treatment was considered there was the choice of either doing subtotal hysterectomy, which would have been preferable if the patient had been older, or of repairing the tear, keeping in mind, of course, the possibility of further pregnancy and the likelihood of the scar giving way again in the later months. In Gordon Ley's case of repair the patient did become pregnant again within a short time, and was successfully delivered normally at full term without any fresh uterine damage; but the risk is considerable, especially if the patient lives far from adequate medical aid. In the present case the uterine scar was not likely to be very satisfactory, as there was not time to trim the edges and stitch the tear in the usual layers owing to the patient's very poor condition on the

table. She was only 17, and had not long been married, and though sterilization might have been performed her life would then have been miserable, owing to the social customs in her part of the country. She will therefore need very close attention should any sign of pregnancy again occur.

Difficulty in Diagnosis

The most difficult point in these cases is the diagnosis before operation. If there is much external bleeding without signs of peritoneal reaction accidental haemorrhage or placenta praevia is suggested, or if it occurs in the earlier months of pregnancy and the signs are mainly those of intra-abdominal haemorrhage, then a ruptured ectopic gestation or rupture of a poorly developed uterine horn may be the cause. Only in those cases in which the foetus can be felt without difficulty or moved under the abdominal wall is diagnosis easy. In this case, when the patient showed no signs of coming into labour after medical induction, and when no contractions of the uterine wall over the foetus could be made out clearly, the diagnosis of ruptured uterus was considered, but was thought most unlikely as she was a primigravida with tight abdominal walls, and the position of the foetus had remained as in an ordinary left occipito-anterior presentation, and she had seemed so well for the first three days in hospital. It was, however, the fact that the head of the foetus could be palpated easily through the fornices and, when the cervix was sufficiently dilated, through the os also, that had made one think such a diagnosis quite impossible.

Summary

1. A case of complete rupture of the uterus from indirect injury in a primigravida of 17 is reported.
2. Recovery occurred though operation was not performed until fourteen days after the injury.
3. Many of the classical signs and symptoms were absent.
4. Certain points in the aetiology, symptoms and signs, treatment, and diagnosis are considered.

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C. J. W. Bisdom (*Maandschr. Kindergeneesk.*, May, 1937, p. 332) records two cases of alcohol and nicotine intoxication in infants. The first was a male infant, aged 8 days, the first child of a mother, aged 17, who had drunk a whole bottle of port (250 grammes) in the course of twenty-four hours. The symptoms consisted in a state of deep sleep from which the child could not be wakened for twenty-four hours, after which he became normal again. Alcohol was found to be present both in the mother's and infant's blood. The second case was a breast-fed infant, aged 6 weeks, the child of very nervous parents. The mother had been in the habit of smoking twenty cigarettes a day. The child's symptoms were restlessness, vomiting, diarrhoea, rapid pulse, and circulatory disturbances. Nicotine was found in the mother's milk. Symptomatic treatment was applied and the infant recovered.