The fifth and sixth weeks were a period of rapid improvement. She was no longer incontinent at night; she could walk without support, knit simple patterns, carry on a conversation, and read women's periodicals, but was still unable to perform tasks which required concentration, such as the simplest mental arithmetic.

At the time of her discharge from hospital, nine weeks after operation, she could walk well but still had a slurred speech and some ataxy of both arms. An electrocardiogram showed anterior ischaemia of the left ventricle.

Discussion

The discussion in this case can be conveniently divided into three sections.

Ruptured Uterus.—This was a case of gradual and complete rupture of the uterus in a fit young woman near term, who had had one previous uncomplicated confinement, one curettage, and one spontaneous abortion. This was a most unusual occurrence, and naturally a predisposing factor was sought. The only positive factors which emerged from a careful study of the case notes were: (1) an apparently uncomplicated curettage in 1956, (2) a spontaneous abortion in 1957, and (3) attempted external cephalic version at the thirty-second week of this pregnancy. None of the usual causes of ruptured uterus such as dystocia, previous caesarean section or myomectomy, developmental uterine abnormality, intrauterine manipulation, or grand multiparity could be incriminated. It was felt that the three positive factors mentioned were unlikely to have been of aetiological significance, and one is left with the feeling that this was a spontaneous rupture through the lower uterine segment.

Cardiac Arrest.—The probable reason for the cardiac arrest was a combination of haemorrhage, reflex hypotension, impedance of the venous return to the heart by the head-down tilt, and manually controlled respiration. Under these conditions the smallest supplementary dose of thiopentone would be likely to deliver the *coup de grâce* to an already tottering circulation. The clinical picture which followed operation—namely, tonic fits superimposed on a decerebrate posture with initial pyrexia, not completely thermolabile—bore a striking resemblance to those cerebral injuries with brain-stem damage and a good prognosis (Maciver *et al.*, 1958). It would seem that in this patient, anyway, the period of circulatory arrest and subsequent oedema and hyperaemia caused diffuse cerebral damage not confined to the cells of the cortex alone. There is a paucity of accounts describing the neurological progression after cardiac arrest with ensuing cerebral damage, and the present case is therefore reported in some detail.

Follow-up.—Twelve months later the patient was a reasonable member of society. Her husband thought that the only change, so far as he was concerned, was that whereas previously she had been extremely quick-tempered she was now quite the reverse. She managed her routine tasks adequately, and other than complete amnesia for the events of the first two to three weeks in hospital her memory was unimpaired. She still had some cerebellar dysfunction, as shown by her rather slurred speech and inability to perform the "past pointing" test. She walked normally and had no dysdiadochokinesia. The electrocardiogram tracing was now normal.

Summary

A case of ruptured uterus of uncertain aetiology occurred in a young woman. Cardiac arrest complicated the concluding stages of an abdominal hysterectomy, and cardiac massage was performed. The patient, after a very stormy post-operative period, made a reasonable recovery, as shown by her general condition 12 months after the occurrence of this catastrophe.

We thank Mr. A. F. Clift, consultant obstetrician and gynaecologist at the Mayday Hospital, who performed the hysterectomy, for permission to report this case.

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DIFFUSE INTRAPERITONEAL HAEMORRHAGE FROM SURFACE VEIN OF A FIBROMYOMA

BY

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Rupture of a vein on the surface of a uterine fibromyoma is an extremely rare event despite the fact that fibromyomata are the commonest tumours in the uterus. In the first case to be reported (Rokitansky, 1861) the condition was discovered at necropsy of a girl who had died from internal abdominal haemorrhage. Other cases have been collected from the literature by Brunner (1910), 10 cases; Ernst and Gammeltoft (1922), 33 cases; and Hasskarl (1949), 60 cases.

Only five cases have been reported in the British literature in the past 50 years (Woodruff, 1948; Davies, 1950; Sheehan, 1951; McNeil, 1952). Few other cases have been reported in the world literature recently (Bosch, Carter, and O'Grady, 1950; Kaye and Ficarra, 1950; Rømer, 1951; Zajac, 1952; Li and Braden, 1952).

Aetiology

There has been much speculation regarding the factors which precipitate rupture of the veins on the surface of fibroid tumours. Trauma such as a direct blow to the abdomen, abdominal massage, a fall, or violent coitus, and injury to a vein by the sacral promontory have all been blamed. Increased intra-abdominal pressure may increase the venous pressure so much that the veins give way. Increased congestion of the tumour during menstruation has been blamed by Davies (1950). McNeil (1952) postulated that the source of bleeding may be torn adhesions between the tumour and the posterior peritoneum. In the report by Pineda (1945) of a case in which red-cell degeneration was found in the myoma, it was suggested that the extension of the degenerative process into the vessel wall had been responsible for rupture of the veins. In 2 out of 29 cases reviewed by Polacco (1932) the source of bleeding was arterial, and essential hypertension was regarded as the precipitating cause.

Twisting of the pedicle of a subserous myoma was held responsible in 10 out of 60 cases collected from the world literature by Hasskarl (1949). Pregnancy causes dilatation of the veins on the surface of fibroids

and thus makes them more likely to rupture. One of Greenhill's (1947) three cases occurred during pregnancy, and he collected from the literature 14 other such cases.

Clinical Picture

The condition produces acute abdominal symptoms which make an exploratory laparotomy imperative, but rarely has the correct diagnosis been made pre-operatively—for example, in only 4 of the 60 cases collected by Hasskarl. The usual diagnosis in these cases was ectopic gestation, torsion of an ovarian cyst or fibroid tumour, ruptured viscus, or acute appendicitis.

Treatment

The most usual operative procedure in the cases reviewed has been subtotal hysterectomy because of the bad general condition of the patient. In some cases total hysterectomy was performed and in others myomectomy. In one case, owing to the desperate state of the patient at the time of the operation, ligation of the bleeding vein was all that was done. The present case is considered worth reporting because of the rarity of the condition and because the age of the patient (22 years) is the youngest yet reported.

Case Report

A parous married woman aged 22 was admitted to Kasr-el-Aini Hospital on September 8, 1957, with dyspnoea and severe abdominal pain. She had had one abortion at four months and one full-term pregnancy. Menstruation reappeared six months after delivery. After two normal periods, there was amenorrhoea for 65 days, followed by bleeding for 30 days, and then she was suddenly stricken by severe abdominal pain while defaecating. The pain grew worse, and three hours later she fell to the floor unconscious. She regained consciousness after 20 minutes and asked for medical aid. A practitioner examined her and considered her pregnant with threatened abortion. He prescribed a sedative and advised rest in bed, but her pain became still worse and next morning she was admitted to hospital.

Physical examination revealed a short woman with a weak pulse of 120 a minute. The temperature was 37.5° C. She was very pale, and her skin was cold and covered by beads of perspiration. The blood-pressure was 90/60, and respirations 36 a minute. The chest and heart were normal. The abdomen was distended, with generalized tenderness and rigidity, most pronounced over the suprapubic region. On vaginal examination there was severe pain on moving the cervix and the fornices were very tender. The cervix was rather soft. There was fullness in the suprapubic region, but the outline of the uterus could not be made out owing to rigidity of the abdominal muscles and tenderness on examination.

Because of the sudden onset of pain, the amenorrhoea followed by bleeding, and the softness of the cervix a diagnosis of ruptured ectopic gestation with diffuse intraperitoneal haemorrhage was made. Under ether anaesthesia the abdomen was opened and the peritoneal cavity was found to contain a large amount of blood. The uterus was the size of a 16-weeks pregnancy and was soft and vascular. On the anterior wall of the uterus, near the fundus, there was a bruised area, on the surface of which was a bleeding vein. The vein was caught by pressure forceps and the blood was mopped out of the abdominal cavity. On further exploration a band of omentum was found, bruised at its free end, which was oozing. This band was clamped and ligated. The ovaries and the tubes were normal. On palpating the uterus, it was found to contain a myoma underneath the bleeding vein and many dilated veins were seen coursing over the surface of the uterus. A rubber tourniquet was applied around the body of the uterus and a myoma the size of a large orange was removed. Two small fibroid tumours were removed through the same incision. The endometrial cavity was opened and explored, but it did not contain any polypi. The enucleation cavity was closed, the peritoneal cavity was cleaned of blood, and a litre of blood was given during the operation and another litre after its completion.

The patient had a smooth convalescence and left hospital on the fourteenth post-operative day.

The pathological report stated that the three myomas removed from the uterus showed no evidence of degeneration or malignancy.

Comment.—In this case an omental band with haemorrhage from its free end was found; it must have been adherent to the surface of the uterus at the bleeding point, and been detached from the uterus while the patient was straining at stool. At the point of attachment of the omental band a dilated vein was coursing over the surface of the uterus. The vein was torn as a result and free intraperitoneal haemorrhage took place.

Summary

A case of diffuse intraperitoneal haemorrhage from the surface vein of a fibromyoma is reported.

The possible precipitating factors for the venous rupture are discussed.

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"I should like to emphasize this fact—that the law which we now have in Britain for the purpose of preventing cruelty in the laboratory was a sequel to a petition signed by Charles Darwin, Thomas Huxley, Jenner Owen, the President of the Royal College of Physicians, the President of the Royal College of Surgeons, and various other leaders of science and medicine. It was based on the recommendations of a Royal Commission which included among others Thomas Huxley, then President of the Royal Society, and Professor Erichsen, the surgeon. This law, which we still have, is badly drafted and difficult to understand, but it left a wide discretion to the Home Secretary and, with scientific guidance, that discretion was used to build up a humane and judicious tradition among laboratory workers. It has done a splendid job in the past, though the time has now come when the whole system needs to be modernized in order that it may continue to retain the confidence of biologists and at the same time give more assured effect to the three essential principles on which it is based and which are absolutely indispensable in any genuine system of control. These three principles are, first the licensing of experimenters, secondly the Home Office inspectorate, and thirdly the Pain Rule." (Major C. W. Hume, B.Sc., in *UFAW Courier*, Autumn, 1960.)