

Heterotopic Pregnancy Report of Two Cases

BY

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Concurrent intra- and extra-uterine pregnancy is rare, occurring in about one in 30,000 pregnancies (Winer *et al.*, 1957). A search of the hospital records in this group has revealed only one case during the past 11 years. This paper is concerned with two further cases seen within two months in this unit. The diagnosis of ectopic pregnancy may be the most perplexing in gynaecology—it becomes all the more difficult when dealing with heterotopic pregnancy. This is shown by the fact that the correct pre-operative diagnosis was made only once in the 39 cases reviewed from the world literature by Brody and Stevens in 1963. The failure of the clinician to recognise this potentially dangerous condition may lead (a) to increased maternal morbidity and mortality when the ectopic pregnancy is overlooked; and (b) to foetal wastage when the intra-uterine pregnancy remains undiagnosed and, therefore, perhaps mismanaged. Consequently, periodic emphasis in the literature and a high index of suspicion for this entity in atypical cases of multiple pregnancy, abortion and ectopic pregnancy is essential for a more frequent correct pre-operative diagnosis.

CASE 1

V.F., a 34-year-old gravida 6, para 3, was admitted on 6th August, 1964, complaining of slight vaginal haemorrhage for two weeks and intermittent lower abdominal pain for one week prior to the above date. Her periods occurred irregularly and her last normal menstrual period commenced on 1st June, 1964. She was other-

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wise asymptomatic. Past obstetrical history: She had had three normal term deliveries in 1949, 1950 and 1953 respectively, and spontaneous abortions in 1952 and 1962. No complications occurred.

General examination revealed a sallow thin female in pain. The temperature was 99.4° F., pulse rate 104 per minute, respiration 24 per minute and blood pressure 130/70 mm. Hg. The heart and lungs were normal. The lower abdomen showed slight distension with generalised tenderness and rebound tenderness in both iliac fossae. Bowel sounds were normal. Vaginal examination revealed an offensive, pink loss issuing from the cervical canal. The cervix was softened and undilated. The uterus was difficult to define accurately due to tenderness, but was thought to be retroverted and bulky. Both adnexal regions were tender with no obvious masses palpable.

Laboratory data: The white cell count was 13,000 with 80 per cent. polymorphonuclear leucocytes. The red blood count was 2.5 million with haemoglobin 8.7 gm. per 100 ml. The colour index was 1.18, packed cell volume 24 per cent., mean corpuscular volume 96 cubic μ , mean corpuscular haemoglobin concentration 36 per cent. The sedimentation rate was 35 mm. in one hour. Urinalysis and serum electrolytes were within normal limits. Serological investigations and chest X-ray were negative. Urine and cervical cultures were taken. The differential diagnosis at this stage was considered to be pelvic peritonitis secondary to septic abortion or salpingitis. The patient was put on the usual strict septic abortion regime and started on a course of penicillin and streptomycin while awaiting results of investigations. Sternal marrow biopsy was performed and a haematological opinion regarding the anaemia obtained.

The patient improved over the next four days, but on the fifth day a profuse vaginal loss of bright red blood occurred, followed by expulsion of fresh placental tissue. Resuscitative measures were necessary and a compatible transfusion of 1,000 ml. group O rhesus positive blood was administered. Examination under anaesthesia showed the uterus to be enlarged to eight weeks' size, and a cystic mass about 6 cm. in diameter in the right adnexum, while a thickened Fallopian tube was present on the opposite side. The mass was thought to be inflammatory in origin. Retained products of conception were obtained on curettage. The haematological investigations at this stage confirmed the diagnosis of megaloblastic anaemia due to folic acid deficiency.

While on treatment for the anaemia she experienced severe lower abdominal pain on the twelfth day. Pelvic examination revealed an increase in size of the right adnexal mass to approximately 10 cm. in diameter and exquisite tenderness on movement of the cervix. The haemoglobin dropped to 6.9 gm. Only at this stage was the possibility of concurrent uterine abortion and ruptured ectopic pregnancy considered and a laparotomy decided upon.

Laparotomy: The peritoneal cavity contained 700 ml. of dark ectopic blood, with much of it organised around the right adnexum, to which the bowel was adherent by fibrinoid adhesions. The right tube was thickened and distended with blood clot. Placental tissue extruded through a rupture of 2.5 cm. across in its ampullary portion. A foetus measuring 25 mm. in length was found in the middle of a large clot lying free in the peritoneal cavity. The left tube and ovary were healthy, the former containing a corpus luteum. Right salpingectomy was performed. A blood transfusion of 1,500 ml. was administered.

The post-operative period was uncomplicated and she was discharged on the ninth day with a haemoglobin of 12.8 gm. per cent. The pathological report confirmed the presence of placental tissue and of a ruptured right tubal pregnancy.

CASE 2

H.F., a 28-year-old para 1, was admitted as an emergency on 11th September, 1964, complaining of lower abdominal pain and shooting pains in her rectum for one week. The pain had been much worse and almost continuous during the 24 hours prior to admission. It was associated with fainting on one occasion. She also had a brown vaginal loss for five days. Her last menstrual period commenced on 18th July, 1964. Bowel and bladder functions had been normal.

On examination, signs of an intraperitoneal haemorrhage were present and the patient was considered to have a ruptured ectopic gestation.

Laboratory data: The haemoglobin was 10.3 gm. per 100 ml. and the white cell count 10,200 with a normal differential count. The packed cell volume was 29 per cent. and sedimentation rate 6 mm. in one hour. Urinalysis was normal.

Laparotomy: Blood transfusion of compatible group A rhesus positive blood was commenced. The peritoneal cavity contained 450 ml. of blood and a 30 mm. foetus lying quite free. The left tube was ruptured from the ampullary to the fibrial extremity. The uterus was enlarged to

the size of an eight weeks gestation. Both ovaries and right tube appeared normal. Left salpingectomy was performed. Post-operatively heavy sedation for 72 hours was given. Uneventful recovery followed.

The patient failed to report to the antenatal clinic until 14th December, 1964, when she was found to have a 22 weeks gestation. Pregnancy continued without complication. On 23rd April, 1965, a spontaneous normal vertex delivery of a healthy 7 lb. 12 oz. female infant occurred. When seen at postnatal clinic, both mother and baby were progressing satisfactorily.

ETIOLOGY

Several theories have been advanced explaining the etiology of combined pregnancy. DeVoe and Pratt (1948) postulate that this entity results from one fertilisation or two separate fertilisations within a relatively short space of time. This fails to explain Ludwig's (by DeVoe, 1948) two cases in which early ectopic pregnancies co-existed with viable intrauterine pregnancies. Winer *et al* (1957) are of the opinion that the majority of these cases are twin pregnancies which originate from a single coitus and have separate sites of implantation. They assume that because monozygotic twins cannot be partitioned and become implanted on different sites, all combined pregnancies result from the fertilisation of two ova from the same or different follicles in one or both ovaries. This is the concensus of opinion regarding pathogenesis.

Following intrauterine nidation, the transmigration of another fertilised ovum may be delayed by any of the factors responsible for single ectopic cyesis and result in heterotopic pregnancy (Brody and Stevens, 1963). Some authors also consider the possibility of superfecundation or superfoetation, but there appear to be no recorded proved cases of the latter in the literature (Bisca and Felder, 1960). Studdiford (1936) suggests that such reported cases represent abnormal development of one foetus of a twin pregnancy.

COMMENT

It is not the purpose of this paper to evaluate signs and symptoms or diagnostic procedures, as a comprehensive account of these will be found elsewhere (Schaefer, 1962; Winer *et al.*, 1957). Prior to 1935 the maternal mortality was as high as 19 per cent. (Winer *et al.*, 1957). This has been lowered in the last decade to 0.98 per cent. (Schaefer, 1962) due to earlier diagnosis, prompt operation and blood transfusion. Of the fully documented cases, the foetal mortality of

the intrauterine pregnancies has been quoted as 70 per cent. and 56.2 per cent., while the extra-uterine pregnancies show a foetal loss of the order of 90 to 95 per cent. (Reeves and Savarese, 1954; Winer *et al.*, 1957). Burkhart *et al.* (1963) in a review of combined pregnancies which progressed simultaneously to viability, discovered only 13 cases in the literature in which both infants survived beyond the neonatal period. Congenital malformations of the foetus are more common in combined pregnancies (Burkhart *et al.*, 1963). The effect, however, of prolonged severe hypoxia associated with a ruptured ectopic gestation on the uterine foetus appears to be negligible (George and Daub, 1964).

The clinical picture in case 1 was complicated by megaloblastic anaemia due to folic acid deficiency. The latter condition is more frequent in multiple pregnancy, but it nearly always occurs in the last trimester only (Lewis, 1964). It has not been previously reported in association with heterotopic pregnancy or in the first trimester.

SUMMARY

Two cases of heterotopic pregnancy are reported in which only one infant survives.

The infrequency with which the correct diagnosis was made pre-operatively is emphasised.

The possibility of heterotopic pregnancy must be considered in every case of multiple pregnancy, ectopic pregnancy and abortion in which there is any deviation from the expected clinical course. A search of the literature has failed to reveal any recorded case of megaloblastic anaemia occurring in association with heterotopic pregnancy.

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