FULL-TERM PREGNANCY IN THE RUDIMENTARY HORN OF UTERUS

A Case Report

by

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Pregnancy in the rudimentary horn of the uterus was first described by Mauriceau and Vassal in 1669. Ectopic pregnancy in rudimentary horn of uterus comprises 0.1% of all ectopic gestations. (Jarcho 1949). Various cases of full-term or near full-term pregnancies in rudimentary horn have been published during the past 50 years. (Wells, 1900; Andrews, 1907; Potock, 1900; Hollander 1913; Quain 1913; Roberts 1906; White 1919; Humpstone 1920; Lewis 1927, Rutherford and Morgan 1934.).

The female genital tract is developed by the fusion of the two Mullerian ducts. Various degrees of maldevelopment, ranging from uterus didelphys to bicornuate uterus with rudimentary horn, are observed depending upon the degree of failure of fusion and development. The more complete the uterine duplication the less likely is the dystocia. As there is no communication between the two horns, pregnancy in rudimentary horn is a very serious occurrence, since normal delivery is impossible. The course of pregnancy occurring in the rudimentary horn of the uterus varies with the degree of development of the horn. At one extreme the maldeveloped horn is only slightly smaller, at the other extreme the horn is so small as to be readily overlooked.

The usual termination of pregnancy in the rudimentary horn is rupture, which according to Kehrer occurs in 47% and according to Werth in 40% of cases. Torsion of gravid horn is an occasional complication. If musculature of the rudimentary horn is poorly developed, as is usually seen, the rupture occurs within the first 4 months and may lead to death due to intraperitoneal haemorrhage. This result was noted in 87, 47.6 and 55 per cent of the collected cases by Sanger, Kehrer, and Backman respectively in 1883, 1900, 1911. On the other hand, if the muscle tissue is abundant, as in this case the pregnant horn may hypertrophy and pregnancy may go to full-term. In such a case if the foetus is not removed by operation it will undergo the same changes as a foetus in secondary abdominal pregnancy and will be converted into a lithopedion.

Cases of pregnancy in the rudimentary horn of uterus were reported by many. First case was reported by Mauriceau and Vasal in 1669. Kehrer

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collected 84 cases from literature in 1900, and Beckmann, in 1911, found 146 cases. Mulsow (1945) was able to find only 9 cases since Beckmann's review in 1911. In 1955 Franklin, N. Reyner and Watchler reported a case of rupture of rudimentary horn of the uterus bicornis unicolis diagnosed as ruptured ectopic where the pregnancy had continued upto 4½ months. In 1959 Elmer Gregely, D. J. Mason, Browkhyn reported a case of pregnancy in the rudimentary horn of the uterus where it was diagnosed as missed abortion. In 1959 Goldman Benjamin Eckerling (Israel) reported a case where the pregnancy was much advanced, foetus was 22 cms. An early case was reported by John H. Fisher in 1960. Robinson reported a case of ruptured pregnant horn at 32 weeks. Hingorani and K. Pasricha reported ruptured pregnant rudimentary horn at 4 months in 1962.

Majority of cases as we find from above references are early rupture by 4 to 5 months of pregnancy, but still a few cases of full-term pregnancy are reported. Only reported living child delivered from rudimentary horn of uterus was by Serejnikoff in 1898, but the child died 6 hours after birth. M. Scholtz, in 1951, reported a full-term pregnancy in the rudimentary horn in a case who was attending the clinic regularly. The child was born alive as the patient was subjected to caeserean section, because of associated complications of toxaemia, postmaturity and vaginal bleeding. The case reported here came to the hospital because she did not feel the foetal movements for two months.

Case Report

The patient, name XYZ, aged 20 years, Hindu female, was admitted in Mure Memorial Hospital on 9-1-1963, Nagpur, with the complaint of amenorrhoea of 11 months, and loss of foetal movements since two months. There was no pain in abdomen and no vaginal bleeding. Her menstrual history was regular 4/30 and there was no history of dysmenorrhoea. She had been married for 2¾ years only. Her general condition was quite satisfactory. Heart and lungs were normal. B.P. 110/70 mm. Hg. Abdominal findings — Uterus was 32 weeks in height, breach presentation and foetus felt very superficially. Cranial bones were soft and bony crepitus was present. There was no tenderness in the uterus and round ligaments were not palpable. Foetal heart was not heard.

P.V.—The body of uterus slightly bulky and very much deviated to the right. The uterus was extremely mobile. The cervix was soft and external os was tightly closed.

Investigation

HB% — 10 Gms% Blood group — B. X-ray of abdomen showed extended breech. Foetus more towards the left side and part of the pelvis was empty. Spalding's sign was markedly positive. Two pitocin drips, containing 2.5 units of pitocin in one pint of glucose saline, were given on two consecutive days, as the case was diagnosed as intrauterine death of foetus. As the pitocin drip failed to induce labour the case was referred to me. I diagnosed this case as full-term secondary abdominal pregnancy. Pitocin test by giving 5 units of pitocin intravenously was carried out but there were no Braxton Hicks contractions in the gestation sac nor were there any changes in my p.v. findings.

Treatment

The recommended treatment is to amputate the horn. This operation was first performed by Sanger in 1883 and has been repeated on many occasions with constantly improving results. Kehrer reported 44 cases in 1900 and Beckmann reported a large series with mortality 13.4 and 4.3 respectively.

In this case under spinal anesthesia

abdomen was opened by midline subumbilical incision. A purple coloured muscular sac which was very mobile was seen when the abdomen was opened. The sac was more on the left side, the left tube and the left ovary were absolutely normal. The round ligament ended on the lateral side of the sac as also the tube. This was a guide that it was not a secondary abdominal pregnancy but pregnancy in the rudimentary horn or pregnancy in uterus bicornis unicolis. The latter was ruled out as gestation sac was attached to the main horn with a fibrous band at the level of the isthmus. The sac could be easily separated from the uterus and was removed with the left tube; the ovary being normal was retained. The uterus was slightly bulky, as the development of pregnancy in rudimentary horn is associated with formation of decidua in the non-pregnant horn. The sac was 19 centimetres by 15 cms. with ¼" thick muscular wall. It weighed 5 lbs. 6½ ozs. There was no liquor amnii in the sac. The foetus was macerated and weighed 5 lbs. It was a female baby with no external congenital abnormality. Microscopically the wall of the sac contained muscle fibres. Post-operative period was uneventful, and the patient was discharged on 15-2-1963.

Discussion

There are three interesting and important points in this subject:—

(1) The diagnosis.
(2) The mode of nidation of the fertilized ovum in the rudimentary horn of the uterus.
(3) Associated urinary tract abnormality.

Diagnosis. There are certain points which may guide to diagnose pregnancy in the rudimentary horn of the uterus in early period.

(1) Abdominal pain occurs as late as 4 to 5 months of pregnancy.
(2) On palpation the tumour is felt distinct from the uterus but attached to it by a pedicle.
(3) The tumour is often of marked mobility.
(4) Abuldase (1911) pointed out absence of pain and tenderness on examination in contrast to tubal pregnancy.
(5) Palpation of round ligament distal to the tumour is considered to be an important feature by Quain (1913).

In early months the correct diagnosis was made in 20% of Kehrer's cases. The preoperative diagnosis in early pregnancy is possible only when the condition is thought of. In later months the diagnosis is usually made as secondary abdominal pregnancy when usual methods of induction of labour have failed. Munro Kerr was of the opinion that many advanced abdominal pregnancies are in reality cases of rudimentary horn gestation with anatomical features obscured by hemorrhage and adhesions. Once the diagnosis of secondary abdominal pregnancy is made the extreme mobility of the supposed uterus should raise the suspicion of pregnancy in the rudimentary horn of the uterus. In secondary abdominal pregnancy, because of adhesions, the uterus is not mobile but in the case of pregnancy of the rudimentary horn the normal horn is very mobile, the reason being, the normal horn is held by only one tube and one round ligament, and the other tube and round ligament end on the rudimentary horn. This diferrence was very striking in three advanced abdominal pregnancies — e.g.

(1) Intraligamentous full-term pregnancy.

(2) Full-term secondary abdominal pregnancy.
(3) Full-term pregnancy in the rudimentary horn of uterus, which I came across in a very short period of one year.

Nidation of Fertilized ovum in the rudimentary horn

The connection between the horn and the uterus is by fibromuscular band 2-6 cms. long and is usually attached to the normal horn at the level of the isthmus. In 78% of 84 cases collected by Kehrer the proximal end of the rudimentary horn did not communicate with the uterine cavity. Piquand affirmed in 1910 that there is a canal in 15% cases and is only observed when the uterus approaches bicornis unicolis.

Most of the people believe, and it is also mentioned in text books, that the spermatozoon ascends the normal horn and the fallopian tube and crosses the peritoneal cavity to fertilize the ovum. The fertilized ovum gets into the rudimentary horn. This explanation of transmigration of spermatozoon, is not believed by Letto and Norman. They think it improbable that one spermatozoon can fertilize an ovum and it is unlikely that sufficient number of spermatozoa can toil their way across the peritoneal cavity. Normally a large number of spermatozoa are essential for sufficient quantity of hyaluronidase to dissolve the corona radiata. They believed that the canal of the rudimentary horn is occluded after pregnancy in the rudimentary horn. This view is supported by J. Chalmer. He demostrated the presence of canal by hysterosalpingogram in his case and in another a canal about the size of fallopian tube was present.

Associated Congenital Abnormality of Urinary Tract

It is an accepted fact that congenital abnormality of genital tract is quite often associated with congenital malformation of urinary tract. In this case intravenous pyelography was done which showed absence of kidney on the left side i.e. on the same side as the rudimentary horn of the uterus. In Scholtz's and Reyner's case there was no congenital abnormality of urinary tract, and in the majority of cases reported no mention about this fact has been made.

Summary

(1) A full-term pregnancy in the rudimentary horn of uterus is reported.
(2) Literature is reviewed and diagnosis and mode of niadation of fertilized ovum is discussed.

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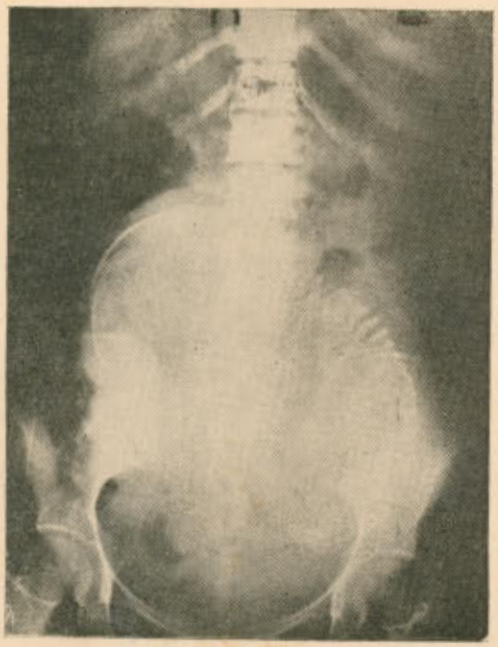

Fig. 1
Plain x-ray of abdomen.

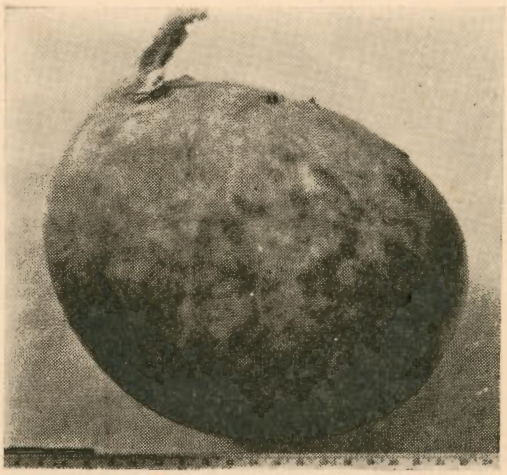

Fig. 2
Ovisac with placenta and foetus in the sac.

Fig. 3
Foetus and placenta seen after opening the ovisac.

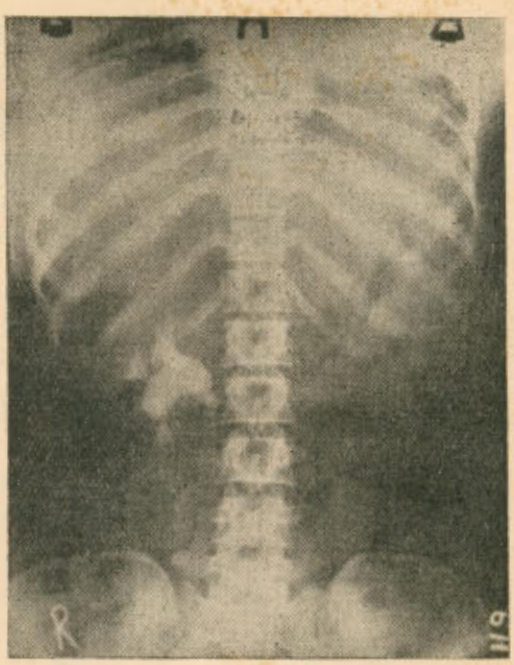

Fig. 4
I.V.P.-patient had full-term pregnancy in rudimentary horn of uterus.