

RUPTURE OF THE UTERUS AND THE URINARY BLADDER WITH THE ESCAPE OF THE FEETUS INTO THE BLADDER

by

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Rupture of the lower uterine segment is occasionally complicated by laceration of the wall of the urinary bladder. This injury is possible because of the close anatomical relations of the genital tract with the bladder. Escape of the foetus into the bladder through such a laceration is an extremely rare occurrence. Three such cases could be traced from the literature, the first by Devi (1962), second by Bird (1964) and third by Gogoi (1968).

CASE REPORT

Mrs. N., aged 30 years, was admitted on 5-9-69 at 7.00 p.m., as an emergency case, with a history of 9 months' amenorrhoea and labour pains since 12-00 noon. She gave a history of rupture of membranes at 12-00 noon, and prolapse of the hand at 2-00 p.m. Obstetric history. 3 F.T.N.D. living and one full term breech which was a stillbirth, last delivery was 3 years ago, Past menstrual history—menstrual cycles were regular. L. M. P.—9 months back. Exact date was not known.

On examination, the patient was restless. There was marked pallor of the tongue and nails. Pulse 124/mm., regular, volume and tension—moderate; B. P. 110/70 mm. of Hg.; temp. 103°F. Very unusual shape of the abdomen was noticed. There was an oval swelling, extending

transversely upto the flanks and vertically upto the level of the umbilicus. This swelling appeared to be continuous with another swelling which was extending upto the hypochondrium and had the configuration of retracted upper uterine segment. There was a groove between the two swellings. The foetal parts were palpable in the lower swelling, which was tense and tender. The uterine contractions were absent and foetal heart sounds were not heard. The foetal hand was prolapsed from the vagina. There was no vaginal bleeding. Vaginal examination was not done.

On catheterisation, frank blood came out. A diagnosis of ruptured uterus was made and a laparotomy was decided upon. Unfortunately, it was not possible to get blood for her immediately.

Under general anaesthesia, the abdomen was opened through a left paramedian incision. Surprisingly, there was no blood in the peritoneal cavity. The upper swelling, which appeared to be the upper uterine segment was smooth and firm and the lower swelling was thin-walled, with a bluish tinge. The utero-vesical pouch of peritoneum was just below the level of the umbilicus. Incomplete rupture of the lower uterine segment was suspected. An attempt was made to dissect the vesico-uterine fold of peritoneum, but it was not possible. Then a transverse incision on the anterior wall of the lower swelling was made, thinking that it was the incomplete lower uterine segment rupture. Surprisingly, foetal parts and the catheter came into view. A fresh stillborn female foetus, weighing 6 lbs., was extracted through the cystostomy incision. The foetal head and one hand with part of the trunk was in the bladder, and the rest of the foetus was inside the uterine cavity (fig. 1). The whole of the interior of the enormously stretched bladder could now be inspected,

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The umbilical cord could be followed upwards through the torn bladder and torn lower uterine segment to the placenta which was lying in the upper uterine segment. The placenta was delivered by cord traction. There was a vertical tear in the bladder (from the base to the urethrovesical junction) and a vertical tear in the lower uterine segment which extended down into the vagina (colporrhexis). There was profuse bleeding from the tear in the lower uterine segment.

It was decided to do a total hysterectomy, but there was difficulty in separating the lower uterine segment from the injured bladder because of the softness and friability of the parts. In the meantime, the patient's condition became very poor and so, a subtotal hysterectomy was done. Then, the rent in the lower part of the lower uterine segment and the upper vagina was sutured with continuous cat-gut stitches. The rent in the bladder wall was sutured. Lastly, the incision of the anterior bladder wall was sutured. Suprapubic drainage was put in at the lower end. One bottle of blood was transfused during the operation. The condition of the patient was very low during the operation. The blood pressure and pulse were not recordable and noradrenaline drip had to be started. Post-operatively, the condition of the patient did not improve in spite of a second blood transfusion. She expired at 4.15 a.m. on 6-9-1969.

Summary and Comments

A case of rupture of the lower uterine segment and urinary bladder with the escape of the foetus into the bladder is reported.

As a result of obstructed labour due to shoulder presentation with hand prolapse, the lower uterine segment becomes thin and attenuated and is likely to rupture. The rupture of the urinary bladder with escape of the foetus into it is likely to occur when it is distended and lifted up into the abdominal cavity in cases of obstructed labour.

Thirty cases of ruptured uterus have been treated in this hospital from 1964-1969. In 4, the urinary bladder was involved, the case described here is the only one where there was escape of the foetus into the ruptured bladder.

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See Fig. on Art Paper VIII

Her menstrual cycles have been always regular.

Obstetrical history revealed that she had six full term normal deliveries, four were living, two males and two females. Last delivery was four years back.

Condition on admission. The patient was very anaemic and restless, tongue was dry and coated, pulse 144/min., temp. 101°F. B.P. 110/70 mm. Hg. She was in acute distress and was not co-operating. On abdominal examination there was distension of the lower abdomen. Due to marked rigidity and tenderness no definite lump could be felt. Vaginal examination under general anaesthesia revealed that the external os was closed, cervix was pointing backwards, uterus was anteverted and anteflexed, 12 weeks' size, mobile and the fornices were free. A vague lump was felt high up on the left side in the lower abdomen. There was no vaginal bleeding. She was diagnosed as a case of threatened abortion with peritonitis and was given broad spectrum antibiotics, gastric aspiration and intravenous fluid. The tenderness and distension of the abdomen was less, but the pain and fever persisted. In view of her persistent pain, fever, abdominal tenderness and fresh symptom of vaginal bleeding it was decided by us to re-examine the patient under anaesthesia.

Investigations

Hb. 6.5 gms%, R.B.C. 1.8 millions/Cu. mm., T.L.C.—10,500/cu. mm., D.L.C.—poly—75%, lympho-25%, Urine—N.A.D.

Operation notes: On 1-3-69 under general anaesthesia, vaginal examination revealed that cervix was pointing backwards, uterus was anteverted and anteflexed, fourteen weeks' size, soft and globular, mobile; fornices were free and no mass was felt in the fornices. On speculum examination there was bluish discoloration of the cervix with blood-stained discharge coming through the os. Needling was done through the left fornix; old clotted blood was aspirated, so a laparotomy was decided upon. The length of the uterine cavity was four inches. Dilatation and curettage was done to find out the decidual reaction and thick long pieces of decidual cast came out which was confirmed by microscopic examination. Laparotomy was done without blood trans-

fusion as it was not available. On opening the abdomen the peritoneal cavity was filled with old blood and blood clots. On exploration, the uterus was soft and of 14 weeks' size and the right tube and ovary were normal. On the left side, a ruptured accessory horn was attached to the normal uterus by a broad base, 3½ cms. long. The size of the accessory horn was 8 x 8 cms. and it had ruptured at its upper end. The placenta and blood clots were found inside the cavity of the rudimentary horn and the round ligament was attached lateral to it. The left tube and ovary were attached to the left horn supero-laterally. The foetus, 16 cms. long, was lying free in the peritoneal cavity with the cord attached to the placenta. The ruptured horn was excised along with the left tube and ovary (Fig. 1). The uterine wound was closed by interrupted catgut stitches. There was no communication between the cavity of the horn and the uterus which was confirmed later by microscopic examination when no evidence of canal was seen. On the right side, tubal ligation was done. The post-operative period was uneventful, during which period antianaemic treatment was given. She was discharged on 20-3-69. Intravenous pyelography showed normal kidneys, ureters and bladder.

Discussion

The exact mode of nidation of the ovum in the rudimentary horn is controversial.

In 78% of 64 cases collected by Kehrer (1900) the proximal end of the rudimentary horn did not communicate with the uterine cavity; the specimens were not, however, examined histologically. Piquand affirmed in 1910 that there is a canal in 15% cases and is only observed when the uterus approaches the bicornis unicollis type. Quain (1913) observed that in 20% cases the mucous membrane of the rudimentary horn communicated through a minute canal with the uterus. Transmigration of spermatozoa does occur

in more than half of the cases observed and the corpus luteum is found in the ovary of the normal uterine side. Kishore and Phatak (1960-61) and Narayan Rao (1963) demonstrated a fine tunnel by which the rudimentary horn was connected to the uterus. Howard John (1961) mentions the possibility of a microscopic connection between the horn and the uterus which is not observed macroscopically in a good many cases.

Munro Kerr suggested that the rudimentary horn does not communicate with the uterine cavity and the pregnancy in the horn is then said to occur by transperitoneal migration of the spermatozoa or of the fertilised ovum. The fertilised ovum gets embedded into the rudimentary horn where it grows and develops. Latto and Norman (1950) are of the opinion that the canal of the rudimentary horn is patent before pregnancy in almost every case and is occluded after pregnancy occurs for the following reasons:

1. It is improbable that one spermatozoon can fertilise an ovum and for fertilisation to occur by migration of spermatozoa several millions of them would have to cross the peritoneal cavity for a sufficient quantity of hyaluronidase to dissolve the corona radiata and it is unlikely that a sufficient number of spermatozoa can find their way across the peritoneal cavity. Latto's view is supported by Chalmer (1950) by histological examination of the connecting band to determine its patency and also confirmed the same by hysterosalpingogram. The canal could easily have been occluded by the tissues reacting to the developing syncytium and by the fibrin laid

down in the small haemorrhage. To a lesser degree a similar occlusion can be found in the fallopian tube in tubal pregnancy.

2. Transmigration of the ovum is unlikely as in most reported cases the corpus luteum has been found on the same side as the rudimentary horn.

A correct diagnosis is extremely difficult as great similarity exists between these cases and extrauterine pregnancy. A preoperative diagnosis was correct only in 20% of Kehrer's series and in 20/22 in Latto and Norman series. There are certain points which may guide one to diagnose pregnancy in the rudimentary horn of the uterus in the early period.

A preoperative diagnosis should be possible in most of the cases if it is remembered that the clinical picture is that of a classical ruptured ectopic pregnancy preceded by 16-22 weeks' amenorrhoea. The abdominal pain and vaginal bleeding occur as late as 4-5-months of pregnancy. On palpation the mass is felt separate from the uterus but is attached to it by a pedicle. The tumour is often of marked mobility. Albus (1911) pointed out that the absence of pain and tenderness on examination in contrast to tubal pregnancy should arouse the suspicion of pregnancy in the rudimentary horn.

In later months, the diagnosis of secondary abdominal pregnancy is made as the signs and symptoms in both are the same except for the absence of superficial foetal parts. The extreme mobility of the non-pregnant uterus should arouse the suspicion of pregnancy in the rudimentary horn. In secondary abdominal pregnancy, the uterus is not mobile

due to adhesions. The separation of the gravid horn from the uterus can generally be appreciated especially in the early months but later when pregnancy advances the latter may be mistaken for the pregnant uterus and the non-gravid horn may be mistaken for a pedunculated myoma or an ovarian tumour. At the time of operation, the round ligament will be seen to run in the wall of the gestation sac while in tubal pregnancy the round ligament joins the uterus and not the gestation sac.

The condition is dangerous as the foetus can never be born normally per vaginam. The usual termination of pregnancy in the rudimentary horn is by rupture which according to Kehrer occurs in 47%, and according to Latto and Norman in 90%. The usual time of rupture according to Latto and Norman is between 16-20 weeks.

The course of pregnancy in the rudimentary horn is variable and depends upon the development of the horn. At one extreme the maldeveloped horn is only slightly smaller than the other developed horn and at the other extreme the horn is so small as to be readily overlooked. In most of the cases rupture occurs because of poorly developed muscular and mucous coats. The poor decidual reaction fails to provide the natural barrier to chorionic invasion.

On the other hand, if the muscle tissue is well developed, the pregnant horn may hypertrophy and pregnancy may go to term in 10% of cases, as reported by Tamasker (1963) and Subhadra Devi (1961). In such cases if the foetus is not removed it will be converted into a lithopaedian.

The only reported case of a living

child delivered from a rudimentary horn was by Serejni-Koff in 1898 but the child died 6 hours after birth. Scholtz and Rayner in 1951 also reported a full term pregnancy and a living child born by caesarean section in a rudimentary horn. The case was attending regular antenatal clinics. The caesarean section was done because of associated complications of toxæmia, postmaturity and vaginal bleeding.

Associated Urinary Tract Abnormality

Sometimes, there is associated abnormality of the urinary tract. In Scholtz's and Reyner's (1951) cases there was no congenital abnormality of the urinary tract and in the majority of cases reported no mention about this fact has been made. In the case reported by Tamasker (1963) there was absence of the kidney on the same side as the rudimentary horn of the uterus, but in our case there was no urinary tract abnormality.

Summary and Conclusion

1. A case report of a ruptured pregnant rudimentary horn and review of literature are reported. The mode of fertilisation in the present case was transmigration of the fertilised ovum from the opposite side as there was no communicating canal between the uterus and rudimentary horn which was confirmed by microscopic examination. The corpus luteum was present in the right ovary.

2. The main feature of this case was amenorrhœa of sixteen weeks associated with a history of severe abdominal pain and later on vaginal

bleeding. This was more in favour of pregnancy in a rudimentary horn that in the fallopian tube.

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See Fig. on Art Paper VIII