



DEATH DUE TO UTERINE RUPTURE A CASE REPORT SARAVANAN

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Abstract : In this modern era, obstetric care has improved exponentially even in primary health care level. However, mortality due to uterine rupture is still prevalent in obstetrics practice. Here, we have a case of a 35 year old primigravida, brought for autopsy, which died due to spontaneous rupture of bicornuate uterus. This paper reviews the prevalence and causes of rupture of uterus with a forensic point of view. The autopsy findings and the substantiating evidences are also discussed.

Keyword : Uterine rupture, bicornuate uterus, Hemorrhagic shock and death.

Introduction:

The risk for pregnancy associated death was high raised among the female aged 35 or older and among the black. On 7th September, 2012, a 35 year old female dead body was received for autopsy in our hospital. She had got married 12 years ago, after a long period of infertility; she got pregnant with assisted reproductive technique. She was in her second trimester of pregnancy. As per history given by the police, at 5th month of amenorrhea, she had abdominal pain and was admitted in a Private Nursing Home by her obstetrician. On examination, her abdomen was tense and the uterus was of 18 weeks size. Per vaginal examination showed that the cervical os was closed. There was no discharge per vaginum. Ultrasonogram revealed single intrauterine fetus of about 21 weeks and chocolate cyst in the right ovary. Few hours after admission, suddenly her general condition got worse. She was referred to higher institution, but on arrival she was declared, "Brought dead". The body was submitted for autopsy.

Postmortem examination:

A moderately nourished female dead body with pale finger nails without any external injuries on the body. On opening the abdomen, abdominal cavity contained 2200 ml of fluid and clotted blood; a dead male fetus was lying amidst the intestinal coils with the umbilical cord attached to the placenta which was adherent to the fundus of the ruptured uterus. (Fig 1 and 2)

(Fig-1) Abdominal cavity showing fluid and clotted blood



(Fig(Fig-2) Abdominal cavity showing male fetus lying amidst the intestinal coils.



Uterus was enlarged, 16 x 12 x 5 cm; weighed 630 grams. An horizontal, irregular rupture of 7.2 cm on the upper part of fundus of the uterus exposing the 2 – 1 cm marginal portion of the placenta, which was detached from its attachment on the upper part of fundus of the uterus. (Fig 3 and 4)



1) Abdominal cavity showing fluid and clotted blood

The ruptured margin of the upper part of fundus of the uterus was irregular with extravasation of blood into the adjacent myometrium of the ruptured uterus. The thickness of the fundus at the ruptured margin was 0.4 cm and thickness of the body of the uterus was 3.2 cm. On further dissection: the uterus was bicornuate; the empty left side uterine cavity was 4 x 3 x 1 cm, with pale endometrial surface. The placenta weighed 70 grams, and was attached to the anterior and upper surface of right side uterine cavity; the cervical canal was single; the umbilical cord length was 31 cm; the fetus was 24 cm in length, 340 grams, male, with the features of 5 months intrauterine life. On dissection of heart, all the chambers contained few grams of clotted blood. Both the Lungs and all the abdominal organs were pale. Tissue bits from site of rupture of the uterus were sent for Histopathological Examination. We opined that the deceased would appear to have died of Haemorrhagic shock due to Rupture of uterus.

Discussion:

Definition:

Uterine rupture is defined as complete or full thickness dissolution in the continuity of all the layers of uterine wall at any time of pregnancy, which may endanger the life of mother and / or fetus¹.
2. Incidence: It depends on the standards of obstetrics care and majority occurs in multipara³. It is generally associated with mullerian anomalies in nulliparous⁶. Classification:

1. Spontaneous

2. Iatrogenic

In both the types, rupture may occur both during pregnancy and during parturition. Multipara, congenital malformation of uterus, abruptio placentae, obstructed labour and previous uterine scars are the causes for spontaneous ruptures. Multiparity is one of the known risk factor of ruptured gravid unscarred uterus. Golan et al. reported that in 31% cases the rupture of uterus occurred in female with parity of more than five. Kolala S. Gurudat et al. reported a case of a women who got pregnant for fifth time and who had undergone all full term normal deliveries but died due to spontaneous rupture of unscarred gravid uterus.. Spontaneous uterine rupture during pregnancy usually involves upper segment and generally occurs in the second half of pregnancy. External and internal cephalic version, manual removal and drugs like oxytocin and prostaglandins are the iatrogenic causes¹.

Pathology:

Incomplete ruptures occur from rupture of lower segment of uterine scar or extension of cervical tear into lower uterine segment. Complete rupture results from disruption of upper segment scar. It may occur in both obstructive and non-obstructive labour. Although the posterior fundus is considered as the weakest part of the uterus, ruptures most commonly occur in lower anterior segment during labour and at the fundus during pre labour associated ruptures. Spontaneous rupture is more often complete than incomplete and traumatic rupture is more often incomplete than complete. The fetus generally dies because of effect of uterine retraction upon the uteroplacental circulation³. Congenital uterine anomalies are also risks for uterine ruptures. In one series, five cases were identified in primiparous women with bicornuate uterus². In our case also the victim was primipara and she had bicornuate uterus. While reviewing the congenital defects of uterus, Mullerian Duct Anomalies results in malformations of female reproductive tracts. They are uterus didelphys, uterus bicornisbicolis, uterus bicornisunicolis, uterus septus, uterus subseptus, arcuate uterus and unicornuate uterus. Uterus bicornis or bicornuate uterus may have single vagina with either single or double cervixes⁴. In these anomalies uterine musculature may be weaker than the normal uterus. They complicate at prenatal period or during delivery. Bicornuate uterus has the 55% pregnancy outcome before surgical correction and 75% after surgical correction. Laparoscopy, chromosomal studies and radiological investigations are helpful to establish these anomalies. If this investigations have not been done earlier, obstetric complications may reveal them later.

Management:

Early diagnosis of uterine rupture saves both the mother and fetus. During pregnancy, patient may have dull abdominal pain and tender abdomen with slight vaginal bleeding. There is some sense of giving way in the abdomen. The diagnosis is established by the presence of features of shock, acute tenderness and palpation of fetal parts. It is confirmed by laparotomy¹. After resuscitation, laparotomy is the choice for both diagnosis and treatment. Hysterectomy is the preferred surgery, unless there is sufficient reason to preserve the uterus.

Autopsy:

In general, post-mortem regarding any maternal deaths must be conducted in detail to rule out any injury. If any external or internal injuries are present, the autopsy surgeon should visit the scene of crime. In this case, the rupture of uterus suggestive of violence could be due to either blunt force injury to the abdomen, neglect of the doctor's advice or negligence of the doctor. The post-mortem examination is vital in establishing the cause of death, which would be reflected in the maternal mortality, and evaluation of maternal health. In the earlier studies, it was revealed that, up to 30% of discrepancies were present between the clinical diagnosis and autopsy findings. But one of the newer studies, there was discrepancies between the clinical and post-mortem diagnosis only in 15% of the cases. Thorough evaluation of pregnancy associated maternal deaths involves gathering of medical and obstetrical history, review or conduct of laboratory diagnostic tests, and complete autopsy with toxicological and Histopathological analysis. In situation, where medical certification of cause of death is not possible, there is provision of verbal autopstechniques to arrive at the cause of death⁷.

Conclusion:

Rupture of uterus in primigravida, in early trimester, usually occurs in congenital anomalies of uterus like bicornuate or unicornuate uterus with or without rudimentary horn⁵. Traumatic rupture needs to be differentiated from non-traumatic rupture. In the former, uterus is often ruptured in the fundic region. It is theorized that during blunt force impact, amniotic fluid will distribute the pressure relatively equally in all the directions of the rupture, if it occurs, will be at the weakest point, which is most commonly at the fundus. But in the latter type, rupture preferentially occurs in the region of already weak uterine wall. Risk factors for non-traumatic or therapy related rupture of uterus may include previous caeserian section, increased gestational age and use of uterotonic drugs like oxytocin and PGs⁸. Eventhough, if uterine rupture associated with contusion of the uterine wall or associated with injury to other abdominal organs is strongly suggestive of unnatural manner of death. Absence of any mechanical injury to either the anterior abdominal wall or the uterine wall would only suggest non-traumatic uterine rupture. So the following recommendations for autopsy of uterine rupture cases are suggested:

1. Obtain complete obstetric history besides eliciting any history suggestive of direct or indirect injury to the abdomen or the uterus itself;
2. Complete, meticulous external and internal examination of the dead body must be performed to rule out any traumatic cause for the rupture of the uterus;
3. Preserve tissue bits for Histopathological examination from all the relevant organs;
4. Make effort to either identify or rule out any congenital anomaly of the uterus.

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