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Socio-demographic and obstetric profile of Uterine rupture cases

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Abstract
In obstructed labor, as expulsive forces try in vain to expel the fetus, the patient becomes restless and complains of constant pain over the lower part of uterus while uterine contractions tend to become more and more tetanic. Patient is anxious and in agony, she is exhausted, the tongue is dry. Pulse becomes more rapid, temperature rise slightly. There is vertical stretching and thinning of lower uterine segment. The retraction ring of Bandl is now seen over the uterus above the symphysis running transversely across. The longer the duration of protracted labor, higher is the abdomen. Round ligaments are sometimes seen standing out on the uterus. Data collected from all the pregnant women being admitted for delivery at tertiary care hospital. This was a prospective study of all the pregnant patients are taken according to the inclusion criteria, detailed history including the name, age, address, contact number and history pertaining to the various factors associated with uterine rupture will be noted in the form of questionnaire. The presenting symptoms, signs, maternal outcome and fetal outcome and any associated complications will be duly noted. Necessary investigations and resuscitation are carried out before the surgery. In this study, the incidence of uterine rupture was high in multiparous women, of which 22 cases were para 1(62.9%), 10 cases were para 2 (28.6%), 1 case was para 3(2.9%) and 1 case was para 4(2.9%).

Keywords: Obstetric profile, uterine rupture, cesarean section scar

Introduction
In vast majority of cases rupture during pregnancy is the result of cesarean section scar, giving way. Mostly these cases of rupture are due to giving way of classical cesarean section scar, much more commonly than the lower segment scar. The classical section scar gives way usually when the distension of uterus is reaching its maximum and is most commonly encountered between the 34th and 38th weeks.(when the patient is not in labour). The patient in early stages of commencing rupture complains of mild abdominal pain which is usually for labor pains. At this stage there may be increase in pulse rate and exaggerated fetal movements. With further yielding of scar, there is gradual trickling of blood into the peritoneal cavity causing mild abdominal distension, sometimes vomiting. Fetal heart is irregular or absent. When the amniotic sac containing fetus escapes into the peritoneal cavity and the placenta separates and is expelled into the peritoneal cavity, at this stage classical signs become evident namely shock and collapse with signs of intraperitoneal hemorrhage. There will be loss of uterine contour, fetal parts are easily palpable per abdomen and contracted uterus felt separately to one side. Little vaginal bleeding but never profuse occurs. Since the whole process is gradual without any alarming symptoms it is termed as silent rupture [1, 2].

In some cases where the placenta is situated on the scar, bleeding will be profuse if placenta perforates the scar. If the cause of the rupture is a weak cesarean section scar, symptoms may be minimal, when only scar tissue gives way or very severe when much blood is shed as may happen if the placenta has been embedded over the scar or in case of rupture of scar extending into the normal myometrium. In typical cases of rupture occurring during labor the women at the time of uterine contraction suddenly complains of sharp, shooting pain in the abdomen and may cry out that "something ripped" or "something tore" inside her [3].

As a result of shock and internal hemorrhage the face becomes pale, the lips turn white or cyanotic, a cold sweat appears on the nose and forehead, the temperature drops, the pulse become weak and running and respiration sighing, sometimes minimal external bleeding may be there. After the symptoms and signs appear, there is cessation of uterine contraction and loss of uterine contour. The women until that point in intense agony suddenly experience much relief but the fetus has not been expelled into the cavity that is when fetal presenting part had already

entered the pelvis deep before the rupture occurs there is loss of station during vaginal examination and pain may continue, though weaker. Pain is felt down a leg if the blood distends a broad ligament; if it is free in abdominal cavity it may seep under the liver and cause pain in the shoulder. Fetal movements for the first few minutes are violent, and then fetus dies. An unexplained collapse of the patient during labor with a markedly tender uterus often on the left side, absent fetal heart sounds and vaginal bleeding should arouse suspicion. On vaginal examination, it is sometimes possible to palpate a tear in the uterine wall through which fingers can be passed into the peritoneal cavity where the viscera may be felt. Failure to detect the tear by no means proves its absence [4, 5].

In obstructed labor, as expulsive forces try in vain to expel the fetus, the patient becomes restless and complains of constant pain over the lower part of uterus while uterine contractions tend to become more and more tetanic. Patient is anxious and in agony, she is exhausted, the tongue is dry [6]. Pulse becomes more rapid, temperature rise slightly. There is vertical stretching and thinning of lower uterine segment. The retraction ring of Bandl is now seen over the uterus above the symphysis running transversely across. The longer the duration of protracted labor, higher is the abdomen. Round ligaments are sometimes seen standing out on the uterus.

Upper segment is hard and tender to touch, having contracted down on the fetus making palpation difficult. Fetal heart is absent or irregular and faint. This stage is referred as threatening rupture.

With further uterine contractions lower uterine segment gets more thinned out and stretched till ultimately at the height of a contraction, it gives way. Rupture is incomplete to start with but becomes complete later when fetus and placenta escape into peritoneal cavity.

After rupture is complete, fetal parts are easily palpable and the contracted uterus felt to one side. If hemorrhage is severe, shifting dullness will be present, the patient usually die of hemorrhage. If she survives she will develop distension and signs of peritonitis and may die later [7].

At times rent may involve bladder (suspicion arouse if blood in urine appears) and also extend into the broad ligament, to give rise to broad ligament hematoma which is felt as a tenderness on one or either side. The amount of blood depends entirely upon the situation of the tear relative to large vessels which, as a matter of fact do not tear readily [8].

In practice some cases are not made out before delivery because the rupture is only partial prior to delivery, it is completed or actually occur during delivery. If rupture occurs at the very end of second stage of labor, so that vaginal delivery of the fetus is completed, there is a very characteristic sign, namely shortening of the cord. This practically pathognomic of uterine rupture, with extrusion of placenta into the abdominal cavity. Shock and collapse with or without hemorrhage occasionally arouse suspicion of rupture. During 3rd stage, hand introduced possibly to remove placenta discover a rupture. It is cardinal rule that the lower uterine segment should be explored in every case of shock; when diagnosis is in doubt or when patient does not immediately respond to blood transfusion.

Methodology

Source of data

Data collected from all the pregnant women being admitted for delivery at tertiary care hospital.

Study subject

All the pregnant patients who fulfill the inclusion criteria.

Inclusion criteria

- All pregnant women of >28 wks of gestation with diagnosis of rupture.
- All cases of uterine rupture confirmed at laparotomy.

Exclusion criteria

Suspected cases of uterine rupture found negative at laparotomy.

Methodology

This was a prospective study of all the pregnant patients are taken according to the inclusion criteria, detailed history including the name, age, address, contact number and history pertaining to the various factors associated with uterine rupture will be noted in the form of questionnaire. The presenting symptoms, signs, maternal outcome and fetal outcome and any associated complications will be duly noted. Necessary investigations and resuscitation are carried out before the surgery.

Results

Table 1: Age wise distribution of the study subjects

Age group	Frequency	Percent
≤ 20 yrs	3	8.6
21 - 25 yrs	18	51.4
26 - 30 yrs	13	37.1
> 30 yrs	1	2.9
Total	35	100
Mean ± SD	25.57 ± 4.06	

In this study, rupture uterus occurred more commonly in the age group between 21 yrs and 25yrs (51.4%) followed by in the age group between 26yrs and 30 yrs (37.1%), where as in women more than 30yrs were 1 case (2.9%) and in women up to 20 yrs there were 3 cases(8.6%).

Table 2: Distribution of the patients based on antenatal information

Variable	Frequency	Percent
Booking status		
Booked	7	20
Unbooked	28	80
Total	35	100
Referral		
Not reffered	12	34.3
Reffered	23	65.7
Total	35	100

Present study showed out of 35 cases of uterine rupture 28 cases were unbooked (80%) and only 7 cases (20%) were booked.

Table 3: Obstetric profile of the study subjects (n=35)

Variable Gravida	Frequency	Percent
1	1	2.9
2	16	45.7
3	14	40
4	3	8.6
5	1	2.9
Para		
1	22	62.9
2	10	28.6
3	1	2.9
4	1	2.9
NA	1	2.9
Living		
0	2	5.7
1	26	74.3
2	6	17.1
NA	1	2.9
Dead		
0	24	68.6
1	9	25.7
3	1	2.9
NA	1	2.9

In this study, the incidence of uterine rupture was high in multiparous women, of which 22 cases were para 1(62.9%), 10 cases were para 2 (28.6%),1 case was para 3(2.9%) and 1 case was para 4(2.9%).

Table 4: Distribution of the patients based on past history (n=35)

Variable	Frequency	Percent
Interval b/w previous birth to C-section		
≤ 2 yrs	22	62.9
> 2 hrs	12	34.3
NA	1	2.9
No. of C-sections		
One	19	54.3
Two	1	2.9
NA	15	42.9
Type of rupture		
scarred uterus	20	57.1
unscarred uterus	15	42.9

In the present study, 62.9% of cases had interval since last delivery in range of 2 years, 34.3% of cases were more than 2 years. Out of 35 cases of rupture 19 cases (54.3%) were with one previous caesarean and 1 (2.9%) with 2 previous caesarean and 42.9% of cases had no history of caesarean.

Discussion

Rupture of uterus is one of the dangerous accidents to which a pregnant woman is prone and is responsible for 5-10% maternal mortality and very dismal perinatal outcome. The incidence of rupture uterus has been showing a gradual decline in some studies while there has been no appreciable decrease in some of them.

There has been an appreciable change in the etiology and the outcome. This study was undertaken to study the etiological factors, clinical presentation, and management, maternal and fetal outcome in cases of uterine rupture.

The risk of uterine rupture has risen recently, especially, in developed countries due to increased rate of caesarean deliveries. The frequency of uterine rupture ranges from 0.2% to 3.8% [9].

The incidence varies from 1 in 224 to 1 in 3000 deliveries, depending upon the obstetric care and population dealt with.[9] The incidence of uterine rupture in the present study was 0.17% (17 per 10,000 deliveries).

In this study, majority of the patients were between the age group of 21 to 25yrs followed by the age group between 26 to 30 yrs of parity between 1 to 4 and 1 case was primigravida. Increased incidence of previous caesarean scar rupture, which is about 51.4% in this study which is comparable with the similar study conducted by Kadowa I *et al*. in 2010 and study done by Joshi SD *et al*. during the period from 2001-2003 [10, 11].

Incidence of rupture uterus was high in the women who did not attend antenatal care (80%) when compared to the women who had taken antenatal care(20%) these findings are comparable with other studies [12]. Antenatal assessment is essential step in the early detection of high risk patients in whom hospital delivery is mandatory. Good antenatal assessment is also an indicator of the quality of maternal services in the community.

All most all the cases in the study were referred and residing more than 10 kms away from the referring hospital.

Out of 35 cases in the study, majority of patients (22 cases) had birth interval of <2 or 2 yrs (62.9%). majority of cases (57.1%) got operated with in 1 hr of admission and reduced the maternal morbidity. 8.6% of cases operated after 6hrs because of non availability of blood and its components and delay in investigations.

Previous caesarean scar was the most common cause of rupture in present study (54.1%), Previous uterine scar was responsible for rupture uterus in 70.2%, 50.6%, 63.3% cases of other studies. Followed by Obstructed labour was the 2nd leading etiology in present study (28.6%) which is comparable to other study (26.6%). Use of oxytocic agents in labor was reported as a cause in 1 case (2.9%). Uterine anomaly found in two cases (one case with bicornuate uterus and one case with unicornuate) 5.8%.

Conclusion

The present study shows that Uterine rupture, a catastrophic obstetric problem and it is associated with severe degree of maternal and perinatal morbidity and mortality. A significant rise in caesarean section incidence led to increase in rupture of previous LSCS scar in our country. Risk factors in this study are preventable.

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