INTRODUCTION

Uterine rupture, an obstetrical emergency though rare but still has grave implications. The reported incidence of maternal mortality due to uterine rupture is between 1–13%, and that of perinatal ranges from 74–92%. Uterine rupture is the occurrence of breach in the wall of uterus. Complete rupture involves complete disruption of uterine wall resulting in spillage of uterine contents into the abdominal cavity whereas an incomplete rupture has intact peritoneum or serosa. Several direct and indirect factors responsible for uterine rupture are poor socioeconomic condition, adolescent marriage, obstructed labour, contracted pelvis, multiparty, injudicious use of syntocinon, placenta percreta, mal-presentation, breech extraction, and uterine instrumentation. The most commonly reported risk factor in developing countries is previous caesarean section whereas in developing countries neglected and obstructed labour are more frequently reported predisposing factors.

The usage of misoprostol for induction of labour has major contribution in increasing incidence of this serious complication. The incidence of rupture uterus is still high in developing countries due to poor antenatal care, unbooked emergencies and poor socioeconomic condition of patients. Maternal complications associated with uterine rupture are vesico-vaginal fistula haemorrhage, bladder rupture, and maternal death.

MATERIAL AND METHODS

This two-year cross-sectional descriptive study from January 2015 to December 2016 was conducted in Gynae “A” Unit of Ayub Teaching hospital Abbottabad. The objective of our study was to analyse frequency, risk factors, fatal and maternal outcome in patients with uterine rupture in Ayub teaching hospital, Abbottabad. The data was analysed using SPSS Version 16 which was collected on pre-designed proforma. We analysed data using SPSS Version 16 and collected data on pre-designed proforma.

RESULTS

Out of 8214 total deliveries 52 cases of ruptured uterus were analysed from 1st January 2015 to 31st December 2016, all of them presented in emergency with diagnosis of rupture uterus before admission. The calculated frequency of rupture uterus was 0.63%. Age of the uterine ruptured patients varies from 23 to 42 years with a mean age of 34.06±4.73 years. Period of gestation varies between 20 to 41 weeks with mean of 36.6±4.08 weeks.

Frequency of parity of the patients rupture uterus is increased with increasing parity as shown in figure-1. Out of 52 patients total 46 patients (88.5%) were unbooked and only 6 (11.5%) were booked. The associated causes of rupture uterus are shown in table 4. In 24 (46.2%) cases, rupture occurred in unscarred uterus. Injudicious use of oxytocin was responsible...
for rupture in 11 (21.2%) cases, obstructed labour 7 (13.5%) and neglected transverse lie 6 (11.5%) of cases. 28 (53.8%) women had rupture of scarred uterus, of which 13 (46.4%) women were with previous one lower segment caesarean section (LSCS), 9 (32.14%) women were with previous two LSCS, 3 (10.7%) women had previous three LSCS, 2 (7.14%) patients had previous four LSCS, one patient had history of myomectomy. (Table-1, 2).

Table-3 shows that the lower uterine segment was the most common site of ruptured uterus (53.8%). The next most common site was lateral rupture (21.2%) followed by posterior rupture (9.6%) and fundal rupture (7.7%) respectively.

All of the patients underwent subtotal hysterectomy, 1 patient had repair of urinary bladder. Almost all patients were anemic and had received three or more pints of blood transfusions. Two patients died after surgery out of total 52 ruptured uterus cases. There were 49 (94.2%) cases of perinatal mortality however, only 3 (5.8%) were alive.

![Figure-1](http://www.jamc.ayubmed.edu.pk)

**Figure-1:** Frequency of parity of the patients

**Table-1: Frequency of causes of rupture uterus.**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous scar dehiscence</td>
<td>28 (53.8)</td>
</tr>
<tr>
<td>Injudicious use of oxytocin</td>
<td>11 (21.2)</td>
</tr>
<tr>
<td>Neglected T-loc</td>
<td>6 (11.5)</td>
</tr>
<tr>
<td>Obstructed</td>
<td>7 (13.5)</td>
</tr>
<tr>
<td>Total</td>
<td>52 (100.0)</td>
</tr>
</tbody>
</table>

**Table-2: Frequency of previous scar.**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>13 (46.4)</td>
</tr>
<tr>
<td>Two</td>
<td>9 (32.1)</td>
</tr>
<tr>
<td>Three</td>
<td>3 (10.7)</td>
</tr>
<tr>
<td>Myomectomy</td>
<td>1 (5.5)</td>
</tr>
<tr>
<td>Four</td>
<td>2 (7.14)</td>
</tr>
<tr>
<td>Total</td>
<td>28 (100.0)</td>
</tr>
</tbody>
</table>

**Table-3: Frequency of site of rupture.**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posterior rupture</td>
<td>5 (9.6)</td>
</tr>
<tr>
<td>Lateral rupture</td>
<td>20 (38.5)</td>
</tr>
<tr>
<td>Fundal rupture</td>
<td>4 (7.7)</td>
</tr>
<tr>
<td>Lower uterine segment</td>
<td>23 (44.2)</td>
</tr>
<tr>
<td>Total</td>
<td>52 (100.0)</td>
</tr>
</tbody>
</table>

**DISCUSSION**

The frequency of uterine rupture in our study was 0.63%. This is due to increase in number of referrals from peripheries. This incidence was lower than the incidence reported in other studies (0.8%) in Ghana, 0.76% in Uganda, 0.74% in Pakistan, 0.9% in Nepal and 2.8% in Ethiopia.\(^{19-23}\)

But higher than the incidence in developed countries, i.e., 0.086% and 0.023%.\(^{10,23}\) Mean age of patients was 34 years. This is comparable to other study conducted in Pakistan.\(^{24}\) In other studies the most common affected age group is 26–30 years.\(^{20,25}\)

In our study most of the patients were grand multi para’s similar association has been reported in other studies.\(^{26,27}\) However, our results are contradictory to results of other study in which only 13.79% of patients were grandmultiparas.\(^{25}\) Our study showed that 88.5% of the patients were unbooked which is similar to many other studies.\(^{20,28,29}\)

Previous scar rupture has been found to be the major risk factor for ruptured uterus in 53.8% of cases. This was in contrast to the other studies in which uterine rupture has been reported to be due to prolonged obstructed labour.\(^{20,30}\) But similar to the results of many other authors in which the most common cause of rupture was previous caesarean scar.\(^{25,31,32}\)

We found that the most common site of rupture in this study was lower segment. Similar result was found in other studies.\(^{25,32,33}\)

Bladder injury in our study was present in only 1 woman (1.9%) which is much lower than the 18.5% reported from Ethiopia.\(^{34}\)

Subtotal hysterectomy was the management of choice in our study similar to other study conducted in turkey.\(^{35}\)

Maternal mortality is 4% in our study compared to other study Sahu (2.76%)\(^{36}\) and 17.5% in Lagos\(^ {37}\), 3.3% by Rashmi\(^{38}\) and 7.7%.\(^{25}\) Perinatal mortality is 94.2% compared to study done by Sahu <em>et al.</em> (83%)\(^ {36}\) and 81.7%.\(^{25}\) and (91.2%)\(^ {25}\) and 17.6% in Turkey.\(^{39}\)

**CONCLUSION**

Proper antenatal care with education of patients on health-related issues, proper training of birth attendants and establishment of proper referral system, avoidance of injudicious use of syntocinon and early categorization of patients in low and high-risk groups for TOLAC (trial of labour after caesarean section) can help reduce maternal mortality and morbidity associated with this avoidable condition.
AUTHORS’ CONTRIBUTION
AI: Contributed in conception of study, designed proforma, data collection, analysis and interpretation of data for the work, writing the draft. AAS, HJ, AF, MJ: Literature search, data collection and analysis. ANA: Write-up, supervised the study, proof read the final manuscript.

REFERENCES

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