ORIGINAL ARTICLE

A TWO-YEAR ANALYSIS OF UTERINE RUPTURE IN PREGNANCY

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Background: Uterine rupture, an obstetrical emergency though rare but still has grave implications. 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. The most commonly reported risk factor in developed countries is previous caesarean section whereas in developing countries neglected and obstructed labour are more frequently reported predisposing factors. **Methods:** This was a cross sectional descriptive study which was carried out for a period of 2 years from January 2015 to December 2016 in Gynae "A" unit of Ayub Teaching Hospital Abbottabad. **Results:** In our study frequency of uterine rupture was 0.63%. Previous scar dehiscence was the most common risk factor for uterine rupture. Maternal mortality was 4% out of total 52 ruptured uterus, while 94.2% was perinatal mortality. **Conclusion:** Although uterine rupture can be prevented but its frequency is still high. Therefore, proper antenatal care, health education, utilisation of health facilities is needed to reduce adverse outcome associated with this avoidable condition.

Keywords: Uterine Rupture; Scarred uterus; Fetomaternal outcome; Perinatal mortality; Risk factors

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INTRODUCTION

Uterine rupture, an obstetrical emergency though rare but still has grave implications.[1] The reported incidence of maternal mortality due to uterine rupture is between 1–13%, and that of perinatal ranges from 74–92%.[2] 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.[3,4] Several direct and indirect factors responsible for uterine rupture are poor socioeconomic condition, adolescent marriage,[5] obstructed labour,[6] contracted pelvis,[7] multiparty, [8] injudicious use of syntocinon, placenta percreta,[9] mal-presentation, breech extraction, and uterine instrumentation.[10] The most commonly reported risk factor in developed countries is previous caesarean section [11] whereas in developing countries neglected and obstructed labour are more frequently reported predisposing factors.[12]

The usage of misoprostol for induction of labour has major contribution in increasing incidence of this serious complication.[13,14] The incidence of rupture uterus is still high in developing countries due to poor antenatal care, unbooked emergencies and poor socioeconomic condition of patients.[15] Maternal complications associated with uterine rupture are vesico-vaginal fistula haemorrhage, bladder rupture, and maternal death.[16,17]

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 was 23 (44.2%) and lateral rupture, the next most common site (38.5%) followed by posterior rupture 5 (9.6%) and fundal rupture 4 (7.7%) respectively.

All of the patients underwent subtotal hysterectomy, 1 patient had repair of urinary bladder. Almost all patients were anaemic 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.

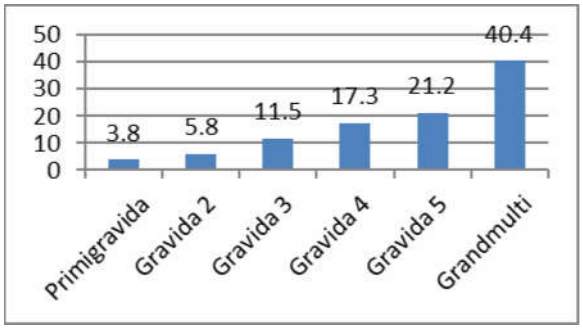

Figure-1: Frequency of parity of the patients

Table-1: Frequency of causes of rupture uterus.

	Frequency	Percent
Previous scar dehiscence	28	53.8
Injudicious use of oxytocin	11	21.2
Neglected T-lie	6	11.5
Obstructed	7	13.5
Total	52	100.0

Table-2: Frequency of previous scar.

	Frequency	Percent
One	13	46.4
Two	9	32.1
Three	3	10.7
Myomectomy	1	5.57
Four	2	7.14
Total	28	100.0

Table-3: Frequency of site of rupture

	Frequency	Percent
Posterior rupture	5	9.6
lateral rupture	20	38.5
Fundal rupture	4	7.7
Lower uterine segment	23	44.2
Total	52	100.0

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.[18–22]

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.[15]
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 Eithopia.[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 *et al*. (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

1. Kulkarni S, Patil S, Budihal D, Seetaram S. Rupture uterus: A 10 years review. J Obstet Gynae 1997;47:344–52.
2. Hofmeyr GJ, Say L, Gulmezoglu AM. WHO systematic review of maternal mortality and morbidity:the prevalence of uterine rupture. BJOG 2005;112(9):1221–8.
3. Cunningham FG, Gant NF, Leveno KJ, Larry C. Rupture of the uterus. In: Williams obstetrics. 21st ed. New York, NY: McGraw-Hill, 2001; p.646–52.
4. Sunanda N, Ranganth P. A two-year analysis of uterine rupture in pregnancy. Int J Reprod Contracept Obstet Gynecol 2016;5(11):3983–6.
5. Sieck CC. Vaginal birth after cesarean section: a comparison of rural and metropolitan rates in Oklahoma. Jokla State Med Assoc1997;90(8):444–9.
6. Cox ML. Contracted pelvis in Nigeria. J Obstet Gynaecol Br Emp 1963;70:487–94.
7. Fisk NM, Shweni PM. Labor outcome of juvenile primiparae in a population with a high incidence of contracted pelvis. Int J Gynaecol Obstet 1989;28(1):5–7.
8. Neilson JP, Lavender T, Quenby S, Wray S. Obstructed labour. Br Med Bull 2003;67:191–204.
9. Topuz S. Spontaneous uterine rupture at an unusual site due to placenta percreta in a 21 week twin pregnancy with previous cesarean section. Clin Exp Obstet Gynecol 2004;31(3):239–41.
10. Gardeil F, Daly S, Turner MJ. Uterine rupture in pregnancy reviewed. Eur J Obstet Gynecol Reprod Biol 1994;56(2):107–10.
11. Al-Zirqi I, Stray-Pedersen B, Forsén L, VangenS. Uterine rupture after previous caesarean section. BJOG 2010;117(7):809–20.
12. Iloki LH, Okongo D, Ekoundzola JR. Uterine rupture in an African environment. 59 cases at the University Hospital Center in Brazzaville. J Gynecol Obstet Biol Reprod (Paris) 1994;23(8):922–5.
13. Thomas A, Jophy R, Maskhar A, Thomas RK. Uterine rupture in a primigravida with misoprostol used for induction of labour. BJOG 2003;110(2):218–8.
14. Ezechi O, Kalu B, Njokanma FO, Nwokoro CA, Okeke G. Vaginal misoprostol induction of labour: a Nierian hospital experience. J Obstet Gynaecol 2004;24(3):239–42.
15. Jain R. Rupture of pregnant uterus: incidence, risk factors, maternal and fetal outcome**.** Int J Med Res Rev 2016;4(6):1035–41.
16. Ofir K, Sheiner E, Levy A, Katz M, Mazor M. Uterine rupture: risk factors and pregnancy outcome. Am J Obstet Gynecol 2003;189(4):1042–6.
17. Kadowa I. Ruptured uterus in rural Uganda: prevalence, predisposing factors and outcomes. Singapore Med J 2010;51(1):35–8.
18. Fofie CO, Baffoe P. A Two-year review of uterine rupture in a regional Hospital. Ghana Med J 2010;44(3):98–102.
19. Mukasa PK, Kabakyenga J, Senkungu JK, Ngonzi J, Kyalimpa M, Roosmalen VJ. Uterine rupture in a teaching hospital in Mbarara, western Uganda, unmatched case-control study. Reprod Health 2013;10:29.
20. Rizwan N, Abbasi RM, Uddin SF. Uterine rupture, frequency of cases and fetomaternal outcome. J Pak Med Assoc 2011;61(4):322–4.
21. Padhye SM. Rupture of the pregnant uterus: a 20 year review. Kathmandu Univ Med J (KUMJ) 2005;3(3):234–8.
22. Omole-Ohonsi A. Uterine rupture: risk factors and pregnancy outcome. Gynecol Obstetric.2011;1:1.
23. Lynch JC, Pardy JP. Uterine rupture and scar dehiscence. A five-year survey. Anaesth Intensive Care 1996;24(6):699–704.
24. Khan S, Parveen Z, Begum S, Alam I. Uterine rupture: A review of 34 cases at Ayub Teaching Hospital Abbottabad. J Ayub Med Coll Abbottabad 2003;15(4):50–2.
25. Malik HS. Frequency, predisposing factors and fetomaternal outcome in uterine rupture. J Coll Physicians Surg Pak 2006;16(7):472–5.
26. Saglamtas M, Vicdan K, Yalçin H, Yilmaz Z, Yeşilyurt H, Gökmen O. Rupture of the uterus. Int J Gynaecol Obstet 1995;49(1):9–15.
27. Lema VM, Ojwang SB, Wanjala SH. Rupture of the gravid uterus: a review. East Afr Med J 1991;68(6):430–41.
28. Hasan JA, Zaki M, Kareem K. Rupture of gravid uterus. J Surg Pak Mar 2005;10:20–2.
29. Gul A. Rupture of previously scarred uterus. Ann King Edward Med Coll 2004;10:473–5.
30. Ezechi OC, Mabayoje P, Obiesie LO. Ruptured uterus in South Western Nigeria: a reappraisal. Singapore Med J 2004;45:113–6.
31. Ahmed SM, Daffalla SE. Incidence of uterine rupture in teaching hospital, Sudan. Saudi Med J 2001;22(9):757–61.
32. Fatima N. Rupture of uterus at term. J Coll Physicians Surg Pak 1998;8(3):137–9.
33. Ofir K, Sheiner E, Levy A, Katz M, Mazor M. Uterine rupture: differences between a scarred and an unscarred uterus. Am J Obstet Gynecol 2004;191(2):425–9.
34. Gessessew A, Melese MM. Rupture uterus-eight-year retrospective analysis of causes and management outcome in Adigrat Hospital, Tigray Region, Ethopia. Ethiop J Health Dev 2002;16(3):241–5.
35. Kafkas S, Taner CE. Ruptured uterus. lnt J Gynaecol Obstet 1991;34(1):41–4.
36. Latika S. A 10 year analysis of uterine rupture at a teaching institution. J Obstet Gynecol India 2006;5(6):502–6.
37. Ola ER, Olamijulo JA. Rupture of the uterus at the Lagos University Teaching Hospital, Lagos, Nigeria. West Afr J Med 1998;17(3):188–93.
38. Rashmi, Radhakrisknan G, Vaid NB, Agarwal N. Rupture uterus--changing Indian scenario. J Indian Med Assoc 2001;99(11):634–7.
39. Ozdemir I, Yucel N, Yucel O. Rupture of the pregnant uterus: a 9-Year review- Arch Gynecol Obstet 2005;272(3):229–31.

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