

Research Article

Maternal Morbidity and Mortality Associated With Retained PlacentaDr Fozia Mohammad Bukhsh.¹, Dr Razia Sultana.², Dr Khanda Gul.³, Dr Safia Bibi.⁴, Dr Palwasha Gul.⁵¹Assistant Professor OBG Unit 4 BMCH Quetta Balochistan 87300 Pakistan.²Senior Resident OBG Unit 4 BMCH, Quetta Balochistan 87300 Pakistan.³Assistant Professor OBG Unit 4 BMCH, Quetta Balochistan 87300 Pakistan.⁴Assistant Professor OBG Unit 4 BMCH Quetta Balochistan 87300 Pakistan.⁵Senior Registrar Radiology BMCH, Quetta Balochistan 87300 Pakistan.

*Corresponding Author

Dr Khanda Gul.

Abstract: Introduction: A retained placenta means that all or part of the placenta or membranes are left behind in the uterus during the third stage of labour. This happens in about two per cent of births. The third stage is the time between the birth of the baby and delivery of the placenta and membranes. It takes anything from about 30 minutes to one hour if it is allowed to happen naturally. A managed third stage usually lasts between five and 10 minutes. **Objective:** To describe the maternal morbidity and mortality associated with retained placenta and to describe clinical and demographic features of these mothers. **Study Design:** Descriptive case series. **Setting:** The study was conducted at Gynaecology and Obstetrics Department Unit-4, Bolan Medical Complex Hospital, Quetta. **Duration of Study:** 01.07.2017----30.06.2018. **Subjects and Methods:** One hundred pregnant women having single fetus, with labour at term admitted through emergency in gynaecology and obstetrics department presenting with retained placenta were included. The patients who delivered in this department with retained placenta were also included. A proforma was filled from each patient that included information regarding history, findings of clinical examination and investigations. **Results:** The mean age of patients was 32.30 years. Ninety two patients delivered by spontaneous vaginal delivery, 7 patients by LSCS and 1 patient by vacuum delivery. Most of the patients were managed by intravenous oxytocin 80%. The morbidity rate is 98% and mortality was 2%. **Conclusion:** Women with identifiable risk factors should be targeted for the prevention of retained placenta. There is a need for the training of birth attendants in the proper conduct of delivery and third stage of labour to prevent placenta retention.

Keywords: Retained placenta, Risk factors, vaginal delivery, fetal outcome.

INTRODUCTION:

When placenta remains in uterine cavity for more than thirty minutes after delivery of baby is said to be retained (Rogers, M.S., & Chang, A.M.Z. 2006). The retained placenta is a significant cause of maternal mortality and morbidity throughout the developing world. It complicates 2% of all deliveries, having a case mortality rate of nearly 10% in rural areas (Weeks, A.D. 2005). Maternal mortality and morbidity rise with the age and multiparity of the patients, their liability to associated conditions such as hypertension, the risks of early membrane rupture, obstructed labour, ruptured uterus and the frequent need for operative interference (Ritchie, J.W.K. 1995).

In many parts of the non industrialized world however, the maternal mortality rate is high associated with retained placenta. The cause of the death is usually

haemorrhage. This is more frequent when facilities for manual removal of placenta is not immediately available or when traveling time to hospital are long, clearly an effective medical treatment could have major implication for the reduction of maternal mortality (Weeks, A.D., & Mirembe, F.M. 2002). After uterine atony, retained placenta is the second major indication for blood transfusion in the third stage of labour (Kamani, A. A. *et al.*, 1988).

Risk factors, which are commonly associated with retained placenta are previous retained placenta, multiparity, induced labour, small placenta, maternity age >30 years, midwife delivery. In addition, previous injury to the uterus like uterine curettage, caesarean section and preterm labour are related significantly to retained placenta (Chhabra, S., & Dhorey, M. 2002;

Quick Response Code



Journal homepage:

<http://www.easpublisher.com/easjnm/>

Article History

Received: 22.02.2019

Accepted: 15.03.2019

Published: 29.03.2019

Copyright © 2019 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

DOI: 10.36349/easjnm.2019.v01i01.007

Shaheen, F., & Jabeen, J. 2003). Titiz *et al.*, (2001) stated that previous history of retained placenta and a history of preterm delivery to be significantly related to retained placenta in the current pregnancy, while age, parity, and gravidity did not influence the incidence of retained placenta.

Some placenta are simply trapped behind a close cervix (the trapped placenta), some are adherent to the uterine wall but easily separated manually (placenta adherents), whilst others are pathologically invading the myometrium (placenta accrete) (Weeks, A.D. 2005). The difference between placenta trapped or adherent or accrete is not easy unless ultrasound is used. Ultrasonographic finding of an echogenic uterine mass strongly supports a diagnosis of retained placental products. This technique is probably better used in cases of haemorrhage occurring a few hours after delivery or in secondary post-partum haemorrhage (PPH). Transvaginal duplex Doppler imaging is also effective in evaluating the patients (Sadan, O. *et al.*, 2004).

Retained placenta is potentially life threatening not only because of retention per se, but because of associated haemorrhage, infection, sub involution as well as complications related to its removal such as perforation, endometritis, retained parts, inversion and complication of general anesthesia as well (Chohan, A. 2004).

Management of retained placenta includes injection of oxytocin which speed up the delivery of the placenta as this reduces the risk of haemorrhage (Khanum, Z. 2005), saline plus oxytocin into the umbilical vein (Carroli, G., & Bergel, E. 2004), manual removal under general anesthesia (Titiz, H. *et al.*, 2001) and even hysterectomy in case of placenta accreta, increta or percreta (ACOG Committee Opinion. 2002).

The purpose of this study is to describe the maternal morbidity and mortality associated with retained placenta. Maternal morbidity and mortality due to retain placenta is more common in our Province, because the literacy rate is very poor and majority of women are delivered at home by untrained traditional birth attendants. Haemorrhage is the cause of death in these patients because patients come to hospital after long travel from far areas of province. A proper conducted delivery can reduce the incidence of retained placenta and if retentions occur, timely appropriate treatment can save lives.

MATERIAL AND METHODS:

The objective of the study was to describe the maternal morbidity and mortality associated with retained placenta and to describe clinical and demographic features of these mothers. It was a Descriptive case series study conducted at Gynaecology and Obstetrics Department, Unit 4, Bolan Medical Complex Hospital, Quetta from 01.07.2017 to

30.06.2018. 100 consecutive patients with retained placenta were included by Non-probability convenience technique. Patient referred from some hospital, maternity home or home delivery with retained placenta were included. Those patients delivered in our department, with retained placenta either by normal vaginal delivery or by cesarean section was also be included in the study. Patient's detailed history was be taken followed by a thorough examination including general physical examination and obstetrical examination. Then certain investigations was done such as complete blood picture, blood sugar, blood group and Rh factor, HbsAg, anti Hcv, blood urea and serum creatinine was done. In retained placenta initially oxytocin is given the form of continuous infusion 5-10 IU/h as this increase the overall tone of the myometrium as well as stimulating strong phasic contraction. If this is unsuccessful after 30 minutes, then a manual removal of placenta was carried under general anesthesia. A strong oxytocic was used following removal to ensure effective myometrial contraction, and prophylactic antibiotic was used to prevent infection. If manual removal of placenta was difficult due to a close cervix, then halothane was used, which relax the uterus and help in its removal. Statistical analysis was conducted by SPSS version 10. Proportion of significance for nominal data was calculated by Z test. A $P < 0.05$ was considered level of significance.

RESULTS

There were 21% of patients in age group 20-28 years, 57% of patients in age group 29-36 years and 22% in age group more than 37 years. The mean age was 32.30 years.

Regarding mode of delivery, 92 patients out of hundred had spontaneous vaginal delivery with or without episiotomy (92%) while 7 patients delivered by LSCS (7%) and 1 by vacuum delivery.

The mean \pm standard deviation of duration of hospital stay, parity, time of delivery, duration of retained placenta and hemoglobin is shown in Table 1.

Out of hundred patients, 46 patients had mild complication, 17 patients had moderate, 2 patients had severe and 35 patients had no complications.

The management of complications is shown in Table 2. Most of the patients had managed by intravenous oxytocin 80% and no patient had any surgical intervention.

Table 3 shows frequency and percentage of complications of delivery.

The morbidity rate is 98% and mortality is 2%. Statistically the mortality is not significant ($P > 0.05$).

Table 1 Demographic profile

	Mean±SD
Duration of hospital stay (days)	2.61±2.59
Parity	5.15±3.01
Time of delivery (hours)	4.91±3.87
Duration of retained placenta (hours)	4.12±3.39
Hemoglobin (%)	9.70±1.93

Table 2 Frequency distribution according to management

Management	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Spontaneous expulsion	23	23.0	77	77.0
Intravenous oxytocin	80	80.0	20	20.0
Saline and oxytocin into the umbilical vein	4	4.0	96	96.0
Manual removal	38	38.0	62	62.0
Surgical intervention	-	-	100	100.0
Obstetrical hysterectomy	2	2.0	98	98.0

Table 3 Frequency distribution of complications

Complication	Yes	No	Chi square value	P value
PPH	38	62	4.14	0.001
Uterine perforation	-	100		
Puerperal sepsis	19	81	2.56	0.005
Retained products	27	73	3.22	0.006
Hb% <7 gm/dl	17	83	2.39	0.004

DISCUSSION

Delivery supervised by untrained traditional birth attendants or delivery in inappropriately-staffed centres are associated with a high incidence of poor and delayed management of third stage of labour, leading to a high incidence of retained placenta in the unbooked high-risk and low-risk women. Non-booking for antenatal care constituted an approximate 23-fold increase in risk of retained placenta in this study. The declining maternal health service utilization occasioned by poor economic status and the introduction of fees for service have contributed to the increased incidence of unbooked emergencies and the attendant obstetrical morbidity and mortality in our women over the years (Lim, P.S. *et al.*, 2014).

History of previous retained placenta and caesarean sections were highly associated with retained placenta in this study, in agreement with the findings of other researchers (Romero, R. *et al.*, 1990; Chang, A. *et al.*, 1977). The risk of repeat retained placenta in other studies was about 2–4 times, while in this study, the risk was increased 15-fold but still less than the 29-fold risk observed by Soltan and Khashoggi (Adelusi, B. *et al.*, 1997; H. SOLTAN and T. KHASHOGGI, M. 1997; Stones, R. W. *et al.*, 1993). D&C carried a four-fold risk of predisposing to retained placenta in this study. It is hypothesised that these factors cause injuries that lead to deficient or damaged endometrium predisposing the implanted ovum's chorionic villi to penetrate into the uterine muscle. This penetration of the endometrium and the uterine muscle predisposes to placenta retention. The severe form of this phenomenon is

believed to be the cause of placenta accrete (Barss, P., & Misch, K. A. 1990). Myomectomy was not significantly associated with retained placenta in this study. This may be because the type of myomectomy in this study did not involve the bridging of the endometrial cavity of the uterus.

Using a diagnostic cutoff of 30 minutes for a prolonged third stage, 42% of retained placentas deliver spontaneously within the next 30 minutes, with very few delivering spontaneously after one hour. Because the incidence of significant postpartum haemorrhage rises after 30 minutes in the third stage. It therefore seen logical to institute some form of active intervention in an attempt to deliver the placenta between 30 and 60 minutes into the third stage (Banks. A., & Levy, D.M. 2005).

Combs and Laros (Combs, C. A., & Laros, J. R. 1991) studied the duration of third stage in 12,979 singleton vaginal deliveries and observed the median duration was 6 minutes and also studied the relationship between third stage duration and postpartum haemorrhage and observed increased risk of postpartum haemorrhage if third stage duration will 30 minutes or longer.

CONCLUSION

This study confirmed the risk factors for retained placenta are, in descending order of importance, nonbooking for antenatal care in current pregnancy, history of retained placenta and caesarean sections; age greater than 35 years, grand multiparity,

previous history of D&C preterm delivery in the current pregnancy and placenta weight less than 501 g. Pregnant women with identifiable risk factors should be targeted for the prevention of retained placenta. However, there is a need for the training and retraining of birth attendants in the proper conduct of delivery and third stage of labour to prevent placenta retentions and PPH. Moreover, the improvement in the socioeconomic conditions of the populace and removal of fee for service in maternity care services will improve the utilization of available delivery care services and reduce the number of unbooked emergencies.

REFERENCES

1. Rogers, M.S., & Chang, A.M.Z. (2006). Postpartum haemorrhage and problem of the third stage. In: James, D.K., Steer, P.J., Weiner, C.P., Gonik, B. eds. High risk pregnancy management options. 3rd ed. Philadelphia: WB Saunders, 1559-76.
2. Weeks, A.D. (2005). The retained placenta. In: Studd J, editor. Progress in obstetrics and gynaecology. 16th ed. London: Elsevier Science, 133-54.
3. Ritchie, J.W.K. (1995). Dewhurst's textbook of obstetrics and gynaecology. 5th ed. London: WB Saunders, 361-72.
4. Weeks, A.D., & Mirembe, F.M. (2002). The retained placenta - new insights into an old problem. Eur J Obstet Gynecol Reprod Biol, 102, 109-10.
5. Kamani, A. A., McMorland, G. H., & Wadsworth, L. D. (1988). Utilization of red blood cell transfusion in an obstetric setting. *American journal of obstetrics and gynecology*, 159(5), 1177-1181.
6. Chhabra, S., & Dhorey, M. (2002). Retained placenta continues to be fatal but frequency can be reduced. *Journal of Obstetrics and Gynaecology*, 22(6), 630-633.
7. Shaheen, F., & Jabeen, J. (2003). Postpartum haemorrhage: still a challenge. *J Rawal Med Coll*, 7, 77-81.
8. Titiz, H., Wallace, A., & Voaklander, D. C. (2001). Manual removal of the placenta-a case control study. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 41(1), 41-44.
9. Sadan, O., Golan, A., Girtler, O., Lurie, S., Debby, A., Sagiv, R., ... & Glezerman, M. (2004). Role of sonography in the diagnosis of retained products of conception. *Journal of ultrasound in medicine*, 23(3), 371-374.
10. Chohan, A. (2004). Third stage of labour and complications. In: Chohan A , ed. Fundamentals of obstetrics. 1st ed. Lahore: MAR Publisher, 363-79.
11. Khanum, Z. (2005). Primary Postpartum Hemorrhage; effective treatment modalities. *Ann King Edward Med Coll*, 11, 17-9.
12. Carroli, G., & Bergel, E. (2004). Umbilical vein injection for management of retained placenta (Cochrane review). Oxford: John Wiley and Sons.
13. Titiz, H., Wallace, A., & Voaklander, D. C. (2001). Manual removal of the placenta-a case control study. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 41(1), 41-44.
14. ACOG Committee Opinion. (2002). Placenta accreta. American college of obstetricians and gynaecologists. *Int. J Gynecol obstet*, 22: 77-8.
15. Lim, P.S., Ismail, N.A.M., Ghani, N.A.A., Kampan, N.C., Sulaiman, A.S., Ng BK, Chew, K.T., Karim, A.K.A., & Yassin, M.A.J.M. (2014). Retained placenta: Do we have any option? *World J Obstet Gynecol*. Aug 10, 3(3), 124-129.
16. Romero, R., Hsu, Y. C., Athanassiadis, A. P., Hagay, Z., Avila, C., Nores, J., ... & Hobbins, J. C. (1990). Preterm delivery: a risk factor for retained placenta. *American journal of obstetrics and gynecology*, 163(3), 823-825.
17. Chang, A., Larkin, P., Esler, E. J., Condie, R., & Morrison, J. (1977). The obstetric performance of the grand multipara. *Medical Journal of Australia*, 1(10), 330-332.
18. Adelusi, B., Soltan, M. H., Chowdhury, N., & Kangave, D. (1997). Risk of retained placenta: multivariate approach. *Acta obstetricia et gynecologica Scandinavica*, 76(5), 414-418.
19. H. SOLTAN and T. KHASHOGGI, M. (1997). Retained placenta and associated risk factors. *Journal of Obstetrics and Gynaecology*, 17(3), 245-247.
20. Stones, R. W., Paterson, C. M., & Saunders, N. J. S. (1993). Risk factors for major obstetric haemorrhage. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 48(1), 15-18.
21. Barss, P., & Misch, K. A. (1990). Endemic placenta accreta in a population of remote villagers in Papua New Guinea. *BJOG: An International Journal of Obstetrics & Gynaecology*, 97(2), 167-174.
22. Banks. A., & Levy, D.M. (2005). Retained placenta: anaesthetic considerations. *Update Anesthesia*, 19, 13-9.
23. Combs, C. A., & Laros, J. R. (1991). Prolonged third stage of labor: morbidity and risk factors. *Obstetrics and gynecology*, 77(6), 863-867.