Retained Placenta- A major cause of maternal morbidity

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ABSTRACT

Retained placenta is a condition when placenta is not delivered by 30 minutes after delivery of baby. It commonly occurs among those women who deliver at home and it is responsible for more of maternal morbidity and mortality. One reason behind this is it mostly occurs in home delivery where active management of third stage of labour is lacking and once it takes place it increases the chances of post partum haemorrhage (PPH) and sepsis irrespective of place of delivery. In this prospective study carried out in a Hospital which is located at a distance of 10-12 kilometers from the centre of the capital, we tried to find out the prevalence of retained placenta, its relation with the place of delivery, steps taken to manage the cases of retained placenta and morbidity in terms of blood loss and hospital stay. The frequency of retained placenta in this study is 3.96% with majority having home delivery (82.8%). Those women who had blood loss of more than 1 litre (4.0%) all were home deliveries. Among all 12.0% cases had severe anaemia and needed significant amount of blood transfusion. All cases with retained placenta were first tried with use of oxytocics and controlled cord traction followed by manual removal of placenta under general anaesthesia. All cases were successfully managed with control cord traction (CCT) except 18 cases who needed manual removal of placenta (MRP).

Keywords: Retaind placenta, PPH, CCT, MRP.

INTRODUCTION

Nature has created a situation that when a baby is delivered placenta which is the life of a fetus can be the enemy of the mother if not delivered in time. In local terminology placenta is called a friend of the fetus which is really a logical explanation. It should be normal in place and condition to have a healthy fetus and should come out immediately after the fetus during delivery. Placenta starts developing from 6 weeks of gestation and completed by 12 weeks. Placenta at term pregnancy is almost circular, diameter is 15-20 cm, thickness is about 2.5 cm, weight is about 500 grams and normally located in upper uterine segment.

Child birth is taken as natural event in which people expect any women to go through it without requiring any special preparation. Yes, that is true if it occurs normally and is true till no complications occur. But if complications occur, it can be life threatening to the mother as well as baby. To prevent such dangerous complications we should prepare all pregnant women not only from the day of conception but also from the preconception period. Prenatal, antenatal and intrapartum preparation help to keep women away from dangerous complications and aims to have healthy baby and mother after ten months of conception.

Most literatures advocate the fact that placenta has to be expelled within 30 minutes of child birth. And if it doesn't then it is said to be retained placenta though individual institution can have their own protocol for diagnosis and management of this condition. When there is any delay in the expulsion of placenta there may be various possible events as simple as placenta lying in the vagina to as complicated as placenta creta of various degrees. So one should be prepared to handle all the possible events before managing a case of retained placenta. Longer the duration of third stage of labour, more the chances of complications like partum haemorrhage (PPH) and shock. If delivery occurs in hospital intervention starts immediately after arbitrary period and patient is under close monitoring. But in home delivery people try unacceptable practices like pressing the uterus down, pulling the cord vigorously, hanging a heavy metal on the cord which ultimately worsens the condition rather than solving it. So people seek medical help many hours after delivery of baby if nothing helps them. So the aim of our study is to find out the incidence of retained placenta at Nepal Medical College Teaching Hospital (NMCTH), type of delivery, place of delivery, mode of management, maternal morbidity in terms of blood loss and analysis of antenatal and intranatal contributory factors for retained placenta.

MATERIALS AND METHODS

A prospective study was conducted in the Department of Obstetrics and Gynaecology of NMCTH over one and half years with effect from 1st of Jan 2010 to 30th of

Table-1: Classification according to gravida and gestational age

Gravida	Gestational age in weeks			
	28-32	>32-37	≥ 37-42	>42
Primigravida	1	3	13	1
Multigravida	0	1	39	1
Grand Multipara	0	0	5	0
Total	1 (1.6%)	4 (6.2%)	57 (89.1%)	2 (3.1%)

Jun 2011 in which the incidence of retained placenta was looked for among the total deliveries registered in NMCTH during that period. In the active management of third stage of labour all our patients were administered Injection Syntometrine (half ampule of oxytocin plus half ampule of ergometrin) immediately after the delivery of the baby. Retained Placenta was diagnosed if placenta was not delivered by 30 minutes after delivery of baby. We maintained record of all the steps done to manage the cases of retained placenta once they are diagnosed. We compared the various variables which we found significant in the causation of Retained Placenta. These variables included Gravidity, Gestational age in weeks, Duration of retention, Place of delivery, amount of blood loss, amount of blood transfusion, antenatal check up (ANC) visits done or not and type of management offered to these patients that is control cord traction (CCT) or manual removal of placenta. Regarding amount of blood loss we can easily estimate the approximate amount of blood loss in hospital delivery but in case of home deliveries we listen to the patient as they always try to express in their own word and tried to correlate with general condition of patient.

RESULTS

Out of 1614 patients enrolled in this study, 64 (3.96%) patients had retained placenta. Out of the 64 patients who had retained placenta, most of the patients 45 (70.3%) were booked (had ANC check up at least 3 times). Of the 45 patients who had done ANC check up, most of them 28 (62.2%) had done ANC check up outside NMCTH.

Looking at the statistics of retained placenta at NMCTH we found that it was more common in multigravida accounting for 65.1% of cases. While comparing the data for the relationship of period of gestation to the incidence of retained placenta we found that the incidence of

Table-2: Classification according to place of delivery

Home	Hospital	Vaginal delivery on the way to hospital	Total
53 (82.8%)	10 (15.6%)	1 (1.6%)	64

Table-3: Classification according to duration of retention

30 minutes-≤ hour	>1-4 hours	>4hours	Total
23 (35.9%)	28 (43.8%)	13 (20.3%)	64

retained placenta was most common in term gestation irrespective of the gravidity accounting for 89.1% of all cases and least common in pre-term gestations as shown by the data that 1.6% was of gestational week 28-32 and 6.2% were of gestational week 33-36. This fact has been well shown in the Table-1.

Most of the cases of retained placenta had delivery at home accounting for 82.8% of all cases as shown in Table-2. While comparing the data for duration of retention of placenta we found that most cases 28 (43.8%) had retention for 1 hour to 4 hours and least number 13 (20.3%) accounted for retention >4 hours as shown in Table-3. Of the cases who had retention for 30 minutes to 1 hour, 12 (52.2%) cases had home delivery, 10 (43.5%) had hospital delivery and 1 (4.3%) had vaginal delivery on the way to hospital. And all the cases of retention for more than 1 hour were home deliveries which accounted for 41 (64.1%) of cases (Table-4).

While comparing the data for amount of blood loss we found that most cases 55 (85.9%) cases had less than 500 ml blood loss and only 3 (4.7%) had more than 1 Litre blood loss as shown by Table-5. Of the cases who had blood loss of less than 500 ml, 47 (85.5%) cases were home deliveries and 1 (1.8%) case was vaginal delivery on the way to hospital. Of the cases who had blood loss of 500 ml- 1 Litre 3 (50.0%) had home delivery and rest 3 (50.0%) had hospital delivery. Of the cases who had blood loss of more than1 Litre all 3 had home delivery (Table-6).

When we looked into the definitive management offered to the 64 cases we found that in 39 (60.9%) cases the placenta was delivered by Controlled Cord Traction, in 18 (28.1%) cases the placenta was removed by Manual

Table-4: Classification according to duration of retention and place of delivery

Place of delivery	Duration of retention in Hours		
	30 minutes-≤ hour	>1-4 hours	>4hours
Home	12 (52.1%)	28 (100%)	13 (100%)
Hospital	10 (43.5%)	0	0
Vaginal delivery on the way to hospital	1 (4.4%)	0	0
Total	23 (100%)	28 (100%)	13(100%)

Table-5: Classification of amount of blood loss

< 500 ml	≥500 ml- 1 Litre	>1 Litre	Total
55 (84.9%)	6 (9.4%)	3 (4.7%)	64

Removal of Placenta and in the rest 7 (10.9%) cases had placenta lying in the vagina and manually picked up (Table-7).

Of the 64 patients with retained placenta 23 (35.9%) cases had normal haemoglobin level at the time of admission while 8 (12.5%) cases had severe anaemia (Table-8); 16 (25.0%) case required blood transfusion and 48 (75.0%) cases didn't require any blood transfusion (Table-9). Blood transfusion was given not only according to the level of haemoglobin but also depends on clinical findings since we assume haemoconcentration immediately after blood loss. Most of the cases required only 1-2 pints of blood transfusion while only one patient required > 4 pints of blood transfusion (Table-10).

While analyzing the distance of patient's present address from NMCTH , Most patients of retained placenta were presented from a bit far from hospital,AS 59.3% patients were from distance of around 3-8 kms from hospital (Table-11).

Out of 18 cases of MRP, 3 cases were found to have bicornuate uterus.

DISCUSSION

The study done at NMCTH from 1st of Jan 2010 till 30th of Jun 2011 showed the incidence of retained placenta to be 3.96%. The incidence of retained placenta varies greatly around the world. In less developed countries, it affects about 0.1% of deliveries but has up to 10.0% case fatality rate. In more developed countries, it is more common (about 3.0% of vaginal deliveries) but very rarely associated with mortality[1].The most frequent causes of PPH are retained placenta and uterine atony.[2] In one study conducted in India by Chatterjee[3] showing fifty two cases of retained placenta were studied in 7944 deliveries from January 1997 to December 1999, with an incidence of 0.65 percent where as another study by Dumbrowski *et al*[4] showed the overall frequency of retained placenta of 2.0% in United states of America. A comparative study conducted by Onwudieqwu and Makinde[5] between Germany and Nigeria in various parameters regarding childbirth showed higher rate of retained placenta in Germany (2.5%) than in Nigeria (1%).

Table-6: Classification of amount of blood loss in relation to place of delivery

Place of delivery	Amount of blood loss		
	< 500 ml	≥500 ml- 1 Litre	>1 Litre
Home	47 (85.5%)	3 (50.0%)	3 (100%)
Hospital	7 (12.7%)	3 (50.0%)	0
Vaginal delivery on the way to hospital	1 (1.8%)	0	0
Total	55 (100%)	6 (100%)	3 (100%)

Table-7: Management of retained placenta

Method	n. (%)
Controlled cord Traction	39 (60.9)
Manual Removal of Placenta	18 (28.1)
Placenta picked up –from vagina	7 (10.9)

In this study we observed that the frequency of retained placenta was higher for term gestations (89.06%), than for pre-term and post-term gestations. This observation is contradictory to the study carried out by Dombrowski *et al*[4] which showed that frequency of retained placenta was higher for pre-term gestations. This can be explained by the fact that the incidence of preterm delivery is only around 10%of all deliveries. But our results were consistent with the results of the study carried out by Dombrowski *et al*[4] and Titiz *et al*[6] which showed haemorrhage was higher for cases which required manual removal of placenta. These results were consistent with the study carried out by Khan *et al.*[7] Since this study is a prospective study, we tried to explore the past obstetric history. There are a lot of studies done to find out the risk factors for retained placenta. We particularly asked for history of retained placenta in previous delivery, H/O uterine scar (hystorotomy, LSCS, uterine instrumentation) curettage, past obstetric history like recurrent pregnancy loss etc and found that 10% of cases had one or more risk factor as mentioned above. Panparai and Boriboonhirunsarn[8] has given an impression that maternal age, previous uterine curettage and PROM were independently associated with increased risk of retained placenta. The condition should be explained to all pregnant women during antenatal visit.

Table-8: Level of haemoglobin on admission

Haemoglobin	n. (%)
<7 gm% (Severe)	8 (12.5)
7.1- 8.9 gm% (Moderate)	12 (18.8)
9-10.9 gm% (Mild)	21 (32.8)
>11 gm%	23 (35.9)
Total	64 (100)

Table-9: Requirement of blood transfusion

Blood Transfusion	n. (%)
Done	16 (25)
Not Done	48 (75)
Total	64 (100)

It is universally accepted that the use of uterotonic drug at or after delivery of baby is the only crucial step which can reduce the complication of third stage of labour including PPH and retained placenta. Various studies have been conducted to see the effect of use of ergot alkaloid in third stage of labour and third stage complications. The risk of retained placenta or manual removal of the placenta were significantly lowered in study group in Thiland[9]. We also observed that the amount of blood loss was less than 500ml for most cases 85.9%. All these cases were administered Inj. Syntometrine either before or after delivery of baby. These findings were consistent with the study carried out by Nordstrom *et al*[10] of Sweden. The study carried out by Prendiville *et al*,[11,12] by Sorian *et al*[13] and Sackett *et al*[14] also showed similar results.

Our study showed that the frequency of manual removal of placenta was 28.12% when Inj. Syntometrine was administered for active management of third stage of labour. This was contradictory to the study carried out by Yuen *et al*[15] of Hong Kong which showed that the incidence of manual removal of placenta was higher when Inj. Syntometrine was used, although the overall incidence remained low.

As complications of third stage of labour mostly depends on duration of third stage. A study analyzing the causes of PPH by AL Zirqi[16] showed 18% of primary PPH is due to retained placenta where as retained placenta accounted for 30% of cases of PPH in another study by Ben *et al*.[17] A study conducted in NMCTH in 2002 to see the reason why patients were brought to hospital after home delivery, interestingly 81% of cases came to hospital after home delivery for retained placent.[18] Our study also showed that the frequency of retained placenta was higher for multigravida- 64.06%. So amount of blood loss and frequency of retained placenta can be reduced if more and more pregnant ladies are made aware of risk of home deliveries and encouraged to have institutional deliveries.

Table-10: Amount of blood transfused

Number of pint transfused	1-2	3-4	>4
Number of patients	10	5	1

Table-11: Percentage of patients according to Distance from Hospital

Distance from NMCTH	%
Upto 3 KM	36.5
3-8 KM	59.9
>8 KM	3.7
Total	100

Active management of third stage of labour is the key factor to reduce the incidence of third stage complications

irrespective of the place of delivery. In places where institutional delivery is not possible as Nepal government has started teaching primary healthcare worker to give 10 units of oxytocin intramuscularly after delivery of baby, we should encourage this practice to minimize the morbidity and mortality related to third stage complication as much as possible.

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