

Placental Blood Drainage in Management of Third Stage of Labour

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Summary

Two hundred pregnant women were studied to evaluate placental blood drainage during vaginal delivery as a method of shortening the duration of third stage and the amount of blood loss.

In study group the umbilical cord was unclamped immediately after it was cut and was left open to drain in a graduated cylinder until the flow ceased or signs of placental separation appeared i.e. whichever was earlier. In control group, placental blood was not drained.

The duration of 3rd stage of labour in control group was 5.72 ± 2.075 min and in study group it was 2.94 ± 5.336 min. The amount of blood lost in the third stage of labour was 247.59 ± 151.49 ml and 193.63 ± 139.27 ml in control and study group respectively. Incidence of post-partum haemorrhage was 12% in control group and 6% in study group. Placental drainage of blood was thus found to be a safe, simple and non-invasive method for management of 3rd stage of labour.

Introduction

Third stage of labour is always a time of anxiety which no obstetrician can outline (Dieckman et al, 1947). Post-partum hemorrhage is the most common and dreaded complication of third stage of labour (Benrubi, 1990).

Several methods have been developed to encourage early delivery of placenta and thereby reduce the risk of PPH. The present study was undertaken for evaluating placental blood drainage during vaginal delivery as a method of shortening third stage and thus reducing the amount of blood loss.

Material and Method

The study was carried out on 200 pregnant women between 37-41 weeks of gestation admitted in the labour ward of Department of Obstetrics and Gynaecology at Pt. B.D. Sharma PGIMS, Rohtak.

The patients with normal singleton pregnancy with vertex presentation and spontaneous onset of labour were included in the study. They were divided into control group and study group. Control group or group A comprised of 100 cases in whom after delivery of baby the umbilical cord was doubly clamped and cut and placenta was delivered by controlled cord traction after signs of placental separation. Intravenous methergin was given after delivery of placenta.

Group B or study group included 100 patients in whom after delivery of baby the umbilical cord was unclamped immediately after it was cut and left open to drain in a graduated cylinder containing oxalate to prevent clotting of blood until the flow ceased or signs of placental separation appeared i.e. whichever was earlier. Following this placenta was delivered by controlled cord traction and intravenous methergin was given after placental delivery. The duration of third stage was calculated using a stop watch.

Packs, swabs and vaginal pads were pre weighed. Blood drained was collected in a graduated cylinder containing oxalate to prevent clotting of blood. The amount of maternal blood lost during the third stage of labour was calculated by subtracting the weight of dry pads and swabs from the weight of soaked pads and swabs taking one gram = one milliliter (ml or cc).

Separate pads were applied over the episiotomy site so that blood did not mix with blood that was lost during and after separation of placenta.

The duration of third stage of labour, blood loss and third stage complications in the two groups were compared and statistically analysed by applying large sample *Z* test.

Observations

The mean age of subjects in the two groups was comparable being 23.7 years in control group and 25.04 years in study group. Majority of the women in both the groups were primigravidae. In control group 42% and in study group 54% of patients were primigravidae. Only 2 women in control group were P_2 . Majority of the patients in both the groups belonged to 39-40 weeks of gestational age.

There was no significant difference between the duration of stage I and stage II in the two groups. However, the difference in the duration of third stage in the two groups was statistically significant (Table I).

The blood loss was more in control group than in study group and the difference was statistically significant (Table II).

Postpartum haemorrhage was present in 12% of cases in control group while in study group it was present in 6% of cases (Table III).

None of the patients of study group had retained placenta while it was encountered in 4% of women in control group.

Majority of the patients i.e. 60% in control group and 93% in study group had duration of third stage ranging from 1-5 minutes while in control group 3 patients had III stage amounting to more than 30 minutes and also had retained placenta (Table IV).

On comparative evaluation of duration of third stage and amount of blood lost in both the groups, it is evident that with increase in duration of third stage, the amount of blood loss during third stage increases.

Table I
Mean duration stages of labour in control and study group

Mean duration of stages	Control group (Group A)	Study group (Group B)	P value
First stage	7.47 hrs	7.74 hrs	> 0.05
Second stage	51.46 min	48.35 min	> 0.05
Third stage	5.72 min	2.94 min	< 0.01

Table II
Third stage blood loss in control and study group

	Control group (Group A)		Study group (Group B)	
	Primigravida	Multigravida	Primigravida	Multigravida
No. of cases	42	58	54	46
Range of blood loss	80-700ml	75-650ml	60-680ml	50-700ml
Mean blood loss	249.58ml	245.6ml	184.48ml	202.78ml
Mean	247.59ml		193.63ml	

Table III
Post partum complications in control and study group

Complications	Control Group (Group A)	Study Group (Group B)	P value
Retained placenta > 30 min.	4 (4%)	0 (0%)	< 0.01
Post partum Haemorrhage	12 (12%)	6 (6%)	< 0.01

Table IV
Comparative evaluation of duration of third stage with third stage blood loss in control and study group

Duration of III stage (minutes)	Control group (Group A)			Study group (Group B)		
	No. of patients	Range of blood loss (ml)	Mean blood loss (ml)	No. of patients	Range of blood loss (ml)	Mean blood loss (ml)
< 5 min	60 (60%)	75-650	224.4	93 (93%)	60-580	181.35
5-10 min	35 (35%)	95-600	270	5 (5%)	50-680	233.4
10-15 min	1 (1%)	100	100	2 (2%)	90-700	395
15-30 min	-	-	-	-	-	-
> 30 min	1 (1%)	500-580	522.5	-	-	-

Discussion

The mean duration of third stage of labour in study group was 2.94 ± 5.3 minutes and in control group it was 5.72 ± 2.07 minutes (Table I). The difference was statistically significant (p<0.01). Our results are similar to those reported by Sharma et al (1995) in patients undergoing caesarean section. In their study the third stage was 3.5 minutes and 1.3 minutes in control and study group respectively. The difference was significant statistically. As such the timing was shorter because they administered oxytocic drug after delivery of baby which was not given in the present study, rather it was given after delivery of placenta.

Reddy and Carey (1989) studied the traditional management of third stage of labour with umbilical vein injection of oxytocin. Those who received umbilical vein oxytocin had a shorter third stage of labour i.e. 4.1 vs 0.4 minutes. These values are higher than the duration of third stage in present study.

Raut (1990) also stated the mean injection expulsion time to be 3.16 ± 1.53 minutes and 4.16 ± 3.79 minutes in cases given intravenous methergin with delivery of anterior shoulder and 5 units of oxytocin in 10 ml of normal saline intraumbilically respectively. On the contrary the duration of third stage in study group in the present study was 2.94 ± 5.33 minutes although control group values in present study are comparable to corresponding values in aforementioned studies.

In the study carried by Reddy and Carey (1989) to compare traditional management of III stage of labour with umbilical vein oxytocin, blood loss during third stage was 135ml versus 350ml in study and control group respectively. These values are comparable to the corresponding values in the present study.

The incidence of retained placenta in our study is comparable to that in the study by Sharma et al (1995) who performed manual removal of placenta in 2 per cent and 11 per cent in study and control groups respectively, the difference being statistically significant.

Raut (1990) reported the incidence of retained placenta in cases instilled with 10ml of oxytocin in umbilical vein and those with intravenous methergin at delivery of anterior shoulder to be 0.66 per cent and 3.66 percent respectively. These results are similar to the present study where neither prophylactic oxytocic agent nor any solution was instilled intraumbilically thus obviating the patient from the side effects.

Conclusion

Placental drainage of blood via umbilical cord is a safe, simple and non-invasive method. It has lesser complications and keeps the obstetrician free of anxiety. It can also be used in women in whom intravenous fluids are to be restricted and in whom methylergometrine is contraindicated due to pregnancy induced hypertension, congestive heart failure, pregnancy with heart disease Rh negative blood group etc. Thus this method can be added as an additional component in the package of active management of third stage of labour.

References

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