

Role of Intra Umbilical Oxytocin injection in the Management of Retained Placenta

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ABSTRACT

Objective: To determine the efficacy of intra umbilical oxytocin injection as a treatment for retained placenta.

Design: Quasi experimental study.

Place and duration of study: This was conducted at DHQ Hospital Faisalabad over a period of two year from January 2005 to January 2007. **Patients and methods** A total 30 haemodynamically stable women having singleton pregnancy and vaginal delivery with retained placenta admitted in labour ward were selected. 20i.u of oxytocin diluted in 20cc normal saline was injected through umbilical vein. **Results:** Thirty cases of retained placenta were managed during study period. The highest percentages of patients (66.6%) with retained placenta were between the ages of 20-30 years. Majority of patients (46.6%)

having parity between 1 to 4. 56.6% of patients having gestation between 38-39 weeks. Intra umbilical oxytocin injection was successful in 70% of patients while 30% of patients required manual removal of placenta. 60% of patients expelled placenta in less than 10 minutes. Amount of blood loss was less than 80ml in 71.4% of patients and 28.5% of patients received blood transfusion. None of patient developed side effects of drug. **Conclusion** Injection of oxytocin into the umbilical vein is safe procedure that can cause placental separation and delivery and thus avoiding the anaesthetic risk, genital tract trauma, and infection associated with manual removal of placenta.

Key words: Intra umbilical oxytocin, retained placenta.

INTRODUCTION

World wide 5, 85,000 women die every year as a result of pregnancy and child birth and 99% of these deaths are occurring in the developing countries¹. About 25% of maternal deaths in Asian countries are due to haemorrhage during pregnancy, birth or postpartum period. Of these almost 30% are contributed by postpartum haemorrhage (PPH)². PPH is one of the leading cause of maternal mortality and morbidity³. Major causes of postpartum haemorrhage are uterine atony, genital tract trauma and retained placenta^{4,5}. Retained placenta is one of the commonest cause of postpartum haemorrhage⁶. It complicates 2% of all deliveries⁷. It is a hallmark of mismanagement of third stage of labour⁸.

Retained placenta is an undelivered placenta for more than thirty minutes but there is no definite consensus on time limit. Risk factors for retained placenta are gestational age < 36 week, unattended delivery, dysfunctional labour, augmented labour, grand multiparty, pre-eclampsia and previous uterine surgery⁹.

In modern practice manual removal of the placenta is used if there is failure to deliver the placenta half an hour after delivery of the newborn. Manual removal of placenta carries a risk of trauma, haemorrhage, rehesus alloimmunization, postpartum infection, uterine synaechia, infertility and anaesthetic complications. In general infrastructure such as operation theater facilities and anaesthetists are not available at primary care level. Therefore a less invasive and inexpensive form of management may be

valuable to reduce the need for operative manual removal of retained placenta. The injection of oxytocin into umbilical vein is a new procedure¹⁰. This causes placental separation and delivery by retro placental myometrial contraction. The benefits of intra umbilical oxytocin injection over manual removal of the placenta are in terms of avoidable anaesthetic risks and lower chances of genital tract trauma and infection. The objective of our study was to assess the role of intra umbilical oxytocin injection as an effective technique for the management of retained placenta.

PATIENTS AND METHODS

This was quasi experimental study. Women with singleton pregnancy beyond 34 weeks of gestation, haemodynamically stable with retained placenta irrespective of age, parity and socioeconomic factors were included in this study. Women with previous history of uterine surgeries like previous caesarean section and myomectomy were not included in this study.

Side effects of drug like nausea and vomiting and benefits like no risk of anesthesia and genital tract trauma were explained to the patients. Patients were thoroughly evaluated by taking proper history, carrying general physical, abdominal and pelvic examination to see amount of bleeding, size of uterus, length of umbilical cord and whether cervical canal is open or close or any associated genital tract trauma. Blood sample for hemoglobin estimation, grouping and cross matching was taken. Patients were put in dorsal position. Oxytocin 20 i.u. diluted in 20ml of saline with 20 gauge needle was injected in the umbilical vein. Patients were closely monitored for vital signs and amount of blood loss. Patients were observed for thirty minutes for expulsion of placenta. If placenta remained unexpelled for more than 30 minutes or blood loss was significant then manual removal of placenta under general anesthesia was carried out.

All this information was recorded on specially designed proforma.

RESULTS

During two year study from January 2005 to January 2007; 30 patients with retained placenta were managed with this technique. All were admitted in emergency maternity ward and had singleton vaginal deliveries.

Retained placenta was diagnosed in all these patients on clinical ground. Majority of patients belonged to low socioeconomic class. Out of 30 patients the highest percentage (66.6%) of patients were between the age of 20-30 years. The majority of patients having parity between one to four (46.6%).

Vital signs of patients remained stable. The average amount of blood loss during the procedure was less than 80ml and only 30% (2 cases) of patients required blood transfusion.

The 70% (21 cases) of retained placenta were expelled and time taken for expulsion was <10 minutes in majority of cases. In 30% of patients manual removal of placenta was done because of failure of placental expulsion by injection of oxytocin into the umbilical vein. None of the women developed side effects of drug.

Table 1:

Relation of age with retained placenta (n= 30)

Age group	No.	%
20-30 years	20	66.6
31-34 years	08	26.6
35-40 years	02	6.6

Table 2:

Relationship of retained placenta with parity (n= 30)

Parity	No.	%
Para 1- Para 4	14	46.6
Para 5- Para 7	12	40.0
Para 8 and above	04	13.3

Table 3:

Relationship of retained placenta to gestational age (n= 30)

Gestational age	No.	%
34 - 37	3	10
38 - 39	17	56.6
40 and above	10	33.3

Table 4:
Time taken for expulsion (n= 21)

Time	No.	%
< 10 minutes	18	60
10 – 30 minutes	03	10

Table 5:
Amount of blood loss in retained placenta (n= 21)

Amount	No.	%
Up to 100ml	15	71.4
> 100ml	06	28.5

Table 6:
Percentage of patients who received blood transfusion

Blood Transfusion	No.	%
Needed	06	28.5
Not Needed	15	71.4

Table 7:
Frequency and percentage of patients required manual removal of placenta.

Blood Transfusion	No.	%
Required	09	30%
Not required	21	70%

DISCUSSION

If a retained placenta is left untreated, there is a high-risk of maternal death. This is more frequent when manual removal is not immediately available or when travelling times to hospital are long. Even then manual

removal of the placenta carries significant risk of hemorrhage and infection plus risks associated with general anesthesia. Transporting the patient from the home or birthing room to delivery room or operating room is also disruptive to the patient and the initial patient infant attachment process. Clearly, an effective medical treatment could have major implications for the reduction of maternal mortality and morbidity. Recently a new technique has been introduced in which oxytocin is injected through umbilical vein and this causes retroplacental myometrial contraction and placental expulsion.

Subgroup meta-analysis of the randomized trials from the Cochrane review¹¹ suggest that doses of 20-i-u of oxytocin may reduce the need for manual removal by over 75%. Habek-D, Franicevic D in 2007 in Croatia reported in their study that intra umbilical oxytocin is effective, non invasive and clinically safe method of shorting third stage of labour in women with retained placenta. In their study the rate of therapeutic success was 76.9%¹². It compares favorably with our results i.e. success rate of placental expulsion was 70% (21 patients) and only 30% (9 cases) of patients required manual removal of placenta despite intraumbilical oxytocin injection and more over amount of blood loss is also less. Ghulmiyyah LM from USA in 2007 studied that (IUV) intraumbilical vein injection of oxytocin resulted in placental expulsion in not more than 15 minutes¹³. In our study placental expulsion occurred in less than 10 minutes. Athavale RD¹⁴ and Carroli G¹⁵ and colleagues have reported very small amount of blood loss during procedure. In our study the total amount of blood loss during procedure was only 80ml and only 30% (9 cases) patients required blood transfusion.

CONCLUSION

The injection of oxytocin into the umbilical vein is a safe procedure that causes placental separation and delivery and thus preventing the need for manual removal and the risk associated with the use of anaesthesia and puerperal complications such as infection

and trauma to the genital tract. This technique can be useful in nurse-midwifery practice in rural setting in the management of a retained placenta or prolonged third stage of labour.

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