



Assessment of Maternal and Fetal Outcome in Pre Labour Rupture of Membranes

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ARTICLE INFO

Article history:

Received: 27 August 2015;

Received in revised form:

23 September 2015;

Accepted: 03 October 2015;

Keywords

Labor,
PROM,
Pregnancy,
Meconium stain,
LSCS.

ABSTRACT

To assess fetal and maternal outcome in PROM, and also to know the risk factors behind these cases. It is a prospective study done in our hospital from January 2014 to June 2014 in the Department of Obstetrics and Gynaecology. Out of 100 cases, the incidence of LSCS is 12.33% in the study group and birth asphyxia about 6.6% and Respiratory distress in fetus around 14.66%. PROM must be managed by inducing labour either by PGE2 or Misoprostol to reduce the rate of infection and by decreases the chances of baby stay in NICU(neonatal intensive care unit).

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Introduction

PROM defined as rupture of membrane before the onset of labor or uterine contraction at term. PROM is one of the most common complications of pregnancy that has major impact on fetal and maternal outcome. The incidence is 1 in 10. About 5-10% of women who present with PROM at term, and because of this, most women without any risk factors can turn into high risk women along with the fetus. The aim of modern obstetrics is to have a healthy baby and healthy mother.

PROM can be either term or preterm. Prolonged PROM means PROM more than 24 hours, which is associated with an increased ascending infection [1,2]. Preterm PROM means PROM prior to 37 weeks of gestations which complicates 2-4% of singleton and 7-20% of twin pregnancies [3,4]. The normal physiologic changes accompany cervical ripening in preparation for labor at term and result in weakening of the membranes at cervical os levels [5]. The cause of PROM is not clear but few risk factors like urinary tract, sexually transmitted diseases and lower genital infection. The maternal problem associated with PROM are, infection, cord prolapsed, unfavorable cervix which leads to operative delivery. While the fetus can have sepsis and its related complication. The diagnosis of PROM plays a vital role after taking proper history, gynaecological examination by sterile speculum and finally by USG. Other extra tests like Nitrazine test, Ferning test, Indigo carmine dye test and Insulin-like growth factor binding protein-1 can be done. Few differential diagnosis for PROM are Urinary incontinence, cervical mucus, semen, Douching, excess vaginal secretions.

Methods

This study is a prospective study done in the Dept of Obstetrics and Gynaecology of Dr. B.R. Ambedkar Medical College and Hospital, Bangalore, done during January 2014 to June 2014. About 200 pregnant women taken and formed into two groups of 100 each as study and control groups. Exclusion Criteria for this study were Twins gestation, Medical disorders and Previous LSCS.

Results

Out of 100 women in the study group, the incidence of PROM is more in the age group of 21-25 yrs was around 70% in study and 59% in control. The age of women included in the study were in the range of 18-35yrs as shown in table 1. Parity distribution in the study group were more in second gravid about 40% compare to 42% of primi gravid in control group as shown in table 2. Incidence of PROM is more in term pregnancies as shown in table 3.

In this study high rupture of membranes were present in 19 cases and these women continue to leak fluid in small amounts. High leaks may seal spontaneously. These are not associated with maternal or fetal complications as shown in table 4. Out of 100 cases of PROM in the study, 11 cases had meconium stained with fetal distress which went for LSCS as shown in table 5.

In this study group 98% of the cases had cephalic presentation and 2 cases of mal presentation as shown in table 6 and out of 100 cases in the study, coitus within the preceding 15 days were found to be 20% which may be the risk factor for PROM as shown in table 7.

Bacteriological infections of amniotic fluid in PROM in the study showed that 15 positive cases. Organisms grown were E.Coli, Klebsiella, Proteus and S Aureus as shown in table 8. Induction of labour done by using misoprostol 44 women and 41 with PGE2, among study group as shown in table 9. In PGE2 induction method, out of 41 cases 36(87.8%) women delivered normally while 5 women went for LSCS. In misoprostol induction method, out of 44 cases 39(88.6%) women delivered normally while 5 women went for LSCS as shown in table 10.

Out of 100 cases in the study 85 cases were delivered vaginally with or without induction and 15 cases delivered by LSCS. In spontaneous delivery group 5 went for LSCS because of fetal distress and 10 had normal vaginal delivery as shown in table 11.

Table No 1. Age Incidence of PROM

Age(years)	Study	Control
18-20	6 (6%)	9 (9%)
21-25	70 (70%)	59 (59%)
26-30	13 (13%)	21 (21%)
31-35	11(11%)	11 (11%)
Total	100	100

Table No 2. Parity Incidence of PROM

SI No	Gravidity	Study	Control	P Valve
1	PRIMI	25	42	0.0303 (Not Significant)
2	G2	40	38	
3	G3	25	16	
4	G4	10	4	
	Total	100	100	

Table No 3. Incidence of PROM in Relation to Gestational Age.

Gestational Age (In wks)	Study	Control
37	5	3
38	23	17
39	24	16
40	33	45
>41	15	19
Total	100	100

Table No 4. Membrane Status in PROM

Status	Study	Control
Absent	81	100
Present	19	0
Total	100	100

Table No 5. Color of liquor in PROM

Color	Study	Control
Clear	89	100
Meconium	11	0
Total	100	100

Table No 6. Fetal Presentation with PROM

Presentation	Study	Control
Vertex	98	100
Breech	2	0
Total	100	100

Table No 7. Coitus as a risk Factor

Coitus	Study	Control
Present	20	0
Absent	80	100
Total	100	100

Table No 8. Bacteriological study of Amniotic fluid in PROM

Infection	Nos
Nil	85
E.Coli	08
Klebsiella	03
Proteus	02
S.areus	02
Total	100

Table No 9. Induction of labour

Infection	Nos
PGE ₂	41
Miso	44
Spontaneous	15
Total	100

Table no 10. Mode of delivery

PGE₂	Normal	36 (87.8%)
	LSCS	05 (12.2%)
	Total	41 (100)
Miso	Normal	39 (88.6%)
	LSCS	05 (11.4%)
	Total	44 (100)

Table No 11. Mode of Delivery

Delivery	Study
Normal	85
LSCS	15
Total	100

Table No 12. Fetal Outcome Table No 13. Maternal Outcome

Study	Nos	Study	Nos
Normal	83	Normal	81
Resp distress	11	Puerperal fever	07
Birth Asphyxia	05	PPH	10
Neonatal Sepsis	01	Wound infection	02
Total	100	Total	100

As far as, fetal outcome, birth asphyxia were seen in 5 babies and respiratory distress noted in 11 cases shown in table 12. Finally out of 100 cases, 10 cases had PPH and 7 cases developed puerperal fever. 2 cases had wound infection shown in table 13. No cases had any signs of chorioamnionitis because of proper antibiotics given during intrapartum period.

Discussion

PROM causes significant maternal and neonatal morbidity. The obstetrician is faced to challenge the situation. Option for management for PROM included expectant and immediate management.

Histologic studies of site of membrane at term shows a altered morphology by thickening of the connective tissue components of the membranes, thinning of the cytotrophoblast layer of deciduas, and its disruption of the connections between amnion and chorion. At cellular level, these changes result from the release of phospholipases, cytokines, matrix metalloproteinases in response to physiologic or pathologic stimulus [6].

At term, 50% of pregnancies complicated by PROM will go into labour spontaneously within 12 hrs, 70% within 24 hrs, 85% within 48hrs and 95% within 72hrs in absence of obstetric intervention [7,8].

The fetal membranes serve as a barrier to ascending infection. Once the membranes rupture, delivery is recommended because of risk of ascending infection for both mother and fetus and its other complications.

Neonatal complications like respiratory distress, birth asphyxia, sepsis are more common in PROM. Maternal complication include chorioamnionitis, post partum endometritis and wound infection if had operative delivery.

In this study 42% were second gravid, as compared with control were 42% were primi. But Calvin from his extensive studies showed increased incidence of multigravida. Among 100 women in the study group 81 patients were with absent membranes with leaking liquor and 19 cases had intact membranes with high leaking liquor as compared with all 100 cases had intact membranes as control group. Only 11 cases had meconium stained liquor as compared with control group, all had clear liquor.

Fetal malpresentation as one of the risk factor for PROM . In this study 2 cases were presented with breech presentation while in control group all presented with vertex presentation.

Apart from presentation as risk factor for PROM, Coitus also played major role by 20% in this study. Other risk factors like infection where bacteriological evidence of positive cultures for E coli, Kiebsiella, staph, aureus and proteus were seen.

Once the diagnosis of PROM is confirmed, then active management of PROM done either by induction with PGE₂, or Misoprostol , where the time interval of delivery is reduced.

After taking all parameters into consideration, 15 cases underwent LSCS because of fetal distress and failed induction in the study group but in control group only 8 cases were LSCS.

Maternal complication like chorioamnionitis were not present in study group but other complication like wound infection in 2 cases, PPH in 10 cases and Puerperal fever in 7 cases noted in the study group.

Among 17 cases of perinatal morbidity in this study group, 11 cases of respiratory distress, 5 cases of birth asphyxia and neonatal sepsis in 1 case noted in the study group.

Conclusion

PROM complicates 2-15% of all deliveries and is associated with 18-20% of perinatal deaths. A better understanding of the diagnosis and management of PROM will allow obstetrician to optimize perinatal outcome and minimize neonatal morbidity.

Conflict of Interest

The authors declare that there are no conflict of interest

Source OF Funding

None

Acknowledgement

Authors acknowledge the scholars whose articles are cited and included in references of this manuscript. The authors are also grateful to authors/editors/publishers of all those articles and journals from where the literature for this article has been reviewed and discussed.

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