

ORIGINAL ARTICLE**Evaluation of outcome of cases of premature rupture of membrane**

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ABSTRACT:

Background: Premature rupture of membranes refers to the breaking of the amniotic sac or the bag of waters before the onset of labor in a pregnant woman. The present study was conducted to assess outcome of cases of premature rupture of membrane. **Materials & Methods:** 82 cases of premature rupture of membrane in women with > 37 weeks of gestation was enrolled. A detailed pelvic examination was done. As per speculum examination, discharge, leaking p/v and colour of liquor were recorded. Maternal outcome was also recorded. **Results:** Rupture of membrane to delivery interval was <16 hours seen in 30, 16-20 hours in 45 and >20 hours in 7 cases. Indication for LSCS (32) was fetal distress in 21, failure to progress in 5, malpresentation in 5 and failed induction in 1 case. The difference was significant ($P < 0.05$). Maternal outcome was UTI in 12, adherent placenta in 5, chorioamnionitis 8, fever in 21, wound infection in 5, PPH in 2, maternal mortality in 3 and puerperal sepsis in 7 cases. The difference was significant ($P < 0.05$). **Conclusion:** Maternal morbidity was associated with increased duration of PROM. Management of PROM should involve complete evaluation of risks and benefits of conservative management.

Key words: Premature rupture of membrane, pelvic examination, speculum examination

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INTRODUCTION

Premature rupture of membranes (PROM) refers to the breaking of the amniotic sac or the bag of waters before the onset of labor in a pregnant woman. The amniotic sac contains the amniotic fluid that surrounds and protects the developing fetus. PROM can occur spontaneously, without any known cause, or it can be caused by various factors such as infections, trauma, cervical incompetence, or certain medical conditions. It is considered premature when it occurs before 37 weeks of gestation.¹ When PROM happens, the woman may experience a sudden gush or a slow leak of fluid from the vagina. The fluid is typically clear and odorless, although it may be slightly yellowish. It is important to note that any leakage of fluid from the vagina during pregnancy should be evaluated by a gynecologist, as it may indicate PROM or another complication.²

PROM carries certain risks, both for the mother and the baby. Some potential risks for the mother include infection, placental abruption (separation of the placenta from the uterus), and cord prolapse (when the umbilical cord slips into the birth canal before the baby).³ For the baby, risks include preterm birth, infection, and potential complications related to prematurity. In some cases, labor may start spontaneously after PROM, but if it doesn't, healthcare providers may consider inducing labor to reduce the risk of infection or other complications. In certain situations, if the risks to the mother or baby are significant, the healthcare provider may recommend an immediate delivery, even if it is before the full term.⁴

In most cases, labour begins spontaneously within 24 hours of the term PROM, but in up to 4% of cases, it does not begin spontaneously within 7 days. 90% of women who experience a ruptured membrane go into labour within 72 hours with expectant management, and 60% to 80% do so within 24 hours. There is a rise in the frequency of neonatal illnesses and hospitalisations if there is a delay of more than 18 hours between leakage and birth.⁵ The present study was conducted to assess outcome of cases of premature rupture of membrane.

MATERIALS & METHODS

The present study comprised of 82 cases of premature rupture of membrane in women with > 37 weeks of gestation. All subjects gave their written consent for the participation in the study.

Data such as name, age, etc. was recorded. A detailed pelvic examination was done. As per speculum examination, discharge, leaking p/v and colour of liquor were recorded. Then swab was taken from amniotic fluid for gram stain culture and sensitivity. A thorough "per vaginal examination" was performed to check the consistency, effacement, dilatation, position, and position of the cervix as well as its effacement and position, the presence or absence of membranes, the vertex's station and position, the presence of a caput, molding, and pelvic assessment. Maternal outcome was also recorded. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Patients characteristics

Parameters	Variables	Number	P value
Rupture of membrane to delivery interval (hours)	<16	30	0.28
	16-20	45	
	>20	7	
Indication for LSCS (32)	Fetal distress	21	0.03
	Failure to progress	5	
	Malpresentation	5	
	Failed induction	1	

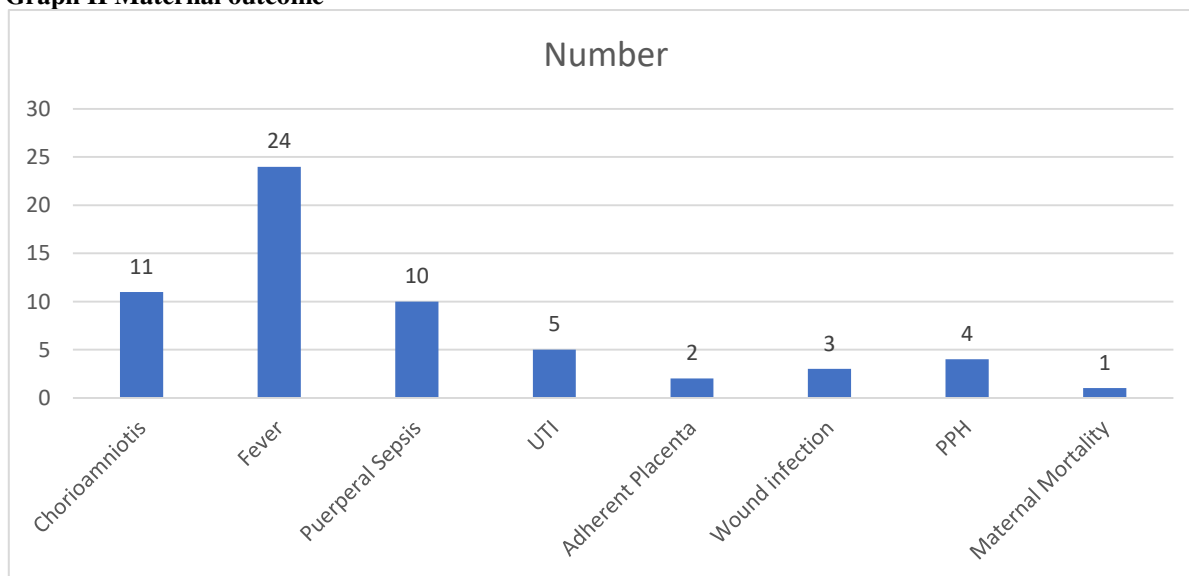
Table I shows that rupture of membrane to delivery interval was <16 hours seen in 30, 16-20 hours in 45 and >20 hours in 7 cases. Indication for LSCS (32) was fetal distress in 21, failure to progress in 5, malpresentation in 5 and failed induction in 1 case. The difference was significant (P< 0.05).

Table II Evaluation of maternal outcome

Maternal outcome	Number	P value
UTI	12	0.05
Adherent placenta	5	
Chorioamnionitis	8	
Fever	21	
Wound infection	5	
PPH	2	
Maternal mortality	3	
Puerperal sepsis	7	

Table II, graph I shows that maternal outcome was UTI in 12, adherent placenta in 5, chorioamnionitis in 8, fever in 21, wound infection in 5, PPH in 2, maternal mortality in 3 and puerperal sepsis in 7 cases. The difference was significant (P< 0.05).

Graph II Maternal outcome



DISCUSSION

High maternal morbidity and mortality risk is linked to premature membrane rupture. Before uterine contractions begin, the chorioamnion spontaneously ruptures, which causes increasing cervical dilatation. Approximately 8% of all pregnancies have it. Premature membrane rupture occurs about 18–20% of the time in poor nations. Chorioamnionitis, which causes endometritis, puerperal pyrexia, wound infection, and placental abruption, is one example of a maternal morbidity. Additionally, repercussions could

worsen as a result of obstetric interventions such as caesarean sections and assisted deliveries.⁶

There may be a number of underlying causes for chorioamnionitis membrane rupture, albeit PROM and PPROM frequently lack known aetiologies. It has been established that the pathophysiology leading to PROM at term differs from the pathophysiology leading to PPROM. At term, physiologic changes and the shearing forces brought on by contractions may cause the membranes to weaken. Premature membrane rupture has made it more challenging to

pinpoint generalised membrane weakness. Instead of a generalised weakness of the membranes, PPROM could be caused by a localised deficit.⁷

The majority of premature membrane rupture instances can be identified based on the patient's medical history and physical examination. The possibility to check for cord prolapse, evaluate cervical dilation and effacement, and acquire cultures as necessary are all made possible by sterile speculum examination.⁸ The presence of amniotic fluid flowing from the cervical canal and gathering in the vagina is visible proof of membrane rupture. The biggest area of uncertainty about PROM management is the onboarding of new employees or expectant management.^{9,10} Accurate assessment of gestational age, foetal position, the presence or absence of chorioamnionitis, and foetal heart rate monitoring are essential to the therapy of membrane rupture. Based on previous culture results, group B streptococcal prophylaxis should be administered.¹¹ The present study was conducted to assess outcome of cases of premature rupture of membrane.

We found that rupture of membrane to delivery interval was <16 hours seen in 30, 16-20 hours in 45 and >20 hours in 7 cases. Indication for LSCS (32) was fetal distress in 21, failure to progress in 5, malpresentation in 5 and failed induction in 1 case. Rane et al¹² found that the mean time from membrane rupture to delivery dropped from 15 days between 24 and 28 weeks to 11 days between 28 and 32 weeks, 4.4 days between 32 and 34 weeks, and 2.1 days between 34 and 36 weeks. Most women gave birth vaginally. As the gestational age at admission grew, the rate of spontaneous labour increased as well. The difference between the rates of spontaneous labour at 28 to 32 weeks and 34 to 36 weeks was statistically significant ($p = 0.001$). Intrauterine foetal death, extensive oligohydramnios, and clinical chorioamnionitis were the triggers for labour induction. Clinical chorioamnionitis (6%), as well as postpartum sepsis (6%), were the most frequent complications.

We observed that maternal outcome was UTI in 12, adherent placenta in 5, chorioamnionitis in 8, fever in 21, wound infection in 5, PPH in 2, maternal mortality in 3 and puerperal sepsis in 7 cases. Yang et al¹³ found that at the commencement of membrane rupture and birth, the mean gestational ages were 22.1 weeks and 23.8 weeks, respectively. With a mean of 8.6 days, the latency from membrane rupture to delivery ranged from 0 to 83 days. 22 stillbirths (30.1%) and 13 neonatal deaths (17.8%) among the 73 pregnant patients resulted in a perinatal death rate of 47.9%. Based on gestational age at the time of foetal membrane rupture, the perinatal survival rate was

12.1% at less than 23 weeks, 60% at 23 weeks, and 100% at 24 to 26 weeks. Puerperal endomyometritis caused minimal maternal morbidity in 5 (6.8%) cases; one of these cases developed an infection, but there were no long-term effects. 8 liveborn infants, or 15.7%, had pulmonary hypoplasia.

CONCLUSION

Authors found that maternal morbidity was associated with increased duration of PROM. Management of PROM should involve complete evaluation of risks and benefits of conservative management.

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