

ORIGINAL RESEARCH

Assessment of fetal and maternal outcomes in instrumental vaginal delivery patients

Dr. Vrinda Khemani

Assistant Professor, Department of Obs & Gynae, K M Medical College & Hospital, Mathura, Uttar Pradesh, India

Corresponding Author

Dr. Vrinda Khemani

Assistant Professor, Department of Obs & Gynae, K M Medical College & Hospital, Mathura, Uttar Pradesh, India

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ABSTRACT

Background: An essential part of obstetric care is instrumental vaginal delivery, which might involve vacuum extraction or forceps extraction for fetal head delivery. The present study was conducted to assess fetal and maternal outcomes in instrumental vaginal delivery patients. **Materials & Methods:** 82 women undergoing instrumental vaginal delivery were divided into 2 groups of 41 each. Group I underwent vacuum deliveries and group II forcep deliveries. Parameters such as fetal and maternal outcomes were recorded. **Results:** Indications for instrumental vaginal delivery was medical disorders in 18 and 23, fetal distress in 12 and 10, severe pre-eclampsia/eclampsia in 5 and 1, preterm delivery in 3 and 2, twin gestation in 1 and 4 and cord prolapse in 2 and 1 patients in group I and II respectively. The difference was non-significant ($P > 0.05$). Birth weight < 2 kgs was seen in 5 and 3, 2-2.5 kgs in 6 and 5, 2.5-3 kgs in 12 and 20 and > 3 kgs in 16 and 13 patients in group I and II respectively. APGAR at 1 minute was < 3 seen in 7 and 10, 4-7 in 10 and 12 and 7-10 in 23 and 19 patients respectively. APGAR at 5 minutes was < 3 in 5 and 8, 4-7 in 11 and 13 and 7-10 in 25 and 20 patients in group I and II respectively. The difference was significant ($P < 0.05$). Fetal complications was neonatal convulsions in 2 and 1, jaundice in 5 and 6, scalp injuries in 2 and 3. Maternal complications was perineal injuries in 3 and 4, cervical lacerations in 1 and 2 and PPH in 5 and 3 in group I and group II respectively. The difference was non-significant ($P > 0.05$). **Conclusion:** When used carefully by a qualified obstetrician, instrumental vaginal delivery is still a valuable procedure. It contributes to better mother and newborn outcomes as well as a decrease in the frequency of cesarean deliveries.

Keywords: forcep, vaginal, vacuum extraction

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INTRODUCTION

An essential part of obstetric care is instrumental vaginal delivery, which might involve vacuum extraction or forceps extraction for fetal head delivery. Worldwide, the number of cesarean births has increased recently. In order to reduce the number of cesarean births and the associated morbidities, instrumental vaginal deliveries are crucial. Shortening the second stage of labor for the sake of the mother, suspicion of an immediate or possible fetal compromise, and extended second stage of labor are the most prevalent reasons for artificial vaginal delivery. Absolute contraindications include malpresentation, incompletely dilated cervix, unengaged fetal head, cephalopelvic disproportion, and fetal clotting problems.

The percentage of induction of labor cases worldwide has steadily and significantly increased in comparison to spontaneous labor. Indeed, the overall rate of labor induction is increasing more quickly than the rate of pregnancy problems that would necessitate a

medically necessary induction. This disproportionate rise has multiple, intricate causes. The most frequent cause is better birth planning on the part of the obstetricians, the patient, and her family. Additional factors include easier access to cervical ripeners, a more accepting stance toward marginal or elective inductions, and excessive legal restrictions and worries on the part of medical professionals. The present study was conducted to assess fetal and maternal outcomes in instrumental vaginal delivery patients.

MATERIALS & METHODS

The present study consisted of 82 women undergoing instrumental vaginal delivery of both genders. All gave their written consent to participate in the study. Data such as name, age, etc. was recorded. Patients were divided into 2 groups of 41 each. Group I underwent vacuum deliveries and group II forcep deliveries. Parameters such as gravida, the kind of instrumental vaginal delivery, the post-delivery per

speculum examination findings (such as perineal tears, periurethral tears, cervical lacerations, or vaginal lacerations), and other maternal complications and newborn outcome as measured by APGAR rating

at 1 and 5 minutes were recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Indications for instrumental vaginal delivery

Indications	Group I	Group II	P value
Medical disorders	18	23	0.19
Fetal distress	12	10	
Severe pre-eclampsia/eclampsia	5	1	
Preterm delivery	3	2	
Twin gestation	1	4	
Cord prolapse	2	1	

Table I shows that indications for instrumental vaginal delivery was medical disorders in 18 and 23, fetal distress in 12 and 10, severe pre-eclampsia/eclampsia in 5 and 1, preterm delivery in 3 and 2, twin gestation in 1 and 4 and cord prolapse in 2 and 1 patients in group I and II respectively. The difference was non-significant ($P > 0.05$).

Table II Comparison of parameters

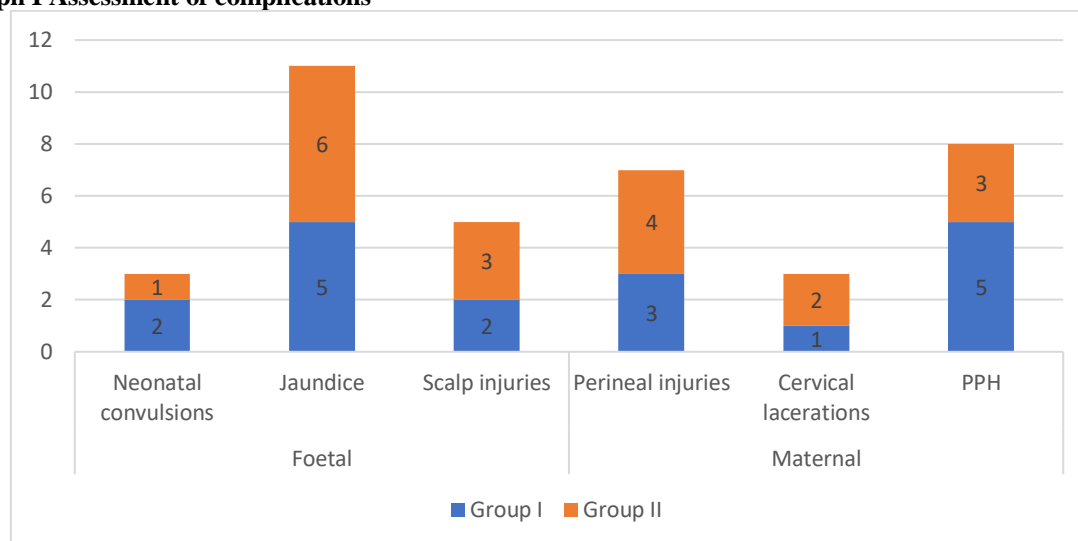
Parameters	Variables	Group I	Group II	P value
Birth weight (kgs)	<2	5	3	0.82
	2-2.5	6	5	
	2.5-3	12	20	
	>3	16	13	
APGAR at 1 minute	<3	7	10	0.76
	4-7	10	12	
	7-10	23	19	
APGAR at 5 minutes	<3	5	8	0.51
	4-7	11	13	
	7-10	25	20	

Table II shows that birth weight <2kgs was seen in 5 and 3, 2-2.5kgs in 6 and 5, 2.5-3 kgs in 12 and 20 and >3 kgs in 16 and 13 patients in group I and II respectively. APGAR at 1 minute was <3 seen in 7 and 10, 4-7 in 10 and 12 and 7-10 in 23 and 19 patients respectively. APGAR at 5 minutes was <3 in 5 and 8, 4-7 in 11 and 13 and 7-10 in 25 and 20 patients in group I and II respectively. The difference was significant ($P < 0.05$).

Table III Assessment of complications

Parameters	Variables	Group I	Group II	P value
Foetal	Neonatal convulsions	2	1	0.91
	Jaundice	5	6	
	Scalp injuries	2	3	
Maternal	Perineal injuries	3	4	0.73
	Cervical lacerations	1	2	
	PPH	5	3	

Table II, graph I show that foetal complications was neonatal convulsions in 2 and 1, jaundice in 5 and 6, scalp injuries in 2 and 3. Maternal complications was perineal injuries in 3 and 4, cervical lacerations in 1 and 2 and PPH in 5 and 3 in group I and group II respectively. The difference was non-significant ($P > 0.05$).

Graph I Assessment of complications

DISCUSSION

The gestational age at which the delivery occurs is important in determining the perinatal outcome. Previously, the period from 37 weeks to 42 weeks of gestation was considered “term” with uniform foeto-maternal outcome in those weeks.

We found that indications for instrumental vaginal delivery was medical disorders in 18 and 23, fetal distress in 12 and 10, severe pre-eclampsia/eclampsia in 5 and 1, preterm delivery in 3 and 2, twin gestation in 1 and 4 and cord prolapse in 2 and 1 patients in group I and II respectively. Sonawane et al¹¹ studied the maternal and neonatal outcome in patients undergoing instrumental vaginal delivery (vacuum & forceps delivery). A total of 266 patients were included. 1.39 % instrumental vaginal deliveries were noted. The most common age group in present study was 21- 25 years in both groups (39 %- vacuum, 41%-forceps). Instrumental vaginal deliveries were common in patients with 37-40 weeks of gestation. The most common indication for Instrumental vaginal delivery (vacuum & forceps) was delayed second stage (32 %) followed by fetal distress (26 %) & medical disorders (18 %). 3 fresh stillbirths and 3 early neonatal deaths were noted, common indication was fetal distress in second stage of labour. Cervical lacerations (15%), PPH requiring blood transfusion (13%), vaginal lacerations (10%), extension of episiotomy (5%) & perineal injuries (2%) as maternal complications were found. Neonatal jaundice was most common neonatal complication (9 %- vacuum, 15%- forceps).

We found that birth weight <2kgs was seen in 5 and 3, 2-2.5kgs in 6 and 5, 2.5-3 kgs in 12 and 20 and >3 kgs in 16 and 13 patients in group I and II respectively. APGAR at 1 minute was <3 seen in 7 and 10, 4-7 in 10 and 12 and 7-10 in 23 and 19 patients respectively. APGAR at 5 minutes was <3 in 5 and 8, 4-7 in 11 and 13 and 7-10 in 25 and 20 patients in group I and II respectively. We found that foetal complications was neonatal convulsions in 2 and 1, jaundice in 5 and 6,

scalp injuries in 2 and 3. Maternal complications was perineal injuries in 3 and 4, cervical lacerations in 1 and 2 and PPH in 5 and 3 in group I and group II respectively.

Jani et al¹² studied the foetal outcome according to the weeks of gestation in spontaneous vaginal delivery occurring between 36 completed weeks to 40 completed weeks of gestation. Total 390 cases were studied. Foetal outcome in terms of birth weight, APGAR score at 1 minute, and NICU admissions were noted and analysed according to the weeks of gestation at delivery, and entered into a database. The average birth weight increased with increase in the weeks of gestation at the time of the spontaneous delivery. The average birth weight of neonates born in 36th, 37th and 38th week was 2.314Kg, 2.623Kg and 2.704Kg, respectively. 14.28% of the babies born in the 36th week of gestation were admitted to the NICU. 4.705% and 4.347% of the babies born in the 37th and 38th week of gestation respectively, were admitted to the NICU. The Mean APGAR score of the neonates born in 36th, 37th, 38th and 39th week were 8.714, 9.235, 9.347, and 9.645, respectively. Thus, the mean APGAR score increased by the weeks of gestation at the time of the spontaneous delivery.

The limitation of the study is the small sample size.

CONCLUSION

Authors found that when used carefully by a qualified obstetrician, instrumental vaginal delivery is still a valuable procedure. It contributes to better mother and newborn outcomes as well as a decrease in the frequency of cesarean deliveries.

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