Volume : 2 | Issue : 4 | Apr 2013 • ISSN No 2277 - 8179

Research Paper

Medical Science

KEYWORDS : Outlet Forceps, Laceration

Outlet Forceps in Modern Era - Study Of 50 Cases-Clinical Observation Study

Dr. Vandana K Saini — Associate professor, Department of Obstetrics and Gynecology, Smt. N.H.L. Medical College

Dr. Kishor D Kawad — 3rd year resident, Department of Obstetrics and Gynecology, Smt. N.H.L. Medical College

Dr. Neha Gohel — 3rd year resident, Department of Obstetrics and Gynecology, Smt. N.H.L. Medical College

ABSTRACT

A clinical observational study on outlet forceps delivery using Wrigley's forceps was done on 50 patients with singleton pregnancy without gross cephalopelvic disproportion and with station >+2 in relation to ischial spine. The study was carried out as the classification guidelines in ACOG 2002. Out of the 50 cases, 76% were Primipara. In present study incidence of outlet forceps delivery was 0.73%. Fetal distress(22%), prolonged 2ndstage of labour and maternal distress(16%) were the most common indication of outlet forceps. Prophylactic forceps were used in previous LSCS(2%), severe pre-eclampsia and eclampsia(18%), Heart disease(4%), anemia(10%) and asthma(2%). Impression marks and abrasion over face of baby were present in 14% and only 4% cephalhematoma and a single baby expired due to early neonatal septicemia. 6% had perineal tear, 10% had vaginal tear, 4% had paraurethral and 8% had extended episiotomy. Maternal complications like Atonic PPH occurred in 1 case, UTI in 4 cases, 2 cases of episiotomy wound infection and single case with urinary incontinence. On skilled hand outlet forceps is instrument of great convenience in form of reducing maternal efforts and fetal morbidity and to cut short 2ndstage of labour in high risk pregnancies. The ACOG(2001) recommends forceps delivery as an acceptable and safe option for delivery.

Introduction

Successful result can be achieved more "By skill and not by force". There is no sentence truer in effective expression than this in case of obstetrics forceps. For 300 years since its discovery Forceps has faced tough times and out of all odds it has survived till today in modern obstetrics. The status of forceps in Modern Obstetrics is constantly under discussion within the specialty. Controversy is only proper in the effort for Improvements of results. The obstetrics forceps operation is used in the interest of the mother or baby and when properly performed can be a rewarding experience and also life saving.

Method

A study of 50 cases of OUTLET FORCEPS was carried out from June-2009 to May-2011 at our institution for period of around 2 year. All the cases were admitted as indoor patients in our general hospital, the present study was carried out keeping in mind the different aspects of patient such as age, parity, whether emergency or registered, duration of labour, indication, type of forceps and maternal and fetal complication. The study carried out as the classification guidelines for outlet forceps in ACOG 2002.

Exclusion criteria:

1. Gross cephalopelvic disproportion.
2. Station of head in relation to ischial spine ≤+2 with prolonged 2nd stage (≥2hr in primipara and >1hr in multigravida)

Observation

This study is done on 50 patients with full term singleton pregnancy. 28% patients were in the age group 16-20 years and 62% were between 21-30 years. Outlet forceps had no relation with age.

TABLE-1 Parity Distribution

Parity	No. of cases	Percentage(%)
Primipara	38	76
Second Para	7	14
Third Para	4	8
Multipara	1	2

Out of 50 cases, 38(76%) were primipara and 12(24%) more than one parity. In primipara rate of forceps high may be due to rigid perineum.

TABLE-2 Incidence of forceps delivery.

	No.	Incidence	ACOG 2011(1)
Total Deliveries	9760		
Total outlet forceps	73	0.7%	0.8%
Study complete	50		

In this study, 0.728% incidence noted and according to ACOG 2011 guidelines, incidence of forceps is 0.8%.

TABLE-3 Indication and Outlet Forceps

Indication	No. of cases	Percentage	Johnson et al(2)
Fetal distress	12	24%	47.1%
Prolonged 2nd stage of labour	13	26%	14%
Maternal distress	8	16%	38.5%
Previous LSCS	1	2%	-
Severe PIH	8	16%	-
Eclampsia	1	2%	-
Cardiac disease	2	4%	-
Anemia	5	10%	-
Asthma	1	2%	-

Out of 50 cases, forceps was indicated for fetal distress (22%), prolonged 2nd stage of labour (26%) and for maternal distress (16%). In pre-eclampsia and eclampsia(18%), previous LSCS(2%), cardiac disease(4%), anemia(10%) and asthma(2%). So, prophylactic outlet forceps used to cut short 2nd stage of labour.

TABLE-4 Pregnancy associated condition and forceps

Condition	No. of cases	Percentage(%)
Anemia	5	10
Heart disease	2	4
Pre-eclampsia	8	16
Eclampsia	1	2
Twins	1	2
Asthma	1	2
Preterm	1	2
Others	31	62

Volume : 2 | Issue : 4 | Apr 2013 • ISSN No 2277 - 8179

In this study of 50 cases, association of forceps with pre-eclampsia and eclampsia(18%) is attributed to highest incidence of the same with primipara.

TABLE-5 Regional Anesthesia and Forceps

Type of anesthesia	No. of cases	Percentage(%)
Spinal anesthesia	4	8
Pudendal block	5	10
Perineal infiltration	39	78
General anesthesia	2	4

In majority of cases in present study, Forceps application was done under perineal infiltration(78%) and Pudendal block(10%) although, 4(8%) cases were given spinal anesthesia and 2(4%).cases were general anesthesia.

TABLE-6 Birth injuries and outlet forceps

Birth injuries	No. of cases	Percentage(%)	
Impression marks	4	8	-
Abrasion on face	3	6	5%(Hagadan et al)(3)
Cephalhematoma	2	4	2%(Dell et al)(4)
Early neonatal death	1	2	-

Scalp and face impression marks in 8% cases, abrasion over face in 6% cases, cephalhematoma in 4% cases and early neonatal death occurred in 2% due to early onset septicemia.

TABLE-7 Maternal injuries and outlet forceps

Maternal injuries	No. of case	Percentage(%)	Yancey MK et al(5)
Perineal tear			
1st Degree	-	-	
2nd Degree	3	6	
Vaginal tear	5	10	
Multiple tear:			24%
1.Paraurethral	2	4	
2.Multiple	2	4	
Extended episiotomy	4	8	

Out of 50 cases, 6% patients suffered 2nd degree perineal tear and 10% vaginal tear. In 8% cases episiotomy incision was extended and 4% suffered paraurethral tear.

TABLE-8 Maternal complication and forceps

Complication	No. of cases	Percentage(%)
3rdstage complication		
Atonic PPH	1	2
2° PPh	-	-
Infection		
1.Episiotomy wound infection	2	4
2.UTI	4	8
Incontinence		
Urinary	1	2
Fecal	-	-

Post-partum hemorrhage was seen in 2% cases as one of the major immediate complication after maternal laceration. Episiotomy wound infection and urinary tract infection was seen in 4% and 8% cases respectively. Only one cases with urinary incontinence noted after follow up of the 3 months. Infections are not only due to forceps but may be due to poor hygiene and poor nutrition.

Discussion

The new study put into doubt the idea that forceps are more dangerous for delivering newborns than are vacuum deliveries or C-section, even though the trend has lately been away from forceps. While the total number of operative vaginal deliveries has remain steady over the past 10 years, number of forceps deliveries has declined by 53%. In 1998, only 2.6% of deliveries in the united states were performed using forceps(6). A number of factor account for this decline. First, the use of forceps was long believed to have a deleterious effect on the cognitive development of the infant. However, the contention that infants delivered by forceps have lower IQ scores has been effectively refuted(7,8,9). While the association between forceps delivery and fetal injury is more difficulty to contest, Towner and colleagues recently found the incidence of neonatal intracranial hemorrhage after forceps delivery to be similar if not less to that for cesarean delivery following labor(10). Similarly, Hankins et al demonstrated that even the more challenging operative vaginal delivery procedures, such as forceps deliveries involving more than 90 degrees of rotation, can be safely performed without undue morbidity to the mother or fetus(11). The recent study at Johns Hopkins School of Medicine, researched 400,000 births to first time mother. The seizure rate among newborns was 45% lower among forceps deliveries babies(0.12%) than those delivered from C-section or vacuum(0.3%). However, the rate of brain hemorrhage have lower among C-section babies(0.1%) than for those born of forceps(0.14%) and vacuum(0.19%). Also, risks like vaginal tearing are lower for C-section than for forceps or vacuum births. On the other hand, seizures generally cause longer-lasting damage to the child than do hemorrhage, and the overall chance of seizure is much higher with C-section or vacuum. This information question the trend that obstetrics has been taking away from forceps.. One study found that major hemorrhage and prolonged hospital stay were more likely in woman who has cesarean section in second stage of labor compared with instrumental delivery(12). A recent study found a delay in subsequent conception among women who had cesarean section compared with women who delivered vaginally(13). In 1990, forceps were used in 5% of deliveries. By 2007, that figure had steadily declined to less than 1%. By 2007, C-sections also want up to a third of all deliveries, from 21% ten years earlier. The research team believes this trend may be because medical schools have focused less and less on forceps, but it is not clear why that should be the case, especially without any evidence pointing to the danger of forceps. This all, of course, makes consulting with one's doctor about a contingent method of delivery something of an uninformed discussion. Outlet forceps procedure with Medio-lateral episiotomy has been demonstrated to give Fetal and Maternal results the equal if not exceed those of spontaneous vertex delivery(14).

Conclusion

Outlet forceps has very significant place in obstetrics as it is a lifesaving procedure for the mother and fetus in many situations. On skilled hand outlet forceps is instrument of great convenience in form of reducing maternal efforts and fetal morbidity and to cut short second stage of labour in high risk pregnancies like heart disease, asthma, previous cesarean and anemia. The prophylactic use of outlet forceps delivery had been propose as a safe alternative to cut short the second stage of labour. Sound clinical examination and adherence to the ground rule will minimize the risk of the failure and the complication. Over the years, the use of forceps to facilitate delivery has been advocated in order to avoid abdominal delivery, even though the rate of cesarean delivery has increased, that of instrumental vaginal delivery has fallen over the past decade. The American college of obstetrics and gynecology (2001) recommends forceps delivery as an acceptable and safe option for delivery. It has also recommended training in instrumental delivery to control and reduce the rate of cesarean section. Outlet forceps play appropriate tools in the armamentarium of the modern obstetrics. So in modern obstetrics outlet forceps is having definitive role.

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