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Original Investigation

Outlet Forceps in Modern Era, a Dangerous Instrument or an Art of Obstetrics?

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Abstract
Aim of this study was to assess feto maternal outcome in outlet forceps delivery. 69 patients in the Labour room who delivered by outlet forceps at Dept. of Obs. and Gyn. Medical college, Baroda, India were analyzed for Feto maternal outcome. Incidence of Wrigley's outlet forceps delivery is 0.74% in our study. 78.26% were applied for primipara, as may be due to rigid perineum in primipara. 71 % in the age group of 16-25 years, common age of primipara. Age and obstetric outcome it is observed that operative interference is required frequently. Indications of forceps were also comparable with common indications with others. 68.12% baby with normal APGAR scoring. While 2.90% develop Severe Birth Asphyxia and 11.59% required Nursery admission while 15.94% required resuscitation at the time of birth, these shows that with forceps delivery the outcome is comparable to the vaginal delivery. Impression marks over face, abrasion over face are also comparable. Only one neonatal death occurred that was due to Neonatal septicaemia and 4.35% develop cephalhematoma which is slightly higher. The vaginal and cervical tear rates are also comparable. Only Two Patients develop PPH, one (1.45%) traumatic, while other (1.45%) develop Atonic PPH which are comparable to normal vaginal delivery and even after Caesarean section delivery. Only 1.45% patients develop urinary incontinence. Study performed using Wrigley's outlet forceps application using ACOG guidelines, 2002/2011. We conclude that maternal and foetal outcome are comparable good with the vaginal delivery. Indicated forceps delivery can reduce the caesarean section rate. No major maternal or foetal morbidity / mortality found due to forceps in study group. We feel that the entire young obstetrician colleague must know the applications of forceps and should implement in practice to decrease the caesarean section rates. Even nowadays Government of India in BEmoc training for Medical Officer (MBBS) in service included the forceps and vaccume delivery in the training course so as to teach them the skill. So that they can help the Nation in lower down the Maternal Mortality Rate. So, we can say that the forceps application with all criteria's fulfilled in a expert hand is an Art of Obstetrics and not a dangerous Instruments.

Keywords: outlet forceps, foetal complications, maternal complications

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Introduction

The status of forceps is constantly under discussion with in the speciality, and with paediatrics colleague, controversy is always there and the effort for the improvement in the results. In old Sanskrit it is k/a Golden instrument, but real art of forceps was born by Peter chamberlain in 1600 A.D. Even after 300 years it survived till today in modern Obstetrics. The forceps have improved the maternal and foetal salvage, of course with proper selection of patients, forceps, and their applications [1]. The Obstetric Outlet Forceps applications is used in the interest of the mother and/or baby and when properly performed can be rewarding experience and also life savings [2, 3]. There are varieties of forceps available, but high forceps, mid cavity, and rotational forceps has a no role in modern obstetrics [4]. Now a days only outlet forceps should be used even, we found that rate of forceps delivery is declining with a fear of maternal trauma and/or foetal injuries, and a long term sequele of the foetal growth and development, which requires a large long term prospective study to determine the foetal growth and development [4]. Outlets forceps with medio lateral episiotomy has been demonstrated to give foetal and maternal results the equal if not exceed those of spontaneous vertex deliveries [1,5]**.**

Method

The study was conducted at Department of Obstetrics and Gynaecology Medical College, Baroda, Gujarat, from June 2009 to May 2011. All the cases were admitted as indoor patients in our hospital, present study was carried out with different aims and aspects like age, parity of patients, indications and type of forceps, maternal and foetal complications. This was a Clinical observational type of study with consent from patients. *Wrigley's outlet forceps application done using ACOG guideline-2002* [4]. *Exclusion criteria are: gross CPD, S*tation of head in relation to Ischial spine <+ 2, not well rotated. All cases studied keeping the above different aspects in mind.

Table 1. Incidence of forceps delivery

		Incidence	**ACOG[4]2011**
Total Nos. of Deliveries	9255		
Total outlet forceps delivery	69	0.74%	0.8%

Table 2. Distribution of patients according to age and parity

Parity Distribution			**Age Distribution**		
	Numbers	Percentage	Age in years	No. of forceps delivery	Percentage
Primi Para	54	78.26%	16-20	20	28.99 %
Second Para	9	13.04 %	21-25	29	42.02 %
Third Para	5	7.25 %	26-30	14	20.29 %
Multi Para	1	1.45 %	>30	06	8.70 %

Table 3. Distribution of patients according to indications

Indications	**No. of forceps delivery**	**Percentage**	**Johnson et al** [3]
Foetal Distress	21	30.43 %	47.1 %
Prolonged 2nd stage of labour	11	15.94 %	14.0 %
Maternal distress	09	13.04 %	38.5 %
Previous LSCS	03	4.34 %	
Severe PIH	08	11.59 %	
Ecclampsia	02	2.90 %	
Cardiac Disease	02	2.90 %	
Anaemia	12	17.39 %	
Asthma	01	1.45 %	

Table 4. APGAR scoring and NICU admission

APGAR scoring			**NICU admission**		
APGAR score at 1 minute	No of cases	Percentage	Neonatal	No. of cases	Percentage
7-10	47	68.12 %	Neonatal admission	08	11.59 %
4-6	20	28.98 %	Neonatal resuscitation	11	15.94 %
0-3	02	02.90 %			

Table 5. Maternal injuries and complications.

Maternal injuries				**Maternal complications**		
Perineal Tear 1st Degree	2	2.90%		complications	No of cases	Percentage
2nd Degree	3	4.35%		Third Stage complications	01	1.45 %
Vaginal Tear	5	7.25%		Atonic PPH	0	-----
				Secondary PPH	01	1.45 %
				Traumatic PPH		
Multiple Tear	2	2.90%	24% Yancey.[5]	Infections		
				Episiotomy infection	03	4.35 %
				UTI	04	5.80 %
Para urethral	2	2.90%		Incontinence		
Extended Episiotomy	4	5.80%		Urinary	1	1.45 %
				Fecal	0	

Table 6. Birth injuries

Birth injuries	**No of cases**	**Percentage**	
Impression marks	6	8.69 %	
Abrasion on face	4	5.80 %	5% Hagadan et al
Cephal hematoma	3	4.35 %	2% Dell et al
Early Neonatal Death	1	1.45 %	

Results

We had analysed 69 patients who delivered by Wrigley's outlet forceps application using ACOG guidelines-2002 [4]. During the study period the total Nos. of deliveries were 9255 and the forceps incidence was 0.74% which is quite comparable to the ACOG 2011 guidelines-2011 ,is 0.8% .[4].

The majority 78.26% (54) forceps were applied for the primipara, while 13.04% (9) for second Para. As may be due to rigid perineum in primipara, and the 71% (49) were applied in the age group of 16-25 years which is the common age of majority of primipara. Significance of age and obstetrics outcome it is observed that operative interference is required frequently. Out of 69 cases 30.43 % were for foetal distress, 15.94% were for prolonged 2^{nd} stage of labour 13.04% were for maternal distress, 4.34 %, previous LSCS, 11.59 %, severe PIH, 17.39% for anaemia were the common indications of forceps, while 2.90 % for ecclampsia, 4.34 % were done for the medical disorders i.e. Cardiac Disease and Asthma. Prophylactic forceps were used in Prev. CS, S.PIH, Ecclampsia, Heart disease, Anaemia are the commonest recommended indications [3, 4]. Also in our study 68,12% with normal APGAR scoring of 7-10 while only 2.90% (2) had only Severe Birth Asphyxia and only 11.59%(8) required neonatal nursery admission, while 15.94% (11) required resuscitation at time of birth , these shows that forceps delivery the outcome is comparable to the vaginal delivery [5]. 8.69% (6) had a impression marks over face, while 5.80 % (4) had abrasion over face which is comparable to 5% in a study in which only one neonatal death occurred due to Neonatal septicaemia and 4.35% (3) develop cephal hematoma which is slightly higher than study of Dell et al, showed 2% only [6]. 7.25% (5) developed $1^{st}/2^{nd}$ degree perineal tear, 7.25% (5) developed vaginal tear, 2.90% (2) developed multiple tear which is very much less than the study of Yancey, showed 24%. Only 5.80% (4) developed extension of episiotomy, while 4.35% (3) develop episiotomy wound infections, which is even seen in normal vaginal delivery with same rate. Two Patients developed PPH, one (1.45%) traumatic, while other (1.45%) developed Atonic PPH which is comparable to normal vaginal delivery and even after Caesarean section delivery [5]. One patient (1.45%) developed urinary incontinence. Thus purpose of using the outlet forceps is to protect the baby and help the mother to cut short the second stage of labour [1,3].

Conclusion

We can conclude that Obstetrics forceps has a significant place in Obstetrics. As it is lifesaving procedure for mother and foetus in many situations. In skilled hand it is very safe and important to cut short of 2nd stage of labour or even prophylactic use also. Successful result can be achieved more only "By skill and not by force "

Sound clinical evaluation and adherence to the ground rule and a skill of operator will minimize the risk of failure and complications. Using outlet forceps the overall rates of maternal and perinatal morbidity and mortality are negligible and even comparable to spontaneous vaginal delivery.

Over the years Caesarean delivery rate has increased while instrumental delivery rate has fallen dramatically over past decade, ACOG-2011 recommends forceps delivery as an acceptable and safe option for Delivery. Outlet forceps plays an very important role in obstetrics practice and remain appropriate tools in the armamentarium of the modern obstetrics, so in modern obstetrics outlet forceps is having a definitive role.

All the young obstetricians must have a knowledge and confidence in applying the instrumental vaginal deliveries. Even nowadays Government of India in BEmoc training for Medical Officer in service (MBBS) included the forceps and vacuum delivery in the syllabus to teach them. So, they can help the Nation in decreasing in the Maternal Mortality Rate.

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