

# Forceps delivery at the University College Hospital, Ibadan, Nigeria

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## Summary

The incidence of forceps delivery has reduced in Nigeria and in the world in general. Some Obstetricians have not been trained in its use and lack the skill.

## Objective

To determine the outcome of forceps delivery at this centre.

## Methodology

A retrospective analysis of all forceps delivery done at this centre between the 1st of January 1997 and 31st December 2001, a 5-year period was done.

## Results

The incidence of forceps delivery was 1.57% or 16 per 1000 births and they were all low cavity deliveries. Most of the patients (68.5%) were booked at this centre. The mean age was 28.21 +/- 4.79 years and most (64.4%) were nulliparous. The mean gestational age at delivery was 38.7 +/- 3.0 weeks.

The most common indications were prolonged second stage of labour (58.9%), maternal distress (43.8%) and fetal distress (15.1%). There were multiple indications in some patients. The mean birth weight was 3.03 +/- 0.69kgs and 90.4% were live births. The main maternal complications were maternal injuries (8.1%), primary post partum haemorrhage (5.5%), anaemia (5.5%) and retained products of conception (4.1%). Maternal deaths occurred in 2 eclampsics and birth asphyxia in 6.9% of babies. The perinatal mortality rate was 54.8 per 1000 births. There were no fetal injuries.

## Conclusion

Obstetrics forceps delivery is on the decline in Nigeria. It is an art that can safely and quickly deliver the fetus. It could be offered in the place of a caesarean section in some instances with a good outcome to both the mother and fetus in skilled hands. Obstetricians should be trained to use it more frequently.

**Keywords:** Forceps, Delivery, Ibadan, Nigeria

## Résumé

Les cas de l'utilisation de forceps l'ors de l'accouchement est en baisse au Nigeria et partout dans le monde en général. Certains médecins accoucheurs ne sont pas bien formé en matière de son utilisation et ils manquent la connaissance requise.

## Objectif

Déterminer le résultat de l'utilisation de forceps l'ors de l'accouchement dans ce centre.

## Méthodologie

Une analyse retrospective de tous les cas de l'utilisation de forceps l'ors des accouchements effectuées dans ce centre entre le premier janvier 1997 et le 31 decembre 2001, une durée de 5 ans a été effectuée.

## Résultats

Les cas de l'utilisation de forceps l'ors de l'accouchement étaient 1,57% ou 16 par 1,000 naissances et ils étaient tous accouchement de la cavité basse. La plupart des patients soit 68,5% ont inscrit dans ce centre. L'âge moyen était 28,21 ± 4,79 ans et la plupart soit 64,4% étaient nulliparous.

L'âge gestationnel moyen au cours de l'accouchement était 38,7± 43,0 semaines. Des indices les plus fréquents étaient le deuxième étage de l'accouchement prolongé 58,9%, douleur maternelle 43,8% et douleur foetale 15,1%. Il y avait des signes multiples chez quelques patients. Le poids de naissance moyen

était 3,03± 0,69Kgs et 90,4% étaient nés vivant. Des complications maternelles majeures étaient: blessures 8,1%, l'hémorragie postpartum primaire 5,5% anémie 5,5% et des produits conservés de la conception 4,1%. Décès maternels ont eu lieu dans 2 éclampsies et naissance asphyxie en 6,9% des bébés. Le taux de la mortalité périnatale était 54,8 par 1000 naissances. Il n'y avait aucun cas de la blessure foetale.

## Conclusion

L'utilisation de forceps l'ors de l'accouchement est en baisse au Nigeria. C'est une méthode à travers laquelle on peut facilement et rapidement accoucher une femme. On pourrait utiliser cette méthode au lieu de la césarienne dans bien des cas avec un bon résultat en matière de la mère et du fœtus, les deux chez un spécialiste.

On doit former des obstétriciens afin de utiliser cette méthode plus fréquemment.

## Introduction

Operative vaginal delivery using the obstetrics forceps has been an important part of obstetric practice for nearly 400 years<sup>1</sup> and its history constitutes one of the richest aspects of our specialty's heritage.<sup>2</sup> A pair of forceps is an instrument designed primarily for the delivery of the baby's head either to expedite delivery or to correct certain abnormalities in the cephalopelvic relationship that will impede further progress in labour such as asynclitism.<sup>3</sup>

Many different forceps have been described and developed throughout time since the original instruments fashioned by the Chamberlain family came to public knowledge. There are over 700 different makes of forceps<sup>1</sup>, but only a few are in clinical use today.

Forceps delivery has reduced in Nigeria<sup>4</sup> and the world in general<sup>2</sup> since the introduction of the vacuum extractor (ventouse) and obstetricians opting for caesarean sections. Applied by those skilled in their use, it can safely and quickly deliver the fetus.<sup>2</sup> Unfortunately, it can also be an instrument of harm for the woman or her infant.

The incidence of forceps delivery varies from centre to centre due to variations in facilities, philosophies or practice and the rate of complications in pregnancy or labour.<sup>4</sup> Although there is a paucity of information on forceps delivery in Nigeria, the rate is low,<sup>4</sup> varying between 0.9% in Enugu<sup>5</sup> and 6.0% as previously recorded in this centre.<sup>6</sup> In developed countries, it ranges between 1.1-32.6%.<sup>4,7</sup> The low rates have been attributed to the high incidence of caesarean section for cephalopelvic disproportion.<sup>4</sup> The objective of this study was to determine the outcome of forceps delivery at our centre. The last published work on its use from this centre was about a quarter of a century ago.<sup>6</sup>

## Materials and Methods

The maternity records of patients who had forceps delivery at the University College Hospital, Ibadan between the 1st of January 1997 and the 31st December 2001, a 5-year period were collected and reviewed.

During the period, there were 4,964 deliveries in this hospital and forceps deliveries were performed for 78 patients for various obstetric indications. All the deliveries were low-cavity deliveries. Out of these adequate records for analysis were obtained from 73 patients (93.6%). The others could either not be traced or had insufficient information.

The data were fed into the computer and analyzed using the EPI INFO software.

**Results**

During the 5-year period, there were 4,964 deliveries in this centre and 78 patients were delivered with the aid of the obstetric forceps, which were all low-cavity deliveries. This gave an incidence of 1.57% or 16 per 1000 births. Of these 78 cases, adequate analysis was obtained in 73 patients (93.6%). The others could either not be traced or had insufficient information.

The pattern of forceps deliveries (Table 1) showed an increase from 1997 to 1998 and then a drop till 2000 with a rise again in the year 2001.

**Table 1 Trends in the incidence of forceps delivery at U. C. H, Ibadan (1997 - 2001)**

Year	1997	1998	1999	2000	2001
Total deliveries	966	881	920	1066	1131
Forceps deliveries	17	19	12	12	18
% Forceps deliveries	1.8	2.2	1.3	1.1	1.6

**Table 2 Booking status, age and parity of 73 patients that had forceps delivery**

	Number	Percentage
<b>Booking status</b>		
Booked	50	68.5
Unbooked	23	31.5
<b>Age (Years)</b>		
<OR = 20	6	8.2
21 - 25	14	19.2
26 - 30	29	39.7
31 - 35	20	27.4
> 35	4	5.5
<b>Parity</b>		
0	47	64.4
1 - 2	23	31.5
3 - 4	2	2.7
> 5	1	1.4

Most of the deliveries (93.2%) were carried out by resident doctors (senior registrars performed 83.6%). Consultants did the rest (6.8%).

Majority of the patients (68.5%) were booked for antenatal care at this centre (Table 2).

**Maternal age and parity distribution (Table 2)**

The ages of the patients ranged between 16 and 39 years with a mean of 28.21 +/- 4.79 years. Sixty-three patients (86.3%) were aged between 21 and 35 years.

The parity of the patients prior to delivery ranged between 0 and 6 with a mean of 0.5. Forty-seven (64.4%) patients were nulliparous and only 1 (1.4%) was grandmultiparous.

**Mean gestational age at booking and delivery**

The gestational age at booking for those booked at this centre ranged between 8 and 35 weeks with a mean of 18.0 ± 6.4 weeks, while the gestational age at delivery for the patients ranged between 30 and 42 weeks with a mean of 38.7 ± 3.0 weeks. Majority of the patients, 49(67.1%), delivered between 37 and 40 weeks.

**Indication for forceps delivery (Table 3)**

Some patients had multiple indications. Prolonged second stage of labour was the most common indication and it occurred in 43 (58.9%) patients. Maternal distress occurred in 32 (43.8%) patients and fetal distress in 11 (15.1%). Other indications were hypertension / pre-eclampsia, eclampsia, prematurity and to shorten the second stage in patients with underlying medical diseases.

**Fetal outcome**

Sixty-six (90.4%) of the babies were born alive. The rest were

**Table 3 Indications for forceps delivery**

Indications	Number (N = 73)	Percentage
Prolonged second Stage of labour	43	58.9
Maternal distress	32	43.8
Fetal distress	11	15.1
Eclampsia	10	13.7
To shorten the second stage of labour	10	13.7
Hypertension/Pre-eclampsia	3	4.1
Prematurity	2	2.7

\*Some patients had multiple indications.

**Table 4 Maternal and fetal complications of forceps delivery**

Complications	Number (N = 73)	Percentage
<b>Maternal</b>		
Primary post partum haemorrhage	4	5.5
Anaemia	4	5.5
Retained products of conception	3	4.1
Vaginal lacerations	2	2.7
Cervical lacerations	2	2.7
Third degree perineal tear	2	2.7
Broken down episiotomy	2	2.7
D. I. C.	2	2.7
Puerperal sepsis	2	2.7
Maternal mortality	2	2.7
<b>Fetal</b>		
Still birth	7	9.6
Birth asphyxia	5	6.9
Perinatal death	4	5.5

stillbirths. Birth asphyxia occurred in 5 babies (6.9%) and perinatal deaths in 4 giving a perinatal mortality rate of 54.8 per 1000. The mean Apgar score at 1 minute was 7.0 ± 1.4 and at 5 minutes 9.3 ± 1.6.

The fetal birth weights ranged between 1.1 and 4.7kgs with a mean of 3.03 ± 0.69kgs. Most of the babies, 54(74%) weighed between 2500 and 3999grams.

**Maternal complications**

Maternal injuries, primary postpartum haemorrhage, anaemia and retained products of conception were the most common maternal complications (Table 4). Other complications are as shown.

Maternal deaths occurred in 2 patients. They were both unbooked primigravid women that presented with eclampsia in labour. The first was a 20 year old with triplet gestation. She had forceps delivery of the second triplet, a live male infant weighing 1.55kg. The second patient was a 25 year old woman who had delivery of a fresh stillbirth male infant weighing 3.2kg. She developed disseminated intravascular coagulopathy.

Blood loss at delivery ranged between 80mls and 1.5 litres with a mean of 302.56 ± 299.59mls.

**Discussion**

The last published study on forceps delivery from our centre was in 1978<sup>6</sup> (25 years ago). We thus decided to review the current practice.

The incidence of forceps deliveries varies from centre to centre and this has reduced globally as a result of the vacuum extractor (ventouse) being considered to be easier and less traumatic.<sup>8</sup> Also some Obstetricians would rather opt for a caesarean delivery which could be avoided in some cases. These have led to less Obstetrician being trained in the use of forceps and a lack of skill.

We found a low incidence of 1.57% or 16 per 1000 births during our study period. This is much lower than 6% previously recorded here<sup>6</sup> and 21 per 1000 births in Ilesa, Nigeria,<sup>4</sup> but higher than 0.9% recorded in Enugu, Nigeria.<sup>5</sup> In the developed countries the incidence ranges between 1.1-32.6%.<sup>7</sup> With the current low incidence of forceps deliveries recorded here and in other centers,

forceps delivery has been described as "vanishing"<sup>9</sup> or a "dying art".<sup>10</sup>

The average age of our patients was 28.21 years, which is slightly higher than 24.5 years in Dakar, Senegal.<sup>11</sup>

Most of our patients were nulliparous (64.4%). This was higher than previously reported in this centre (60%),<sup>6</sup> Ilesa (45.4%)<sup>4</sup> and in Dakar.<sup>11</sup> This is also the picture in developing countries where nulliparity accounts for 62 - 90% of cases.<sup>7</sup>

The most common indication for forceps delivery in this study was prolonged second stage of labour (58.9%). This is not surprising as most of our patients as earlier mentioned were nulliparous and these women are likely to need assistance in the second stage as a result of their untested pelvis. This was also the most common indication in Ilesa (58.7%)<sup>4</sup> and Dakar (47.1%).<sup>11</sup> In this centre preeclampsia was previously the most common indication (37%),<sup>6</sup> but it is now sixth. It accounted for only 4.1% of deliveries.

Maternal distress was the second most common indication (43.8%) and this is due to maternal exhaustion in the first stage of labour. Fetal distress, which is the most common indication in Poland,<sup>12</sup> was the third most common indication in our centre (15.1%).

Only low cavity forceps deliveries were performed at our centre and there are more maternal and fetal complications associated with high and mild cavity forceps.<sup>4</sup> These types of deliveries are rare in modern obstetric practice.

The morbidity and mortality with forceps deliveries will be low if they are used only when indicated, pre-requisites are fulfilled and the instruments applied properly.<sup>6,13</sup> The most common maternal complications were maternal injuries (8.1%), post partum haemorrhage (5.5%), anaemia (5.5%) and retained products of conception (4.1%), while the most common fetal complication was still births (9.6%). The incidence of maternal injuries is slightly higher than 7.1% previously recorded in this centre.<sup>6</sup> There were no recorded fetal injuries. This previously occurred in 7.8% of babies in this centre<sup>6</sup> and 12.7% in Ilesa.<sup>4</sup>

Our perinatal mortality was 54.8% per 1000 births and it's lower than 66.4 per 1000 births recorded in Ilesa<sup>4</sup> and higher than 50 per 1000 births previously recorded here.<sup>6</sup>

Maternal deaths occurred in 2.7% of the patients in this study. This is higher than no maternal death that was previously reported here<sup>6</sup> and 0.37% in Ilesa.<sup>4</sup> These deaths followed eclampsia.

## Conclusion

Obstetric forceps delivery is on the decline in Nigeria. It is an art that can safely and quickly deliver the fetus. It could be offered in the place of a caesarean section in some instances with a good outcome to both mother and fetus in skilled hands. It has been an

important part of obstetric practice for nearly 400 years and should not be forgotten.

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