www.jmscr.igmpublication.org **Impact Factor-1.1147**

ISSN (e)-2347-176x

IGM Publication Journal Of Medical Science And Clinical Research An Official Publication Of IGM Publication

The Prevalence and Outcome of Singleton Breech Delivery in Abakaliki South-East Nigeria

Authors

Obuna JA[1], Ugboma HA[2], Agwu UM[3], Ejikeme BN[4]

[1]Department of Obstetrics and Gynaecology, Ebonyi State University Teaching Hospital, Abakaliki and Visiting Consultant, Mile Four hospital, Abakaliki.

[2]Department of Obstetrics and Gynaecology, University of PortHarcourt Teaching Hospital

[3,4]Department of Obstetrics and Gynaecology, Ebonyi State University Teaching hospital, Abakaliki.

Correspondence Author

Dr J.A.Obuna

Department of Obstetrics and Gynaecology

Ebonyi State University Teaching Hospital, Abakaliki and Visiting Consultant, Mile Four hospital Abakaliki

E-mail: Obuna2003@yahoo.com

Abstract

Background: Breech delivery is associated with maternal morbidity and perinatal morbidity and mortalit y especially in unplanned vaginal route. It is therefore very pertinent to carefully choose the route of delivery during antenatal care or early labour. This is even more important in our environment where there is strong aversion to caesarean section.

Objective: To determine the incidence and outcome of singleton breech delivery among parturients who delivered at Mile Four Hospital, Abakaliki.

Methods: A- 5 year retrospective study of the clinical records and delivery registers of all parturients who delivered at Mile Four Hospital, Abakaliki between January 1, 2007 and December 31, 2011.

Results: The incidence of singleton breech delivery was 4.45%. 60.8% of parturients had assisted

vaginal delivery, 51.7% of which were primigravidae. 74.5% of neonates who weighed less than 2.5kg were delivered via vaginal route, while all neonates who weighed more than 4.5kg were delivered per abdomen. Maternal mortality ratio was 529.1/100,000 births. All the women that died were unbooked. The perinatal mortality rate was 8.5/1000 births. Two percent, 7.2% and 16.8% of neonates suffered severe, mild and moderate birth asphyxia respectively. All the neonates who died or suffered severe birth asphyxia were delivered via vaginal route. Complications observed were cervical tear (0.9%), perinear tear (9.7%) and primary postpartum haemorrhage (1.6%).

Conclusion: The incidence of singleton breech delivery in this study falls within the widely reported range of 3-4%. More parturients had assisted vaginal delivery. The proportion of primigravidae who had assisted vaginal breech delivery was quite high. Breech delivery in the unbooked was associated with higher maternal/perinatal morbidity and mortality.

Key Words: Breech delivery, incidence, outcome, Mile Four Hospital

Introduction

Varied incidence of singleton breech delivery has been reported depending on the population of study and criteria for choosing mode of delivery. The incidence range of 1.4% to 4.0% have been reported[1-7]

Many factors have been adduced to explain why some fetuses choose to present and be delivered breech. Some studies associated high incidence of breech delivery with some type of maternal epilepsy with generalized cerebral seizures rather than focal involvement[8]. Some suggest that it requires intelligence for a fetus to present cephalic, hence, congenitally abnormal fetuses are more likely to present breech[3]. However, mechanical factors such as congenitally abnormal uterus and uterine/pelvic masses and polyhydramnious are known to contribute to abnormal presentation. Macrosomic fetuses and lax uterus/ abdominal wall muscles as seen in grandmultiparae are also known predisposing factors[2,3].

Breech delivery irrespective of the route is associated with maternal morbidity and perinatal morbidity and mortality. The morbidity and mortality are generally reported higher with vaginal route especially when it is unplanned[3,9]. It is therefore very pertinent to carefully choose and plan the route of delivery during antenatal care or early labour. This is even more important in our environment where there is strong aversion to caesarean section and many parturients would prefer vaginal breech delivery[10].

Because of the attendant morbidity/mortality associated with breech delivery, several

procedures/techniques have been devised to reduce the incidence of breech at delivery including the external cephalic version (ECV) and knee-chest position[3,11-14]. However, the efficacy of some of these techniques has been questioned[11].

Though term breech trial study supports elective caesarean section for singleton term breech presentation[9], in our environment where there is strong aversion to caesarean section0[10] and where significant proportion of our pregnant mothers still do not receive antenatal care and even many of those who received antenatal care prefer to deliver under the care of unskilled birth attendants and only present to health facilities when there is problem, it becomes difficult to detect pregnant mothers with persistent breech presenting fetuses and offer them either corrective measures or properly selected mode of delivery. Some times when they are offered elective caesarean section they disappear only to appear in labour with complications[10]. This makes application of recommendations by term breech trial study difficult in our environment. Therefore, assisted vaginal breech remains relevant in our environment despite term breech trial[15].

For the above reasons, we decided to evaluate the prevalence of breech delivery as well as audit the feto-maternal outcome vis-à-vis the route of delivery.

Mile Four Maternity Hospital was chosen for this work because it has the highest delivery rate in the state and serves not only the high class but also the low and middle classes. Moreso, no such work has been carried out in our environment.

Aim/objective

To determine the incidence as well as the feto-maternal outcome of various modes of delivery of singleton breech- presenting fetuses in a society with strong aversion to caesarean section and poor health seeking behavior.

Methodology

Background

This study was carried out at Mile Four hospital. Mile Four Hospital was established in 1946 as a leprosy center with maternal and child health unit primarily to cater for pregnant leprosy patients and their children.

It has expanded since then to a big hospital for maternal and child health while still maintaining separate sections for leprosy and Tuberculosis.

The maternity section has 53 beds in the Antenatal ward, 54 beds in the postnatal ward, six beds in the first stage room, eight beds in second stage room and 13 beds in private/semi-private rooms. An average of 2,550 deliveries are conducted annually. It has the highest delivery rate among all the health facilities in Ebonyi State.

It has three consultant Obstetricians, three specialist Senior registrars, four registrars, five medical officers, one chief medical officer, three Corper doctors and numerous experienced nurses/midwives.

Methods

A- five year retrospective study of clinical records and delivery registers of all parturients that

delivered in Mile four hospital, Abakaliki between January 1, 2007 – December 31, 2011. Parturients who had breech delivery at gestational age below 28 weeks and all cases of multiple gestations with any of the neonates delivered breech as well as cases of congenitally abnormal neonates delivered breech were excluded from the study. Data on the socio-demographic characteristics of parturients, booking status, parity, total number of deliveries as well as the mode of delivery were collected. Also data on the gestational age at delivery, weight of the neonates and feto-maternal outcome (including Apgar scores of neonates) were obtained and analyzed.

Results

The total number of delivery during the study period was 12,743 while 567 had singleton breech delivery at 28 weeks gestation and above giving an incidence of 4.5%. The mean age of the women was 29±3 (2SD). 98.1% of the parturients were booked. The socio-demographic characteristics of the parturients are shown in table 1.

Table 1: Socio-Demographic Characteristics Of Parturients Who Had Singleton Breech Delivery N=567

Parameters	**Number(N)**	**Percentage(%)**
Age(years)		
<16	1	0.2
16-20	45	7.9
21-25	151	26.6
26-30	211	37.2
31-35	85	15.0
36-40	71	12.5
41-45	3	0.6
Total	**567**	**100**
Parity		
0	178	31.4
1-4	270	47.6
≥5	119	21.0
Total	**567**	**100.0**

Booking Status		
Booked	556	98.1
Unbooked	11	1.9
Total	**567**	**100**

60.8% of parturients had assisted vaginal delivery, 16.2% were primigravidae while 29.8% and 14.8% were multiparae and grandmultiparae respectively. A total of 92(51.7%) out of 178 primigravidae had assisted vaginal delivery. The higher the parity the lower the rate of abdominal delivery, table 2.

Table 3 shows the relationship between the gestational age and the route of delivery. 89.3% of women whose gestational ages were above 28 weeks but below 34 weeks had were delivered vaginally. The higher the gestational age the higher the caesarean section rate up till 40 weeks gestation.

There were three maternal deaths giving a maternal mortality ratio of 529.1/100,000 births. All the women that died were unbooked. Two of them were delivered by caesarean section. The perinatal mortality rate was 8.5/1000 births and 81.8% of the perinatal death was a product of assisted vaginal delivery. Two percent, 7.2% and 16.8% of neonates suffered severe, mild and moderate birth asphyxia respectively. All the neonates who suffered severe birth asphyxia were delivered via vaginal route, table 4.

Table 5 shows the relationship of neonatal weight and route of delivery. 74.5% of neonates who weighed less than 2.5kg were delivered via vaginal route, while all neonates who weighed more than 4.5kg were delivered per abdomen. The higher the weight of baby after 3.5kg the higher the likelihood of delivery by abdominal route.

Out of the 567 neonates who had breech delivery, 311(54.9%) were female. More female neonates (40.8%) were delivered per abdomen compared to 37.1% of the male counterpart who were delivered by caesarean section, table 6.

Other complications noted in this study were cervical tear (0.9%), perinear tear (9.7%) and primary postpartum haemorrhage (1.6%).

‘

Table 2: The Relationship Between Parity And Mode Of Delivery

N=567

Parity	Number	mode of delivery			
		Abdominal delivery		Vaginal delivery	
		N	%	N	%
0	178	86	48.3	92	51.7
1-4	270	101	37.4	169	62.6
≥5	119	35	29.4	84	70.6
Total	567	222		345	

Table 3:The Relationship Between Gestational Age(Ga) And Mode Of Delivery

N=567

GA(weeks)	Number(N)	Mode of delivery			
		Abdominal		Vaginal	
		N	%	N	%

<34	56	6	10.7
50 89.3			
34-36	90	35	38.9
55 61.1			
37-40	366	160	43.7
206 56.3			
>40	55	21	38.2
34 61.8			
Total	**567**	**222**	**345**

Table 4: The Relationship Between Modes Of Delivery And Neonatal Apgar Scores At Five Minutes

N=567

Ist minute A/S	Number (N)	Modes of delivery		
		Abdominal		Vaginal
		N	%	N %
0	110	20	18.2	90 81.8
<3	9	0	0	9 100
3-5	33	14	42.4	19 57.6
6-7	77	45	58.4	32

41.6				
8-10	338	143	42.3	195
57.7				
Total	567	222		345

Key: Ist minute A/S= Apgar Scores at first minute

Table 5: The Relationship Between Neonatal Weight (Kg) And Route Of Delivery

N=567

NNW(kg)	Number(N)	Route of delivery			
		Abdominal		Vaginal	
		N	%	N	%
<2.5	149	38	25.5	111	74.5
>2.51-3.0	152	60	39.5	92	60.5
>3.0-3.5	160	62	38.8	98	61.2
>3.5-4.0	87	48	55.1	39	44.9
>4.0-4.5	17	12	70.6	5	29.4
>4.5	2	2	100.0	0	0
Total	567	222		345	

Key: NNW= Neonatal weight

Table 6: The Relationship Between The Sex Of Baby And Route Of Delivery

N=567

Sex of baby	Number(N)	Mode of delivery			
		Abdominal		Vaginal	
		N	%	N	%
Male	256	95	37.1	161	62.9
Female	311	127	40.8	184	59.2
Total	567	222		345	

DISCUSSION

The breech delivery rate of 4.5% obtained in this study though slightly on a high side still falls within the widely reported range of 2.5%-4.0%[1-3,15]. The slightly higher rate in this study may be attributed to the difference in population study. While most studies restricted themselves to term breech delivery, this study included breech delivery at gestational ages below 37 weeks but above 28 weeks.

Studies have shown that there are higher perinatal morbidities/mortalities with breech delivery irrespective of the route of delivery when compared with vertex delivery[3,9]. However, this is accentuated when it involves unplanned vaginal breech delivery[1,3,9,15]. The perinatal mortality rate in this study is lower than report from Anambra [15]. The difference may be due to difference in the population study. It is however interesting to note that as high as 81.8% of all the perinatal deaths and 100% of neonates that suffered severe birth asphyxia were delivered by vaginal route. This compares with other studies which reported higher perinatal morbidity/mortality with vaginal route irrespective of whether it is planned or not[3,15,16]. However, there was higher maternal mortality ratio when delivery was by caesarean section, contributing 66.7% of maternal mortality ratio compared with vaginal route (33.3%). This

collaborate findings from other studies[3,9,15-18]. The high perinatal mortality rate and high incidence of severe birth asphyxia associated with vaginal delivery in this study may not necessarily be due to route of delivery but may also be due to inclusion of breech delivery at gestational age lower than 37 weeks. As shown in tables three and five, 89.3% and 74.5% of neonates at gestational age less than 34 weeks and birth weight less than 2.5kg respectively, were delivered by vaginal route. It is a documented fact that prematurity and low birth weight are significant twin contributors to high perinatal morbidity/mortality.

It also shows that the higher the fetal weigh the higher the likelihood of caesarean section delivery up to the fetal weight of 3.0kg. Between fetal weights of 3.0-3.5kg, the caesarean section rate was low with corresponding high vaginal delivery. At fetal weight greater than 3.5kg, the caesarean section becomes very high with corresponding lower rate of vaginal delivery. When the estimated fetal weight was more than 4.5kg, caesarean section was the sole option in 100% of cases. Therefore, fetal weight is a very important factor in deciding the route of breech delivery[3,9,8, 12,19]. When estimated fetal weight is between 2.5kg to 3.5kg, one should consider assisted vaginal delivery if other factors are favourable. This also poses a challenge whether obstetricians practicing in environment like ours where there is strong aversion to caesarean section should consider elective labour induction when fetal weight is deemed favourable for both vaginal delivery and neonatal survival.

Large proportion of primigravidae(51.7%) delivered through vaginal route. Though the higher rate of breech delivery by vaginal route by primigravidae may not be unconnected with the inclusion of lower gestational ages ,there is the need to critically give a second thought to the dictum that all primigravidae with breec h presenting fetuses at term should be sectioned. Consideration should be given to the individual primigravida involved. Other factors such as the gestational age, estimated fetal weight, the capacity of the maternal pelvis and the type of breech, should be carefully assessed in primigravidae as is done in multiparae and grandmultiparae[3]. This is even more imperative in our environment where there is strong aversion to caesarean section and where the health seeking behaviour of our people is still poor[10].

This study also shows that more female babies (54.9%) were delivered breech and that more females were delivered by abdominal route(40.8%) compared to their male counterpart(37.1%). The reason for the higher incidence of breech delivery among female neonates with higher caesarean section rate is not very clear.

The shortcomings of this study include the in ability of the researchers to correlate the fetal outcome with parity and absence of correlation of the mode of delivery and type of breech as well as the influence of the accoucher on the fetal

outcome. They also failed to follow up the babies to know their performance in school and babies from vaginal route with babies from abdominal. Subsequent studies will take care of these.

In conclusion, whether term vaginal breech birth is safe is no longer a question. The PREMODA study has clearly shown that with careful selection and management by average maternity units, breech birth can be safe[18,20]. We are now left with two tasks. The first is to define, as clearly as possible, what parameters make vaginal breech birth safe. The second is to decide, individually and collectively as a profession, whether to make the effort required to offer vaginal breech birth[20]. Assisted vaginal breech delivery should not be thrown to the dust bin. Clinicians should no longer be in haste to section all parturients with breech presenting fetuses. A system for vaginal delivery for women who choose vaginal birth after counseling should be developed. The dictum that all primigravidae with breech presenting fetuses should be sectioned should be critically reviewed in the context of individual primigravida putting into consideration certain factors such as estimated fetal weight, gestational age, the capacity of maternal pelvis as well as the type of breech presentation. This will help reduce caesarean section rate and not scare our women, who are already aversed to caesarean section, from antenatal care and hospital delivery.

REFERENCES

1. Christain SS, Brady K, Read JA, Kopelman JN. Vaginal breech delivery: A five year prospective evaluation of a protocol using computed Tomographic Pelvimetry. Am J Obstet Gynecol 1990; 163(3): 848-55.
2. Kevin PH. Abormal Labour. In: Churchill Livingstone edn. Obstetrics Illustrated 6th edn.Elsevier ltd 2003; 269-279.
3. Thorpe -BeestonJG, Banofield PJ, Saunders NJ.. Outcome of Breech delivery at Term. BMJ 1992; 305: 746
4. Abasiattai AM, Bassey EA, Etuk SJ, Udoma EJ,Ekanem AD**.** Caesarean section in themanagement of singleton breech delivery in Calabar,Nigeria. Niger J Clin Pract. 2006**;** 9(1):22-25.
5. Abasiattai AM, Etuk SJ, Asuquo EEJ, Iklaki CO. Perinatal Outcome Following Singleton VaginalBreech Delivery in the University of Calabar TeachingHospital, Calabar: A 10-Year Review. Mary Slessor Journal of Medicine2004; .4(1): 81-85.
6. Meye JF, Mayi S, Zué AS, Engongah-Béka T, KendjoE, Olé BS. Neonatal prognosis for breech infants delivered vaginally at the Joséphine Bongo
7. MaternityHospital in Libreville, Gabon. Sante. **2003;** 13(2):81-84.
8. Nkata M. Perinatal mortality in breech delivery. Trop Doct **2001;**.31(4):222-223.

9. Churchill JA, Parkes G. The relationship of epilepsy to breech delivery. Electroencephalgraphy & Clinical Neurophysiology 2003; 11(1): 1-12
10. Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, SaigalmS, Willian AR. Planned Caesarean section versus planned vaginal birth for breech presentation at term: A randomized multicentre trial. Term breech trial collaborative group. Lancet 2000; 356(9239): 1375-83.
11. Ibekwe PC, Obuna JA. Appraisal of Indications for Caesarean sections in Abakaliki, Nigeria. Trop J Obstet Gynaecol 2006: 23(2): 150-2.
12. Chenia F, Crowther CA. Does Advise toAssume Knnee-Chest Position Reduce the incidence of breech presentation at delivery? A Randomized Clinical trial. Birth 2007; 14: 75-78.
13. Hofmeyr GJ. Effects of external cephalic version in late pregnancy on breech presentation and caesarean section rate: a controlled trial. BJOG 2005; 90(5): 392-399.
14. Leung TY, Lau TIC, Lo KWK, Ropers MS. A Survey of pregnant women's attitude towards breech delivery and external cephalic version. Australian and New Zealand J Obstet Gynecol 2000; 40(3): 253-259.
15. Feyi-Waboso PA, Selo-Ojeme CO, Selo-Ojeme DO. External Cephalic Version: Experience in a Sub-Saharan Hospital. J. Obstet Gynaecol 2006; 26(4): 317-320.
16. Igwegbe AO, Monago EN, Ugboaja JO. Caesarean section versus vaginal delivery for term breech presentation: A comprehensive Analysis. Afr J. Biomed RES 2010; 13: 15-18.
17. Lyons ER, Papsin FR. Caesarean section in the management of breech presentation. Am J obstet Gynecol 1978; 130(5):558-61.
18. Orji EO, Ajenifuja KO. Planned vaginal delivery versus caesarean section for breech presentation in Ile-Ife, Nigeria. East Afr Med J 2003; 80(11): 589-91.
19. Goffinet F, Carayol M, Foidart JM, Alexander S, Uzan S, Subtil D et al: PREMODA study Group: Is Planned Vaginal delivery for breech presentation at term still an option? Result of an Observational prospective survey in France and Belgium. Am J Obstet Gynecol 2006; 194: 1002-11
20. American College of Obstetrician and Gynecologist(ACOG) Committee Opinion 340. Mode of term breech delivery. Am J Obstet Gynecol 2006; 108: 235-237.
21. Andrew K, Yellowknife NT. Breech Birth Can Be Safe, But Is It Worth The Effort? J Obstet Gynaecol Can 2009; 31(6):553-554.