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## Breech vaginal delivery among primipara women: A 5 year analytical study at the Bamako's health district in Mali

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### Abstract

We compare maternal and neonatal outcome of breech delivery among the primipara as. Vaginal breech deliveries in single pregnancies at term were compared with deliveries in vertex presentation among the primipara in the same conditions. We determined Odds Ratio (OR) and confidence interval (CI) of 95% for analysis. During the study period 41.919 deliveries were recorded out of which 152 were primipara (0, 36%). The duration of the first period of labor was from 8 to 12 hours among 38% of case vs 35% among the controls ( $p>0, 05$ ). The Apgar score at 1 minute of  $< 7$  was found among 25% of cases vs 26% of witnesses. The early neonatal outcome was good in 87% of the cases and 95% among the witnesses ( $p>0, 05$ ). Vaginal breech delivery must be possible among primipara if an experienced clinical team is available.

**Keywords:** Breech presentation, vaginal delivery, Primipara

### Introduction

Breech presentation is a presentation in which the baby exits the pelvis with the buttocks or feet first as opposed to the normal head-first presentation. It is a potentially dystocic delivery. Indeed, unlike the vertex presentation, in the breech presentation, the different segments are delivered in reverse direction of them volume and this last can suddenly increase when the attitude of unborn is not more favorable creating thus one dystocia having for consequence the elevation of the frequency of the neonatal morbidity and mortality<sup>1</sup>. Until recently there was a debate about the route of delivery in case of breech presentation. The Term Breech Trial<sup>2</sup> and the presentation and mode of childbirth (Premoda)<sup>3</sup> studies have for many obstetricians confirmed that to avoid an excess neonatal risk when vaginal delivery was attempted, a systematic caesarean section should be performed in primiparous women with breech presentation at term. However in low resources settings like Mali, should systematic caesarean section be performed for breech delivery? We attempted to answer that question by conducting a case control study assessing the maternal and neonatal outcome of vaginal delivery and that of vertex delivery among the primipara in our department.

### Material and method

A case control study was conducted at the district V referral hospital from 1st January 2008 to 31st December 2012. For each case two controls with matching for maternal age and the parity. Cases were all primipara admitted in labor with single pregnancy estimated to be at term and an alive unborn in breech presentation among which the vaginal delivery was judged possible and accepted. The controls witnesses were constituted of primipara admitted at the labor ward with a single pregnancy and an alive unborn estimated to be at term and in vertex presentation among who the vaginal delivery was judged possible and accepted. All patients in whom elective caesarean section was decided and those admitted in labor with a death unborn, premature, multiple pregnancies or a fetal malformation, were excluded from the study. Statistics test was the Odds Ratio (OR) with its confidence interval (CI) of 95%.

### Results and discussion

During the period of the study 41.919 deliveries were recorded with 589 in breech presentation (1, 40%). Among those 589 patients having breech delivery, 152 were of primipara (25, 80%), making 0.36% of all breech delivery.

Among the 152 primiparae with a breech presentation, 50 have benefited from an immediate caesarean section; and vaginal delivery was tried among the 102 others. During the same period of study vaginal delivery was tried among 204 normal presentations (0, 49% for all deliveries).

Housewife and housekeeper was the main profession among the study population with 68% and 20% for the case vs 88% and 7% for the controls ( $p < 0, 05$ ). It was reported 40% of patients with no formal education in the case group and 12% in the control group ( $p < 0, 05$ ). Rate of women with no prenatal care was 10% among of the cases and 15% in the control group ( $p > 0, 05$ ). In the cases 60% of patients had incomplete breech presentation and 40% was complete breech presentation. Premature rupture of membrane was found among 42% of the cases and 16% among the controls ( $p < 0, 01$ ) (Table 1).

Direction of labor using the oxytocin was done in 85% of the case versus 11% among the controls ( $p < 0,001$ ). The duration of the first phase of labor ranged from 8 to 12 hours among 38% of the cases and 35% among the control group ( $p > 0, 05$ ) (Table 1). Additionally this period was  $<$  to 8 hours among 57% of case vs 61% of witnesses ( $p > 0, 05$ ). The duration of expulsion  $<$  to 5 mn and  $>$  10 mn was found respectively in 28% and 10% among the case vs 30 and 12% among the witnesses ( $p > 0,05$ ) (Table 1). The dynamic and mechanical dystocia were found in 49% and 51% among the case vs 17% and 0% among the witnesses ( $p < 0,001$ ) (Table 1).

Immediately postpartum hemorrhage was found among 14% of the cases and 10% of controls and the episiotomy had been performed among 92% of cases vs 89% of the controls (Table 2). In both case the difference was not significant ( $p > 0, 05$ ).

No maternal death was recorded in this study. Apgar score  $<$  7 was found among 25% of cases vs 26% of controls (Table 3). The early neonatal outcome was good in 87% among the case and 95% among the witnesses ( $p > 0, 05$ ). We recorded 2 early neonatal deaths among the case against 1 among the controls (Table 3).

The overall frequency of breech presentation in single pregnancies varies from an author to another. Gassan H<sup>4</sup> in Ivory Coast recorded 1.52%, of breech presentation. In Madagascar Rajaonarison reported a frequency 1, 44% JJC<sup>5</sup> which is close to our figure (1, 40%).

The age range from 20 to 34 years represented 74% of case vs 54% of controls. Farsi IF<sup>6</sup> in Senegal found 27 years as a mean age. Our population of study population was made predominantly of housewives; 68% of case vs 88% of witnesses ( $p < 0, 05$ ). Patients with no formal education accounted for 40% of cases vs 12% of controls ( $p < 0, 05$ ).

An objective of the prenatal care during the last month of the pregnancy is to establish the prognosis of the childbirth. In our study the rate of patients with no prenatal care accounted for 10% of cases vs 15% of controls ( $p > 0, 05$ ). Farsi IF<sup>6</sup> in Senegal has reported 34, 1% of patients without prenatal care.

This study has noted 60% of incomplete breech presentations vs 40% complete breech presentations. This trend was confirmed by Farsi I<sup>6</sup> in Senegal who found 52.6% of incomplete breech presentation vs 43, 3% of complete breech presentation. We recorded 70% of breech vaginal delivery among cases vs 78% of controls ( $p > 0, 05$  in our study).

Premature rupture of the membranes was more frequent among the case than the controls ( $p < 0,001$ ). Augmentation of labour with oxytocin was reported in the cases than in the controls ( $p < 0,001$ ). However no significant difference regarding the 1st and the 2nd stages of labor besides dynamic dystocia ( $p < 0,001$ ) corrected by the infusion of oxytocin. Our results are

comparable to those found in Madagascar and in Tunisia with respectively 26, 6% and 68, 3% of vaginal deliveries<sup>[5, 7]</sup>. Additionally in Tunisia it has not been found a significant difference between the route of delivery between the primipara and the multiparae ( $p > 0, 05$ )<sup>[7]</sup>

If in the literature the rate of caesarean section in the breech delivery is higher in developed countries ranging from 47.9% to 51% in France<sup>[8]</sup> and from 61.4% to 90% in the United States<sup>[9]</sup> that is not the case in the majority of sub-Saharan countries. Gassan H<sup>[4]</sup> in Ivory Coast reported 10.7% and Ilesanne O<sup>[2]</sup> in Nigeria 15%. In our study 30% of primiparae having a breech presentation had vaginal birth vs 22% of controls s ( $p > 0, 05$ ).

In addition to the infusion of oxytocin and the episiotomy, the breech delivery is more often associated with obstetrical maneuvers such as the Bracht-maneuver and the Mauriceau-Smellie-Veitmaneuver. These maneuvers lead often to neonatal complications. In the literature, several types of complications were described. However of many studies did not found any difference in term of severe mortality or morbidity between both routes of delivery<sup>[10]</sup>. Likewise the Premoda study, conducted in France and in Belgium which included 225999 annual births in 36 maternities were able to compare 5579 elective caesarean section (68,8%) to 2526 attempts of vaginal delivery (31,2%). There was no significant difference between the two groups<sup>3</sup>.

The complications are related to several factors that can to be linked to the quality of monitoring of the pregnancy and / or of labor. In our study the maternal outcome was good. There was no significant difference in terms of immediate postpartum hemorrhage ( $p > 0, 05$ ) and the f episiotomy ( $p > 0, 05$ ) rate in both groups. Episiotomy is not performed systematically among the primiparae during delivery in our setting. No maternal death was recorded among the cases or the controls. Thus it is possible to say that the maternal outcome in terms of maternal death after breech vaginal delivery is good. The neonatal outcome is more often the reflection of the quality of the monitoring of labor. In our study 75% of newborns had a Apgar score  $>$  8 at 1 minute vs 74% among the controls ( $p > 0,05$ ) and 87% of new-borns had a good prognosis to the end of the first week of life vs 95% among the controls ( $p > 0,05$ ). Two newborn deaths were reported among the cases vs 1 in the control group. In some studies, the vaginal delivery was the more often associated with a high neonatal morbidity and mortality as in the study of Gassan in Cote d'Ivoire<sup>[4]</sup> who found 27.8% of neonatal asphyxia. These differences in neonatal complications could be explained by the experience of teams and the good knowledge of different obstetrical maneuvers applicable in case of occurrence of complications during labor in breech presentation. Thus, in a study on the register of California about 100,730 breech presentations, Gilbert and al.<sup>11</sup> reported among the nullipara women in the group of vaginal delivery report to the caesarean section a net excess of neonatal mortality (OR = 9, 2 [3,3-25,6]) and of elongation of brachial plexus (OR = 33,9 [15,2-76,1]). While we notice that only 2,5% of nullipara have birth by vaginal route. The study Term Breech Trial conducted in 26 countries and 121 centers and comprising 2 088 women has compared the systematic caesarean section to the vaginal breech delivery. If the results were in favor of the systematical caesarean section, this difference was still more important in the under-group of developed country. There was no significant difference in terms of maternal mortality or morbidity between the two groups<sup>[11]</sup>. These results confirm those reported by others authors<sup>[9, 12]</sup> as well as those found in our study according to which there would have not of significant differences between the childbirth by vaginal, way of vertex among the primipara in

terms of maternal and neonatal mortality and morbidity. Additionally some authors have reported that the maternal risk

of caesarean section could be superior has that of the vaginal breech delivery [13], especially in low resources setting.

**Table 1:** Distribution of patients according to the course of labor

	Cases n= 102		Control = 204		P	OR-IC
	E	%	E	%		
Status of membranes						
Rupture	43	42	33	16	0.0000007	3.78 [2.12-6.73]
No rupture	59	58	171	84		
Oxytocine infusion						
Yes	87	85	22	11	10 <sup>-7</sup>	4.798 [3.25-10.37]
No	15	15	182	89		
Duration 1st phase (hour)						
< 8	58	57	125	61	0.458	0.83 [0.50-1.39]
8-12	39	38	72	35	0.673	1.13 [0.67-1.91]
>12	5	5	7	4	0.532	1.45 [0.35-5.46]
Duration 2 <sup>nd</sup> phase (mn)						
< 5	20	28	47	30	0.808	0.43 [0.47-1.79]
5-10	44	62	92	58	0.593	1.17 [0.64-2.17]
>10	7	10	19	12	0.632	0.80 [0.27-2.12]
Anomalies of labor						
Ineffective uterine contractions	18	49	36	17	10 <sup>-7</sup>	0.001 [0.00-0.013]
Mechanic dystocia	19	51	0	0		
Route of delivery						
Vaginal	71	70	159	78	0.19	0,66[0,33-1,31]
Caesarean section	31	30	45	22	0.19	1,520,77-3,02)

**Table 2:** Distribution of patients according to maternal outcome

Maternal outcome	Cases n =102		control n =204		p	OR-CI
	n	%	n	%		
Good	88	86	183	90		0,14 [2,39-9,44]
Postpartum hemorrhage	14	14	21	10	0.38	1,47 [0,57-3,78]
Episiotomy						
Yes	65	92	140	89	0,48	1,42[0,50-4,09]
No	6	8	18	11	0.501	0.72 [0.22-2.00]
Maternal death	0	0	0	0	-	-

**Table 3:** Distribution of patients according to perinatal outcomes

Perinatal outcome	Cas n=102		Témoins n=204		P	OR-IC
	E	%	E	%		
Apgars Score 1 <sup>st</sup> mn						
6-7	25	25	53	26	0.87	0.95 [0.48-1.86]
8-10	76	75	150	74	0,88	1,04[0,57-1,91]
Neonatal outcome at day 7						
Good	89	87	193	95	0.28	0.66 [0.29-3.54]
Bad	11	11	10	4	-	-
Perinatal death	2	2	1	1	-	-

## Conclusion

Vaginal breech delivery must be possible among primipara if an experienced clinical team is available

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