

# Comparison of Fetal Outcome in Booked Versus Non-booked Patients in Term Singleton Breech Presentation

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## ABSTRACT

**Background:** Breech presentation is one of the most important malpresentation which is associated with increased chances of perinatal mortality and morbidity.

**Aim:** To assess the proportion of non-booked breech presentation, to compare their mode of delivery and fetal outcome with those who were booked.

**Place and duration of study:** Obstetrics and gynecology department unit I, II at Holy family Hospital (HFH) Rawalpindi, obstetrics and gynecology department Benazir Bhutto Hospital Rawalpindi. Study conducted for 8 months from 25<sup>th</sup> April to 25<sup>th</sup> December 2011.

**Methods:** Total number of singleton pregnant population breech presentation comprising both booked and non-booked was collected. All high risk breeches with complications were excluded. 544 low risk cases in labor were selected randomly. Outcome measures were assessed in the form of APGAR score at 5 minutes and admission to ICU.

**Results:** 80% of cases in booked group were selected for elective cesarean section compared to 10% in un-booked case. 60% of them were delivered at 38 weeks. In booked cesarean section 28% cases have babies more than 3.5 kg weight and in un booked cases only 6% have babies more than 3.5kg. Babies of vaginally delivered breeches were weighing less than 3 kg. Maternal morbidity, duration of hospital stay and cost increased in booked group.

**Conclusion:** There is increase in maternal morbidity and hospital stay in booked breech presentation due to high cesarean rate, so we should rethink in planning mode of delivery.

**Keywords:** Booked breech presentation, non-booked breech, maternal morbidity.

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## INTRODUCTION

Breech is a condition where fetus is presented by its podalic pole. It is one of most important malpresentation affecting at least 20,000 babies in UK alone. Breech presentation at term is associated with increased chances of perinatal mortality and morbidity. Incidence of breech presentation varies with gestational age being approximately three clinical types that is frank or extended, complete or flexed and footling breech is recognized. Frank breech is commonest (60-70%) adverse perinatal outcome with prelabour cesarean section was found to be the lowest while with vaginal birth, it was found to be highest<sup>1</sup>. When factors like prematurity and congenital malformation are excluded the perinatal mortality rate for breech delivery still remains three to four times that of the vertex delivery, Nonetheless with the care full case selection and labour management in booked patients, perinatal mortality occurs in approximately 2 per 1000 births and serious

short term neonatal is approximately 2% of breech infants. Frequency of serious neonatal morbidity was found to be 3.8%. The overall fetomaternal risk is reduced in booked patients with breech presentation who undergo planned cesarean section<sup>2</sup>. Many recent retrospective and prospective reports of vaginal delivery that follow specific protocols have noted excellent neonatal outcome<sup>3</sup>. Many of the teaching hospitals have written protocols for breech delivery. Women reviewing the decisional aids experience significantly lower decisional conflict<sup>4</sup>. External cephalic versions (possible only in booked and assessed cases) can be a good choice to increase physiological deliveries with good outcome. Since the term breech was published the rate of vaginal breech birth has fallen precipitously. Vaginal breech delivery is no longer considered the standard of care and the vast majority of singleton breech presentation leads to cesarean delivery. Meanwhile the cesarean section rate in United States has reached all-time high if 31.1% and continues to increase annually. The primary cesarean delivery rate is similarly at all-time high despite recommendations from health workers 2010 for a primary cesarean rate of 15% of these, an increasing number of primary cesarean deliveries are performed from breech presentation with an associated increase

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in maternal morbidity and cost. To control this rise a part can be played by External Cephalic Version (ECV) vaginal breech delivery in selected cases<sup>5,6</sup>. Approximately 40% of cases received in our hospitals (both holy family and Benazir Bhutto hospital) are non-booked. This is due to illiteracy, poor socioeconomic status that clients are not coming for antenatal care so diagnose first time in labour. Our resources, educational level and antenatal service standard do not allow us to follow international guidelines as it is, especially in non-booked cases. We have to make our own standards because an emergency lower section cesarean section (LSCS) to improve fatal outcome, may put mother on risk. This study may provide a basis to conduct more studies at national level so that we can make protocol to manage singleton breech presentation reporting in labour to avoid Emergency LSCS, thereby avoiding scar in mother. After this study we may be able to decide vaginal breech deliveries in certain cases decreasing financial load on patient and government. This would also give us ideas to prevention of neonatal morbidity in breech presentation.

**PATIENTS AND METHODS**

This prospective study was carried out in the Departments of Obstetrics & Gynaecology of HFH, Rawalpindi Benazir Bhutto hospital Rawalpindi. Both are teaching hospital affiliated to Rawalpindi Medical College during eight months from 25<sup>th</sup> April to 25<sup>th</sup> December 2011. Sample size was calculated by WHO sample size calculator. Keeping confidence interval=95%, absolute precision=6%, P1=3.8% and p2 =1.4%. Sample size =544 patients (272 in each group). Consecutive non probability sampling technique was used. All low risk ladies who have completed 37 weeks of pregnancy with breech presentation. Patient will be taken as booked if they had at least three antenatal checkups at HFH, Rawalpindi. Non-booked patients will be taken as referred from other hospitals, clinics or first time delivery at hospital without any previous antenatal checkups.

All those patient who are more than 35 years of age, having any fetal anomalies detected at antenatal fetal anomaly scan, premature rupture of membranes, pregnancy with medical disorders like gestational Diabetes or preeclampsia or eclampsia etc and previous LSCS were excluded from the study.

**Data collection procedure:** All patients admitted through OPD and emergency were selected by consecutive non probability sampling. Proper inclusion and exclusion criteria was applied. Informed written consent was taken from each patient before

randomization. Evaluation was done by taking detailed history, general physical and obstetric examination of the patients. Data was collected with reference to the personal profile that is age, parity, antenatal booking and education status. Fetal APGAR score at 5 minutes, birth weight of neonate, mode of delivery was noted. Comparison was made regarding neonatal APGAR score at 5 minutes and NICU admission. Data was duly noted in proformas for further statistical analysis.

**Data analysis:** Data is entered and analyzed by using SPSS version-10. Mean and standard deviation is calculated by quantitative variables such as age, parity, birth weight. Frequency and percentages are presented for qualitative such as booking status, education status, mode of delivery, APGAR score at 5 minutes and N.I.C.U admission. Comparison of neonatal outcome (in terms of Apgar Score at 5 minutes and NICU admission) in booked and non-booked breech presentation based on mode of delivery is presented by applying Chi square test, P value less than .05 will be considered significant. The same selection criteria for vaginal breech delivery and c-section were used in non-booked group. Non-booked breech in labour were assessed by senior registrar who made the final decision by consulting consultant on call. Ultrasound help was available all the time for emergency cases. In non-booked breech where there is doubt about the diagnosis and the patient was not in labour, such cases were prepared for elective cesarean section. If the diagnosed breech found to fulfill the criteria of external cephalic version, then offer was given to the couple. If the couple refused ECV option for vaginal breech delivery or elective cesarean section were than discussed.

**RESULTS**

During the period of study from April 2011 to December 2011 total number of deliveries in all three units was 16211 of which 698 were singleton breech presentation making an incidence of 4.3%. Out of 698, 426(61%) were booked and 272(39%) were non-booked as shown in table and pie chart.

Table 1:

Groups	n	%age
Booked cases	426	61
Non-booked cases	272	39
Total	698	100

As far as age is concerned number of patients belonging to age group between 20-35 year in booked and non booked cases were equal, but patients below 20 years were 3 fold of non booked

group and patients >35 years were 3 fold of booked breech presentation (P value=5).

Table 2: Comparison of age in two groups

Age Groups	Booked Breech	Non-booked Breech
Less than 20 years	25 (9%)	6 (2%)
20-35 years	227(83%)	224(82%)
Greater than 35 years	20(8%)	42(16%)
Total	272(100%)	272(100%)

Booked patients are more literate as compare to non-booked clients. The different types of breech presentation were compared, Table 03 shows the results.

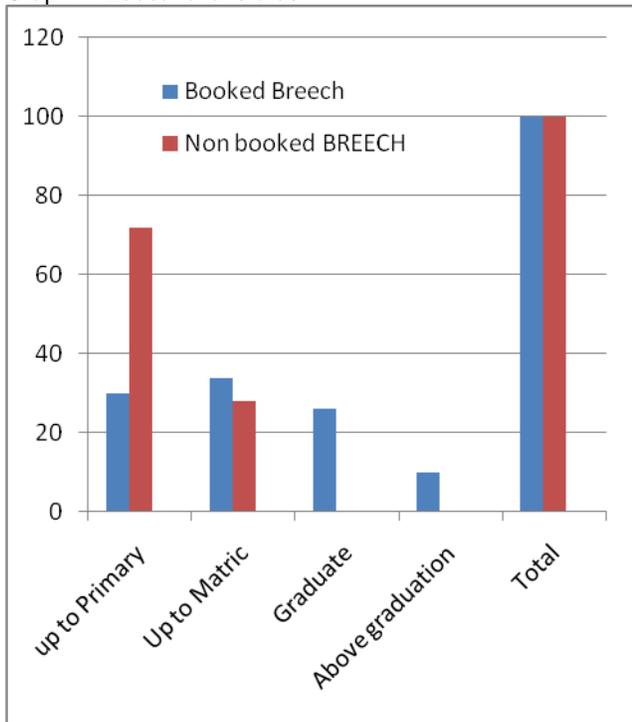
Table 3: Types of breech

Types of breech	Booked Breech	Non-booked Breech
Frank Or Extended	158(58%)	163(60%)
Flexed	97(36%)	87(32%)
Footling	17(6%)	22(8%)

Table 4:

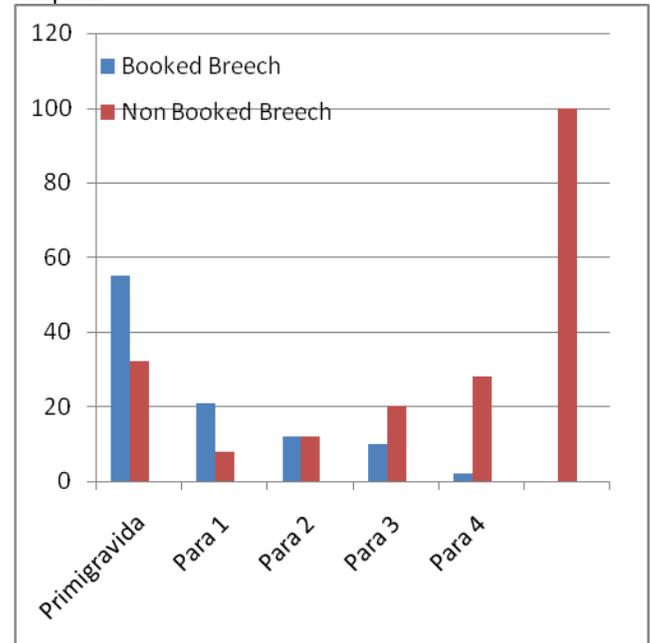
Mode of delivery	Booked Breech	Non-booked Breech
LSCS (Elective)	172(63%)	22(8%)
LSCS(Emergency)	54(20%)	160(59%)
Vaginal breech delivery	46(17%)	90(33%)
Total	272(100%)	272(100%)

Graph 1: Educational status

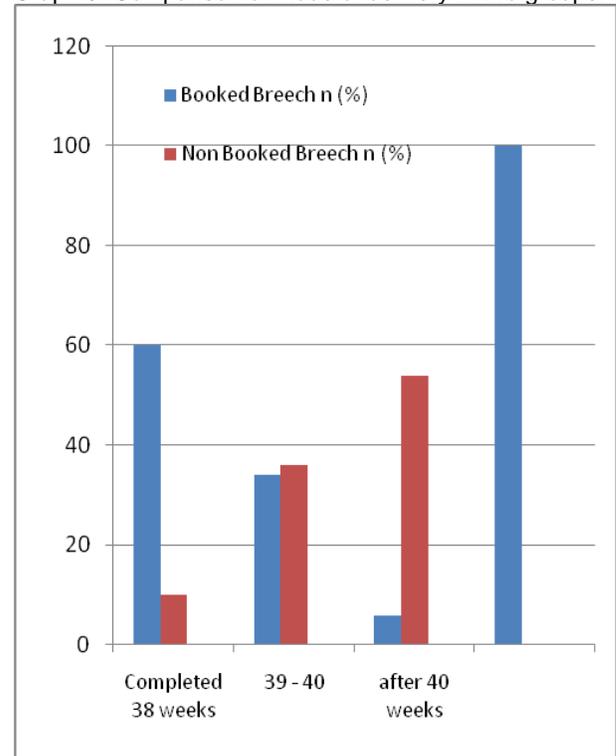


There was highly significant difference (P value=0.00001) as far as parity was concerned, the number of multigravida were more in booked group 141(52%) and multipara were 103(38%) cases in non-booked group, 4 times that of booked group 16(6%) cases.

Graph 2



Graph 3: Comparison of mode of delivery in two groups:



Gestational age at delivery in both groups: There was statistically significant difference, P value=0000

There was a statistically high significant difference between the 2 groups, (P value=0.000) as in booked breech the number of cesarean sections were seven time more than vaginal breech deliveries. Vaginal breech delivery was two times more common in the non-booked group (Table 4).

Only eleven neonates were delivered with APGAR Score <6 at 5 minutes in both groups due to problem with delivery of after coming head. There was no significant difference between the two groups as far as ICU admission was concerned. In non-booked case three babies delivered with low APGAR Score as a result of fetal distress. Regarding birth weights, there was highly significant difference (P value=0.003), which was accounted by the fact that in booked group, majority of which were selected for elective cesarean section had birth weight more than 3.5 kg, whereas those diagnosed in labour were smaller.

Graph 4: Comparison of need of nursery admission in two groups:

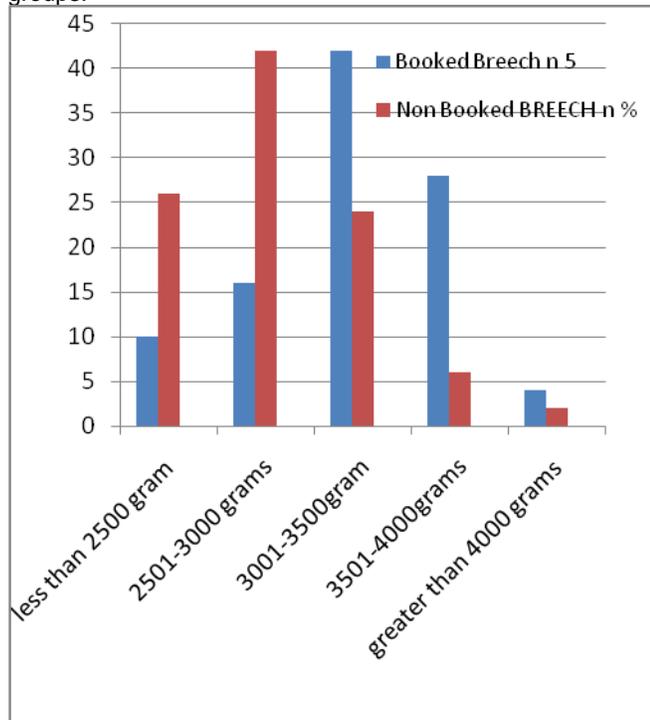


Table 5: Two groups did not show much difference in short term neonatal outcomes

Apgar score at 5 minutes	Booked Breech	Non-booked Breech
Excellent (8 -10)	250(92%)	239(88%)
Good (6 -7)	17(6%)	22 (8%)
Bad (<6)	11(2%)	11 (4%)
Total	272(100%)	272(100%)

Table 6:

Need of nursery admission	Booked Breech	Non-booked Breech
Yes	98(36%)	109(40%)
No	17(64%)	163(60%)
Total	272(64%)	163(60%)

Table 7:

Mode of delivery	Neonatal outcome	Significant
APGAR Score at 5 minutes	0.208	Not sig.
Birth Weight (grams)	0.000	Sig
Need of nursery admission	0.331	Not sig

P<0.05 will be taken as level of significant.

## DISCUSSION

These incidences of non-booked breech presentation in our study was 39% which is little higher but similar to the studies in Bradford, where the incidence was 33%<sup>5</sup>. Incidence and influence of different types of breech was studied in both booked and non-booked breech presentation showing no significant difference between two groups. Similar results were observed by the studies on influence of types of breech presentation by Discharges<sup>7</sup>, which described that no significant feature predictive of obstetrical and neonatal prognosis irrespective of the type of breech presentation. In our study most significant factor is infrequent antenatal care. Population based studies had been done on effectiveness of antenatal care by Back B<sup>8</sup>, suggesting the need for antenatal care as due to infrequent antenatal visits majority of breech cases remain undiagnosed and diagnosed for the first time in labour. It is advisable that the pregnant mother of a term breech baby should be carefully informed about the results of their trial, prior to the preferred means of delivery being decided upon, in consultation with her<sup>9</sup>. The management options are ECV, planned cesarean section or vaginal birth. For many, the choice now lies between ECV and Elective cesarean section<sup>10</sup>. Regarding mode of delivery, the number of cesarean sections were 5 times more than vaginal delivery in booked breech presentation whereas vaginal delivery was 2 times more in non booked group. The studies which support our results explain that vaginal delivery is an accepted option in management of breech for first time in labour<sup>2,11</sup>. It has been shown that the progress of spontaneous labour is an important factor in determining the mode of delivery in breech presentation. Results were comparable with other studies done on mode of deliveries in breech presentation<sup>12</sup>. Our study is supported by the results of survey of women in breech presentation by Fischer<sup>13</sup>. Intrapartum management of breech presentation remains controversial<sup>12</sup>. Wright<sup>14</sup> was the first to advocate the

routine use of cesarean section to deliver all breeches to reduce perinatal morbidity.

The increase perinatal wastage has been attributed to prematurity, fetal abnormality, asphyxia, and birth trauma comparable to the studies which explained the similar facts<sup>15</sup>. Based on the outcome measures both neonatal in term of APGAR score at 5 minutes, birth weight and admission to ICU, the currently held belief that the non booked breech presentation is associated with a significantly poorer outcome compared to the booked breech presentation appears unfounded. We therefore believe that there are no grounds for delivering all non booked breeches by cesarean section also justified by the population based studies<sup>5,16</sup>. Lastly, our study shows that patient studies show that non-booked breech at term is not at increased risk for cesarean section and there is no additional maternal morbidity but slightly increase in fetal morbidity. By taking into account the process of spontaneous labour, safe vaginal breech delivery can certainly be achieved. Our results are supported by the different studies<sup>14</sup>.

## CONCLUSION

A significant number of breech presentation are not diagnosed until labour due to lack of antenatal checkup at all or infrequent visits in the last trimester. Our results show that majority of non booked undiagnosed breech are more likely to deliver vaginally, with insignificant increase of neonatal morbidity and mortality, compared to booked diagnosed breeches. There is no firm evidence to recommend routine cesarean section for breech presentation at term particularly in non booked cases. Careful assessment for vaginal delivery is still very useful even when breech presentation is first diagnosed after the onset of labour. With proper selection of breech cases and intrapartum fetal monitoring, a substantial proportion of breech presentation could have been safely delivered vaginally without much increase in neonatal morbidity and mortality. When management decision is made the potential increased risk of neonatal morbidity after a trial of labour should be considered along with the increased maternal risks from cesarean section. Cesarean section of selected term fetuses presenting, as breech is associated with increased maternal morbidity in both diagnosed and undiagnosed groups without corresponding

improvement in neonatal out comes. Increased cost for cesarean section and for longer hospital stay should be kept in mind while assessing the mode of delivery in developing country like Pakistan. Future morbidity due to scarred uterus is an important consideration, as there is increased chance of repeat cesarean sections in next pregnancy. Fetal and maternal outcome of next pregnancy may be jeopardized if the patient does not report for hospital delivery with scarred uterus which has a chance of rupture in labour.

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