

## Vaginal breech births in a hospital where caesarean section is preferred for breech presentation

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**Objectives.** Caesarean section has become the preferred delivery method for breech presentation at Chris Hani Baragwanath Academic Hospital in Johannesburg. This study was done to determine the circumstances and outcomes of vaginal breech deliveries at the hospital.

**Methods.** Retrospective review of case files. Births of babies weighing  $\geq 800$  g, alive at onset of labour and without severe congenital anomaly were included.

**Results.** There were 90 vaginal breech deliveries. Twenty-six (28.8%) were not detected as breech on admission in labour, and 23 (25.6%) were booked for intended emergency caesarean section. Fifty-five deliveries (61.1%) were written up by registrars. In most cases there was no detail on delivery method and duration of delivery. There were 8 perinatal deaths, including 4 of babies weighing  $\geq 2500$  g. All of the latter resulted from intrapartum hypoxia.

**Conclusions.** This study has shown that vaginal breech births continue to occur as unexpected events. Techniques for vaginal breech delivery remain essential skills for obstetric clinicians.

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**To the Editor:** The decline of planned vaginal breech birth was accelerated by publication of the results of the Term Breech Trial in 2000.<sup>1</sup> Despite concerns about the validity of the trial's results,<sup>2</sup> caesarean section (CS) became the delivery mode of choice for breech presentation in South Africa, where the National Guidelines for Maternity Care in South Africa state that 'elective caesarean section is the safest method of delivery for a baby with a breech presentation.'<sup>3</sup> This recommendation is followed at Chris Hani Baragwanath Academic Hospital (CHBAH), where over 23 000 babies are born annually, with another 10 000 births at nearby midwife obstetric units in Soweto. Yet vaginal breech births still occur, with 319 (including breech stillbirths) reported in 2009. The aim of this retrospective descriptive study was to understand why and how vaginal breech births of live babies occur at CHBAH. The objectives were to: (i) determine the proportion of vaginal births that are live breech deliveries; (ii) describe antenatal and intrapartum events associated with vaginal breech births; (iii) audit clinical notes of vaginal breech births; and (iv) describe perinatal outcomes.

### Methods

The study included all singleton vaginal breech births from 1 January to 30 June 2010 of babies weighing  $\geq 800$  g, alive at onset of the second stage of labour, and without severe congenital anomaly. Birth registers were used to identify vaginal breech births. Maternal and neonatal files were then requested, and the details recorded. Data were analysed using descriptive techniques, such

as frequencies with percentages, means and standard deviations (SDs), and medians with ranges and interquartile ranges (IQRs). The Human Research and Ethics Committee of the University of the Witwatersrand gave permission for the study.

### Results

There were 90 eligible vaginal breech births, out of a total of 7 607 vaginal births (1.2%) and 11 647 total births (0.8%) at the hospital during the study period. The mean maternal age was 28.4 (SD 7.5) years, and the median parity was 1 (IQR 0 - 2). Eighty-three women (92.2%) had attended antenatal clinics. Four were referred from midwife-run clinics during antenatal care for breech presentation. No external versions were attempted in this group of women. Five women (5.6%) had elective CS booked for breech presentation. None of the women was offered or chose vaginal breech birth during antenatal care. Intrapartum events and content of delivery notes are shown in Table 1. On admission to hospital, 26 (28.9%) of breech presentations were missed, and 23 women (25.6%) were booked for emergency CS but went on to breech delivery. Twenty-nine women (32.2%) were found to be at full cervical dilatation on admission. Despite 85 (94.4%) of vaginal breech births being written up as procedures, only a minority of notes recorded times, type of breech and method of delivery. The delivery was written up by a consultant in 1 case (1.1%), a registrar in 55 (61.1%), a medical officer in 10 (11.1%), an intern in 1 (1.1%), and a midwife in 22 (24.4%). The staff grade for 1 birth was unknown. Episiotomy was done in 15 cases (16.7%).

**Table 1. Intrapartum findings, care and notes for women with vaginal breech births (N=90)**

Factor	
Gestational age on admission (weeks), median (IQR)	36 (31 - 38)
Cervical dilatation on admission (cm), median (IQR)	6.5 (4 - 10)
Clinician decision for breech delivery on admission, <i>n</i> (%)	
None: breech presentation not detected	26 (28.9)
Proceed with vaginal birth	41 (45.6)
Book for emergency caesarean section	23 (25.6)
Delivery notes, <i>n</i> (%)	
Breech birth written up as an obstetric procedure	85 (94.4)
Method of delivery noted (e.g. spontaneous, assisted, extraction)*	40 (44.4)
Duration of delivery noted	3 (3.3)
Fetal heartbeat confirmed before delivery	28 (31.1)
Type of breech noted (e.g. complete, frank, footling)	19 (21.1)
Method of delivering upper limbs noted	3 (3.3)
Method of delivering head noted	23 (25.6)
Time of delivery of the head noted	8 (8.9)

\* Among the 40 births where method of delivery was recorded, there were 11 spontaneous breech births, 23 assisted breech deliveries, and 6 breech extractions.

Nineteen babies (21.1%) had Apgar scores <7 at 5 minutes. Three (3.3%) had significant injuries: 2 had minor anal lacerations secondary to vaginal examinations and 1 had a fractured clavicle. The median birth weight was 2 370 g (range 800 - 3 920 g; IQR 1 730 - 3 000 g). There were 8 infants weighing <1 000 g, and 41 (45.6%) weighing  $\geq$  2 500 g. Forty-seven infants (52.2%) required neonatal unit admission. Neonatal encephalopathy occurred in 19 babies (21.1%). Grades of encephalopathy were not consistently assigned, so that frequencies of different grades could not be determined. There were 8 perinatal deaths (8.9%), 4 of them in babies <1 000 g. There were 4 deaths of babies weighing  $\geq$  2 500 g (9.7%), and these are described below.

**Case 1.** A 29-year-old woman, para 1, was booked during antenatal care for term elective CS for breech presentation. She presented in labour with the cervix 6 cm dilated. CS was booked but vaginal delivery became inevitable. Several registrars attempted to help with the birth, but the head could not be delivered and needed decompression by suprapubic cephalocentesis. The baby was stillborn, weighing 3 790 g.

**Case 2.** A 29-year-old woman, para 1, presented in labour at 38 weeks, but breech presentation was missed on admission and only discovered when the cervix was 8 cm dilated. CS was booked but she went into the second stage of labour, attended by a registrar. Details of the delivery were not recorded. The baby, weighing 2 750 g, developed severe encephalopathy and died in the neonatal unit.

**Case 3.** A 29-year-old woman, para 2, presented in labour at 36 weeks with the cervix 9 cm dilated. CS was not booked. Delivery was attended by a registrar and noted as a breech extraction. The 5-minute Apgar score was 3 and the birth weight was 3 220 g. The baby died 4 hours later in the neonatal unit from complications of severe intrapartum hypoxia.

**Case 4.** A 17-year-old woman, para 0, presented at 37 weeks' gestation with the cervix 4 cm dilated. Emergency CS was booked, but she progressed to the second stage of labour, and an assisted breech delivery was attended by a medical officer. The 5-minute Apgar score was 2 and the birth weight was 2 510 g. The baby developed severe encephalopathy and died in the neonatal unit.

Just over 1% of all vaginal births at CHBAH were singleton live breech deliveries. In this study, most of these births were preterm, and the mother had not been referred during antenatal care. Most patients arrived at hospital in advanced labour, and many were booked for caesarean section but gave birth vaginally before surgery could be done. Almost one-third of breech presentations were missed on admission. The quality of clinical notes describing these births was poor, with fetal heart rate, type of breech, timing and method of delivery mostly not recorded. This is of serious concern, considering the possibility of legal claims where the conduct of breech delivery is raised as a possible cause of neurological damage to a child.<sup>4</sup> The high mortality rate for babies weighing  $\geq$  2 500 g, with the unfortunate events of the cases described, highlights the risks involved in these often unplanned and unavoidable vaginal births. Obstetric skills such as clinical recognition of breech presentation, and conducting a difficult breech delivery, must remain on the training agenda for all doctors and midwives working in maternity units in South Africa.

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