Detecting Breech Presentation Before Labour: Lessons From a Low-Risk Maternity Clinic

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Abstract

Objective: Evaluation of fetal position is an important part of prenatal care. A woman with a breech presentation may need referral for external cephalic version, for assisted breech delivery, or to schedule a Caesarean section. In many centres, a breech presentation undetected until labour will result in an emergency Caesarean section, a less desirable alternative for both the mother and the health care system. The anecdotal reports of undiagnosed breech presentations at a busy maternity clinic prompted a study to quantify the missed breech presentations and to evaluate the effectiveness of the current detection process, with the aim of allowing no more than 1% of breech presentations to remain undetected until labour.

Methods: We performed a retrospective analysis of 102 breech deliveries over a 14 month period to quantify missed breech presentations, and used a prospective physician survey documenting how fetal presentation was determined at 186 prenatal visits over four months to analyze the current detection process.

Results: We found that approximately 8% of breech presentations were undetected until labour. We concluded that within the limitations of the small sample size evaluated, the current practice of using a vaginal examination to verify fetal presentation determined by abdominal palpation (Leopold's manoeuvres) may not be more accurate than abdominal palpation alone.

Conclusion: The current detection process resulted in an unacceptably high rate of missed breech presentations. The results of this study prompted the clinic's acquisition of bedside ultrasound capability to assess fetal position.

Key Words: Prenatal diagnosis, breech presentation, prenatal care, quality improvement

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Résumé

Objectif : L'évaluation de la position fœtale constitue une partie importante des soins prénataux. Les patientes dont le fœtus est en présentation du siège pourraient devoir être orientées vers des services en mesure de procéder à une version céphalique externe, à un accouchement assisté du siège ou à une césarienne. Dans de nombreux centres, une présentation du siège étant passée inaperçue jusqu'au travail mène à la tenue d'une césarienne d'urgence, soit une solution moins souhaitable tant pour la mère que le système de santé. Des signalements isolés de présentations du siège non diagnostiquées au sein d'une clinique de maternité achalandée ont suscité la tenue d'une étude visant à quantifier les présentations du siège étant passées inaperçues et à évaluer l'efficacité du processus actuel de détection, l'objectif final ayant été l'atteinte d'un taux de présentation du siège demeurant inaperçue jusqu'au travail inférieur ou égal à 1 %.

Méthodes : Nous avons mené une analyse rétrospective de 102 accouchements du siège sur une période de 14 mois pour quantifier les présentations du siège étant passées inaperçues. De plus, nous avons utilisé un sondage prospectif (mené auprès de médecins) qui a documenté la façon dont la présentation fœtale avait été déterminée dans le cadre de 186 consultations prénatales sur une période de quatre mois, et ce, pour analyser le processus actuel de détection.

Résultats : Nous avons constaté qu'environ 8 % des présentations du siège demeuraient inaperçues jusqu'au travail. Nous en sommes venus à la conclusion que, dans les limites imposées par la faible taille de l'échantillon évalué, la pratique actuelle qui prévoit l'utilisation d'un examen vaginal pour vérifier la présentation fœtale ayant été déterminée par palpation abdominale (manœuvres de Leopold) pourrait ne pas être plus précise que le seul recours à la palpation abdominale.

Conclusion : Le processus actuel de détection a donné lieu à un taux inacceptablement élevé de présentations du siège étant passées inaperçues. Les résultats de cette étude ont mené la clinique à faire l'acquisition d'appareils permettant la tenue d'échographies au chevet dans le but de déterminer la position fœtale.

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INTRODUCTION

Accurate assessment of fetal position is a critical part of routine prenatal care. By the 36th week in most pregnancies, the fetal head can be found in the maternal pelvis, and it remains there until delivery. Cephalic presentation is associated with the lowest risk for birth complications because the fetal head typically has the largest circumference of the body parts and is therefore the most difficult part to pass through the birth canal. Also, a large presenting part will act as a physical barrier to prevent umbilical cord prolapse.

Management of breech deliveries has long been recognized as a significant obstetrical issue.[1] The potential complications of breech delivery may be averted by external cephalic version.[2] While ECV may be attempted during early labour with intact membranes and adequate uterine relaxation, it is usually attempted before labour, so the fetal position needs to be assessed correctly early enough to allow a timely referral for ECV. If the fetus cannot be turned, attempting a vaginal breech delivery is an option, but this requires specialized skills not available in many obstetrical teams and again would need a timely referral. If vaginal delivery of a breech presentation is not possible, the only alternative is to schedule a Caesarean section; this became the most widely accepted management after the publication of the Term Breech Trial in 2000.[3] While a Caesarean section may represent a change to a woman's original birthing plan, early anticipation of elective CS is preferable to an emergency CS for both the mother and her care providers. The common thread in each of these options to improve outcomes is early and accurate assessment of fetal presentation.

Fetal presentation is primarily assessed using a series of abdominal palpation steps (Leopold's manoeuvres). This form of assessment has the advantages of not requiring any resources or technology beyond the hands of a skilled practitioner, being non-invasive with virtually no risk to the mother or fetus, and causing minimal discomfort. However, Leopold's manoeuvres require the practitioner to identify fetal parts accurately by palpating through several layers of maternal tissue. A second, less widely used palpation technique is to perform a vaginal examination to assess the presenting part; however, this is intrusive and often uncomfortable for the parturient woman.

ABBREVIATIONS

ECV	external cephalic version
FMC	Foothills Medical Centre
LRMC	Low Risk Maternity Clinic

More recently, abdominal ultrasound has been used to assess fetal position, with minimal maternal discomfort. The main drawback to routine use of ultrasound has been the cost of the machines and the need for training in their use. Consequently, in most centres, ultrasound remains a secondary method for assessing fetal presentation.

In the Low Risk Maternity Clinic in Calgary, Alberta, physicians noted an ongoing problem of breech presentations going undetected until labour. In Calgary (population approximately 1.3 million), obstetrical care is provided by low-risk maternity clinics run by family physicians and obstetrical clinics run by obstetricians. The LRMC is one of four family physician groups with special interest in maternity care within the Riley Park Maternity Clinic. The LRMC's 10 physicians, two nurses, and one administrative assistant are responsible for the prenatal care of approximately 50 deliveries per month, or approximately 10% of the total number of deliveries at the Foothills Medical Centre. The entire Riley Park Maternity Clinic includes 39 physicians and accounts for approximately 40% of the deliveries at FMC.

From July 2010 to June 2013, 1112 deliveries at FMC (6.7% of the total) were recorded as breech presentation. Of these breech presentations, 937 (84%) were delivered by CS, which remains the standard of care at the FMC.

At the LRMC, fetal presentation is intended to be assessed definitively at the 36-week prenatal visit. Assessments may be made before that point, but all doubt should be removed by the 36-week visit to allow the options described to be explored before labour. To assess presentation, the following steps are taken:

1. Leopold's manoeuvres;
2. A vaginal examination to confirm the fetal presentation; and
3. Ultrasound examination is carried out if there is suspicion after the vaginal examination that the presentation is non-cephalic.

The vaginal examination is always performed regardless of the findings of the abdominal examination (Leopold's manoeuvres), and the ultrasound is performed if indicated by the findings on vaginal examination, reflecting an assumption that the vaginal examination is more accurate than Leopold's manoeuvres. Unfortunately, even with the three-step process, physicians at the LRMC reported that some breech presentations were still not identified until the onset of labour, resulting in potentially avoidable emergency Caesarean sections.