



www.figo.org

Contents lists available at ScienceDirect

International Journal of Gynecology and Obstetrics

journal homepage: www.elsevier.com/locate/ijgo

CLINICAL ARTICLE

Comparison of maternal and neonatal outcomes from full-dilatation cesarean deliveries using the Fetal Pillow or hand-push method

Huda Safa^{a,b,*}, Michael Beckmann^{a,b,c}^a Department of Obstetrics and Gynaecology, Mater Health Services, South Brisbane, Australia^b School of medicine, University of Queensland, Australia^c Mater Research Institute, University of Queensland, Australia

ARTICLE INFO

Article history:

Received 5 March 2016

Received in revised form 31 May 2016

Accepted 9 August 2016

Keywords:

Cesarean delivery

Fetus

Hemorrhage

Morbidity

Pregnancy

ABSTRACT

Objective: To compare maternal and neonatal outcomes of full-dilatation cesarean deliveries using the Fetal Pillow or hand-push method. **Methods:** A retrospective cohort study included data from all women who underwent full-dilatation cesarean deliveries at term that involved the use of the Fetal Pillow or the hand-push method at Mater Mothers' Hospital, Brisbane, Australia between May 1, 2013 and March 31, 2015. Maternal (estimated blood loss, need for blood transfusion, uterine angle extension, and duration of stay in hospital following delivery) and neonatal outcomes (5-minute Apgar score below 7, cord arterial pH, admission to neonatal intensive care unit, and need for endotracheal intubation) were compared between the two treatment methods. **Results:** Of 361 cesarean deliveries performed at full dilation during the study period, clinicians documented the use of a Fetal Pillow in 91 deliveries and use of the hand-push method in 69. Lower mean intra-operative blood loss ($P=0.026$), a shorter duration of postpartum hospital admission ($P=0.002$), and higher mean cord arterial pH ($P=0.003$) were observed in the Fetal Pillow group. **Conclusion:** The Fetal Pillow appears to be a safe and effective aid for the delivery of the fetal head during cesarean deliveries at full dilatation.

© 2016 International Federation of Gynecology and Obstetrics. Published by Elsevier Ireland Ltd. All rights reserved.

1. Introduction

A deeply engaged fetal head that is difficult to deliver occurs during approximately 1.5% of cesarean deliveries [1]. This often follows a prolonged second stage of labor and failed attempts at operative vaginal delivery. A cesarean delivery at full dilatation can be a technically challenging procedure owing to the impacted head; additional measures to dis-impact the fetal head can increase the risk of fetal trauma, including skull and spine fractures, intracranial hemorrhage, and asphyxia, and will inherently increase the risk of maternal complications that can result from lacerations to the genital (uterine angle extension, damage to the uterine vessels, cervical, and vaginal extensions) and urinary tract (bladder or ureteric injuries) [2]. Methods described in the literature for dis-impacting the deeply engaged fetal head include the hand-push method [3], the reverse breech extraction (pull method) [4], and Patwardhan's technique [5].

The Fetal Pillow (Safe Obstetric Systems, Essex, UK) is a disposable balloon device that is inserted vaginally and inflated before the uterine incision is made during a cesarean delivery in advanced labor. This novel method of achieving fetal head elevation, designed to reduce

morbidity from cesarean deliveries at full dilatation, has been reported in the literature from studies in India and the UK [6,7]. A recent randomized controlled trial of 240 participants who underwent full-dilatation cesarean deliveries concluded that, "use of the Fetal Pillow in second-stage cesarean delivery significantly reduces the risk of a major extension of the uterine incision" [8]. The aim of the present study was to report the initial Australian experience with the Fetal Pillow.

2. Materials and methods

The present retrospective cohort study included patient data from women who underwent full-term cesarean deliveries at full dilatation, at Mater Mothers' Hospital, Brisbane, Australia between May 1, 2013 and March 31, 2015. Records were retrieved for all women who had singleton pregnancies and underwent cesarean delivery at full dilatation at 37⁺⁰ weeks of pregnancy or later during the study period; however, only deliveries where a Fetal Pillow or the hand-push method were used to dis-impact the fetal head were included in the analyses. Multiple pregnancies, pregnancies that resulted in fetal death in utero, and any major fetal congenital anomalies were excluded. The Mater Health Services human research ethics committee assessed the present study as being an audit of practice and not requiring full review (HREC/14/MHS/161). The study data were extracted from the study institution's electronic maternity record system (Meridian Health Informatics, Surry Hills, New South Wales, Australia); all retrieved records

* Corresponding author at: Mater Health Services, Ground Floor Aubigny Place, Raymond Terrace, South Brisbane, Queensland 4010, Australia. Tel.: +61 731 631 594; fax: +61 731 611 949.

E-mail address: Huda.Safa@mater.org.au (H. Safa).

contained only routinely collected clinical data and the need to obtain individual patient consent was waived.

Since 2009, it has been policy at the study institution that a consultant is present for all cesarean deliveries that are performed at full dilatation, and since 2011 details of the method by which the fetal head was delivered during cesarean deliveries (e.g. by surgeon/hand-push method) have been routinely recorded. Since 2013, clinicians at the study institution have been able to use a Fetal Pillow to elevate the fetal head and facilitate delivery during cesarean deliveries at full dilatation. The Fetal Pillow is a soft silicone balloon attached to 100-cm tubing with a two-way tap that controls the inflation/deflation of the device (Fig. 1). Prior to scrubbing, the device is inserted vaginally by the surgeon by folding the base plate with the balloon surface in contact with the fetal head; the device is then advanced posteriorly in the same manner as inserting a posterior ventouse cup. The maternal legs are then laid flat (Fig. 2). A total of 180 mL of saline is used for inflation of the device using the provided 60-mL syringe prior to skin incision (Fig. 3). Upon inflation, the base plate opens flat against the pelvic floor and gently elevates the fetal head 3–4 cm from its original position, making delivery easier.

Patients were grouped based on whether the hand-push method or a Fetal Pillow was applied during delivery, and maternal and neonatal outcomes were compared. The maternal outcomes that were assessed were estimated blood loss, the need for a blood transfusion, uterine

angle extension, and the duration of postpartum hospital stay. The neonatal outcomes of interest included if the 5-minute Apgar score was below seven, cord arterial pH, if admission to the neonatal intensive care unit was necessary, and the need for complex resuscitation (defined as the need for endotracheal intubation or chest compressions).

Categorical data were analyzed using the uncorrected χ^2 or Fisher exact test, and continuous variables were analyzed using a two-tailed paired Student *t* test. Analyses were performed using Stata SE version 10.1 (StataCorp, College Station, Texas, USA) and $P < 0.05$ was considered statistically significant.

3. Results

Of 361 cesarean deliveries performed at full dilation during the study period, the use of Fetal Pillow devices was recorded for 91 deliveries and the use of the hand-push method was recorded for 69 deliveries. There were no differences between the two groups with regards to maternal age, duration of pregnancy at delivery, body mass index, the proportion of deliveries preceded by failed instrumental delivery, or the proportion of deliveries recorded as category 1 cesarean deliveries (Table 1).

Lower intra-operative blood loss was recorded among patients who underwent delivery with the Fetal Pillow in comparison with those who underwent delivery incorporating the hand-push method ($P = 0.026$);



Fig. 1. The Fetal Pillow comprises a silicone balloon attached to 100-cm tubing.

Download English Version:

<https://daneshyari.com/en/article/6187025>

Download Persian Version:

<https://daneshyari.com/article/6187025>

[Daneshyari.com](https://daneshyari.com)