Audit of the use of the Fetal Pillow® in fully dilated Caesarean births at a regional hospital

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Introduction

The Fetal Pillow® is a balloon cephalic elevation device employed in fully dilated Caesarean Sections (CS), offering an alternative to methods such as breech extraction and vaginal dis-impaction in difficult deliveries[(1,2)]. This audit was conducted at a major regional hospital due to the lack of substantial evidence validating its efficacy.

Aims

To evaluate the maternal and fetal outcomes following the use of the Fetal Pillow®.

Methods

This audit reviewed all fully dilated CS at a single regional hospital site from August 2022 to November 2023. Births were divided into those that utilized the Fetal Pillow® and those that did not use the Fetal Pillow®. Data from medical records was retrospectively analysed for maternal outcomes (e.g., blood loss, uterine angle extensions, admission to HDU) and neonatal outcomes (e.g., APGARs, Special Care Nursery admission, jaundice rates).

Results

There were 83 fully dilated CS. The Fetal Pillow® were used in 43 cases (51.81%). There was a single set of twins included in this study, resulting in 84 neonates from 83 births.

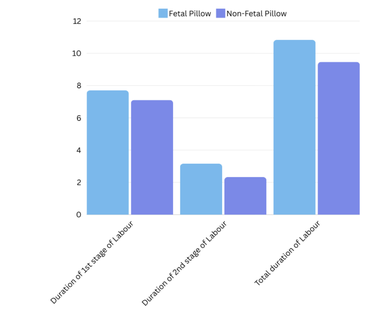

Image 1: Comparison of duration of labour between cohorts

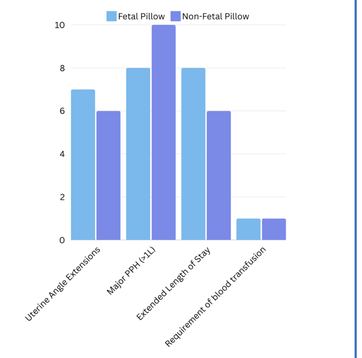

Image 2: Comparison of maternal outcomes between cohorts

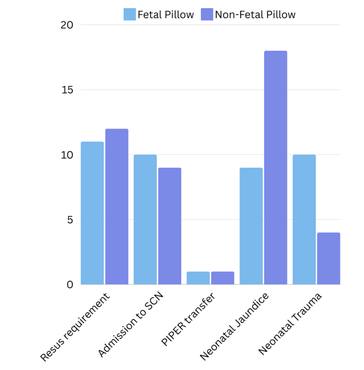

Image 3: Comparison of neonatal outcomes between cohorts

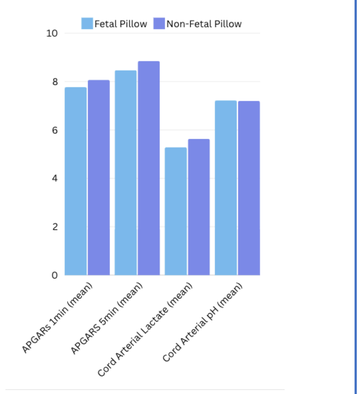

Image 4: Comparison of neonatal APGARs and Arterial Cord lactates and pH between cohorts

Baseline Characteristics:

The only statistically significant difference noted was an increased second-stage of labour in the Fetal Pillow® group, mean 3.2 hours vs. 2.3 hours (p=0.0117).

The following trends were noted in the Fetal Pillow® group:

- Longer labour duration 10.8 vs. 9.5 hours (p=0.1882)
- Increased use of oxytocin 30 vs. 22(p=0.1656)
- Less likely to be used in Category 1 CS 5 vs. 11 (p=0.067)

Overall, 81% of women who had CS at full dilatation were nulliparous.

Maternal Outcomes:

No statistically significant outcomes were noted between the two cohorts. There were trends towards decreased blood loss 732ml vs. 810ml (p=0.3624). Uterine angle extension and blood transfusion rates were low. There were no admission to HDU or maternal death.

Neonatal Outcomes:

The only outcome reaching statistical significance was reduced neonatal jaundice in the Fetal Pillow® group 9 vs. 18 (p=0.0242).

The following trends were noted in the Fetal Pillow® group:

- Increased neonatal trauma 10 vs. 4 (p=0.0970)
- Decreased length of stay 2.4 vs. 3.8 days (p=0.1215)

APGAR scores and cord pH were similar in both groups.

Discussion

This audit found no significant advantages or disadvantages associated with Fetal Pillow® usage in fully dilated Caesarean births. The increased length of labour and higher rates of oxytocin usage suggests that the Fetal Pillow® was selected in cases where there was an increased concern for obstruction. Increased neonatal jaundice in the non-Fetal Pillow® group, while noted, lacks clear significance in isolation. These results are consistent with other published results examining the efficacy and safety of the Fetal Pillow®[(3,4)] .

References

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3. Chooi K, Deussen A, Louise J, Cash S, Dodd J. Maternal and neonatal outcomes following the introduction of the Fetal Pillow at a tertiary maternity hospital: A retrospective cohort study. Aust N Z J Obstet Gynaecol 2022; 1–5. DOI: 10.1111/ajo.13635
4. Sacre H, Bird A, Clement-Jones M, Sharp A. Effectiveness of the fetal pillow to prevent adverse maternal and fetal outcomes at full dilatation caesarean section in routine practice. Acta Obstet Gynecol Scand. 2021;100:949–954. https://doi.org/10.1111/aogs.14038

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