A Survey of a New Device (the Pelvic Tilt®) for Uterine Displacement during Cesarean Sections

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Introduction: Maternal aortocaval compression in pregnancy can cause supine hypotension, and a reduction in intervillous blood flow which can adversely affect the fetus. Left uterine displacement is routinely used during cesarean sections to minimize aortocaval compression and is accomplished by either tilting the operating room table or by using a wedge. A new adjustable uterine displacement device, "the Pelvic Tilt" (PT), has recently been developed. The design builds upon the concept of a pressure bag with a 3-way stopcock and an inflatable bulb. It is placed underneath the patient's hip, and can be inflated to provide pelvic tilt. The device can be deflated following delivery, which may improve surgical access for the obstetrician and patient comfort. We evaluated this new device by surveying obstetricians at our institution.

Methods: Twenty obstetricians participated in this survey. The survey consisted of six questions regarding the routine use of uterine displacement with a wedge during cesarean sections. After a brief demonstration of the device, obstetricians were asked whether they would consider using PT compared to a conventional wedge. Data is analyzed using Chi-squared tests with $p>0.05$ considered statistically significant.

Results: 11/20 (55%) of survey participants were attending obstetricians and 9/20 (45%) were resident obstetricians. 19/20 (95%) of respondents reported using a wedge for uterine displacement during cesarean section, and 9/20 (45%) removed the wedge after the delivery of the baby. There was no difference between the grade (i.e. residents or attending) of the participant surveyed and the reported use or post-delivery removal of a uterine tilt during a routine cesarean delivery ($P>0.05$). The reasons for not removing the wedge included difficultly in accessing the wedge under the patient's hip and concerns regarding sterility. 14/20 (70%) of respondents agreed that removing a wedge would improve surgical closure and visualization during surgery. All those surveyed would consider using PT although 2/20 (10%) stated the cost of the device would influence their decision.

Discussion: It has been shown that during cesarean section, neonates from mothers with uterine displacement have improved Apgar scores and less metabolic acidosis than neonates from mothers in the supine position. This highlights the necessity for adequate uterine displacement. We postulate that PT allows the anesthesiologist better control in adjusting the angle of the tilt to maximize maternal and feto-placental blood flow. PT is a simple, practical, and disposable device, and was widely approved of by our local obstetricians. Further studies can be directed towards the device's efficacy and the optimal inflation necessary to minimize uterine aortocaval compression.

References:

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