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Use of birthing instruments helpful but with risks to mother, child

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Forceps might be a better instrument than a vacuum cup for assisting a successful birth, but new mothers might experience more trauma and complications after a forceps delivery, according to a new review of studies.

If the choice of instrument is the vacuum device — also known as a ventouse — metal cups are more successful than soft cups in delivering a baby, say authors led by Fidelma O'Mahony, M.D., of the University Hospital of North Staffordshire in England.

This procedure comes with its own risks, however: Newborns are more liable to have scalp lacerations with the metal cup than the soft cup vacuum, the researchers concluded.

"In general, these results show tradeoffs between the different instruments, with both advantages and disadvantages in most comparisons," O'Mahony said. "What is important is to be aware of the specific advantages and disadvantages of each instrument."

The review appears in the current issue of *The Cochrane Library*, a publication of The Cochrane Collaboration, an international organization that evaluates research in all aspects of health care. Systematic reviews draw evidence-based conclusions about medical practice after considering both the content and quality of existing trials on a topic.

O'Mahony and colleagues looked at 32 studies of 6,597 women to determine which instrument — if any — would be best for an assisted vaginal birth. Clinicians most often use forceps and vacuum cups when the mother is exhausted or slow to move through the second stage of labor, which starts when cervix dilation is complete and ends with the baby's delivery. Clinicians might also decide to use instruments to speed up delivery when there are signs of fetal stress, such as an irregular heartbeat.

Forceps and vacuum-assisted births are relatively rare in the United States, according to a 2006 report by the Centers for Disease Control and Prevention. That year, less than one percent of births involved forceps, and less than 4 percent involved vacuum assistance.

The decline in forceps use might be due in part to a lack of training, said Lizellen La Follette, M.D., an obstetrician-gynecologist who has practiced for 18 years in Marin County, Calif. "The reality is that once you learn to use [forceps], they're substantially more effective at executing delivery," she said.

In forceps-assisted births, the Cochrane reviewers found, women were more apt to suffer vaginal tears and trauma and experience some kind of

incontinence after the birth than those who had vacuum-assisted births. They were also more likely to need general anesthesia, and to undergo a Caesarean section.

“This may be because forceps were more often used following a failed vacuum birth,” O’Mahony said, “whereas the vacuum was less often used following failed forceps.”

Although vacuum cups appeared to be less risky for the mother’s health, they come with their own set of concerns, the researchers said.

“The risk of scalp injury with the metal vacuum cup is a particular cause for concern,” especially for women with hepatitis or HIV who might be more likely to infect their newborns through the injured scalp, O’Mahony said.

La Follette said that some expectant mothers might not want to consider an instrument-assisted birth, but that they should know that these instruments could help them avoid a Caesarean section, which carries its own risks. Her approach, she said, is to discuss all the options with a woman before birth, “so we can negotiate between the risks to get everyone to be safe and have a healthy mom and healthy baby.”

More information: O’Mahony F , et al. Choice of instruments for assisted vaginal delivery. *The Cochrane Database of Systematic Reviews* 2010, Issue 11.

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