Do Kielland forceps have a role in modern obstetrics?

Cynthia Clarkson, NCT research networker, explains how forceps are used and considers their role in the UK in the 21st century alongside the alternative, emergency caesarean section.

A planned vaginal birth is most frequently assisted with forceps or ventouse during the second stage of labour if there is delay in progress or concern that the baby is distressed. The aim is to mimic spontaneous vaginal birth and to complete the birth with a minimum of trauma to both the mother and the baby. Forceps or ventouse may be offered when the cervix is fully dilated and the baby’s head is at or below mid-cavity of the mother’s pelvis. Straightforward lift-outs using forceps or ventouse are the most common assisted vaginal births but complications increase when the baby is large, his head is still relatively high (in the mid-cavity of the pelvis) or mal-positioned (e.g. with occiput posterior). In these more complex cases, Kielland (or Kielland’s) forceps offer a means of rotating the baby to correct his position in the mid-cavity of the pelvis. They are larger than other types of forceps and have no pelvic curve. A sliding lock enables any tilt to one side of the baby’s head to be corrected. Their use carries additional risks compared with other types of forceps and requires specific expertise and training.

Out of favour

Following a number of poor outcomes with Kielland’s in the 1970s, their use was no longer universally taught to obstetricians, with the result that usage was abandoned in some units, while rigorous training and use continued elsewhere. Some consultant units use rotational ventouse (which fails more frequently), or manual rotation (with a gloved hand) followed by forceps or ventouse, as alternative ways to achieve a vaginal birth when assistance is needed and the head is still relatively high and poorly positioned. Obstetricians should be confident and competent in the use of a minimum of one technique for rotation. Others offer a caesarean at full dilatation (a procedure requiring greater skill and experience than a caesarean earlier in labour when the head is higher in the pelvis). Recent reports that the use of Kielland’s is associated with increased complications and litigation have led to renewed controversy over whether they have a role in modern obstetrics.

Avoiding surgery

A potential benefit of delivery with Kielland forceps, when the baby is not descending due to mal-position but is not seriously distressed, compared with the main alternative (caesarean section), is that major surgery can be avoided. This means that in a future pregnancy the woman remains low-risk, having no scar on her uterus. She then has a high chance of a straightforward vaginal birth (80%). A retrospective review of 735 Kielland rotational forceps performed in Edinburgh over an eight-year period has been carried out. Overall the rates of neonatal trauma and women with anal sphincter damage and haemorrhage (>1000mls) were higher than after spontaneous vaginal birth but not significantly different from rates following other assisted vaginal births. This suggests that there is still a place for Kielland forceps in a unit where obstetricians are well-trained in their use. If their baby needs assistance, some mothers may prefer an attempted vaginal birth with forceps, with everything prepared to proceed to a caesarean if the baby is not born easily, whereas others may prefer to go directly for a caesarean birth. While it is known that more mothers go on to give birth again after complicated assisted vaginal births than after emergency caesarean births in second stage, NCT was unable to locate any qualitative research on women’s experiences of rotational forceps deliveries. Not only are there medium-term consequences to consider, in the short-term, caesarean section at full dilatation can be a demanding procedure as the baby’s head may be deeply impacted in the mother’s pelvis. Compared with an emergency caesarean in first stage, a caesarean at full dilatation carries increased risks. Freeing the baby’s head carries risk of trauma. For the mother there is an increased risk of haemorrhage and extension of the uterine incision. The risk of trauma for the baby is less, however, than after an attempted assisted vaginal birth, whether the birth is accomplished vaginally or by caesarean. The pros and cons of a rotational assisted vaginal birth have to be individually determined, taking into account the exact position of the baby within the woman’s pelvis, the condition of the mother and baby, the age and obstetric history of the mother, and the experience and training of the obstetric team, all of which make a contribution to the likelihood of achieving an assisted vaginal birth with minimum of trauma to mother or baby. The informed wishes of the mother are very important. Research shows clearly that when women feel fully involved in decision-making during labour they feel more satisfied in retrospect, and the extent of interventions is less important than the sense of remaining in control. To help women and their partners feel well-informed they need to be aware of the various factors that affect outcomes.

References

To find out more about assisted vaginal birth read:
• RCOG Green top guideline no. 26 Operative vaginal birth
• RCOG Consent Advice no. 11 Operative vaginal birth

As a practitioner how do you help parents to think about the factors that might influence their decision-making when some aspect of labour does not go according to plan?

Factors that influence outcomes for the mother and baby, and parents’ feelings, include:
• Obstetric history
• Baby’s condition
• Age of mother
• Preferences for birth
• Your confidence in the obstetric team
• Usual practices of the obstetric team
• A chance to hear the pros and cons and make decisions (to give informed consent).