another treatment option in the renal unit, though they are more complicated and expensive than the standard systems. So in which patients is the extra cost and complexity justified? It seems at present that bicarbonate dialysis should be reserved for those patients with unstable circulations, whether or not associated with diabetes or liver disease, and that further work is urgently needed to define other groups of patients who may benefit. Although very ill patients with acute renal failure might be expected to be particularly sensitive to the side effects of acetate dialysis,¹¹ the advantages of bicarbonate dialysis for this group remain to be confirmed.³⁷

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Kielland or Caesar?

The second stage of labour begins when the cervix is fully dilated and normally ends less than 45 minutes later¹ with delivery of the baby. The most common reasons for obstetric intervention are delay and fetal distress, but both may be diagnosed too readily. Arbitrary time limits have often been set on the second stage because of worries about fetal asphyxia and acidosis,^{2,3} but obstetricians now believe that timing should start only when the vertex appears at the introitus^{4,5} or when pushing begins⁶: full cervical dilatation alone does not endanger the fetus, and if it is diagnosed at routine vaginal examination the mother should not be encouraged to push until she feels the urge to do so.

The diagnosis of fetal distress in the second stage may also be difficult, because decelerations of the fetal heart rate are often seen even in normal babies,^{7,8} and the passage of meconium at this stage does not necessarily indicate asphyxia.⁹ Fetal acidosis is likely, however, when signs of fetal distress have already been seen in the first stage of labour or when decelerations and meconium appear together.⁹ Fetal blood sampling will resolve any uncertainty and should help to avoid unnecessary intervention. If fetal acidosis is confirmed early in the second stage caesarean section is preferable to a difficult forceps delivery.¹⁰

Midcavity arrest in the primigravid woman is often caused by uterine inertia, but the obstetrician may be reluctant to use oxytocin because of the possibility of cephalopelvic disproportion. Among multigravidas secondary arrest of labour may indeed be due to disproportion, but among primigravidas (whose risk of disproportion has been shown to be very low¹¹) oxytocin may safely be used for the first time in the second stage and often produces descent and rotation of the head and a spontaneous or simple forceps delivery.^{6,12} Active management also reduces the incidence of occipitoposterior malposition.¹³ Application of these principles and the use of

manual rotation have led to Kielland's forceps being discarded at the National Maternity Hospital, Dublin—with no increase in the caesarean section rate.¹⁴

Nevertheless, sometimes the head remains unrotated despite good contractions, and this problem seems commoner among women receiving continuous lumbar epidural analgesia—widely used in British hospitals. Epidural anaesthesia lengthens the second stage by relaxing the pelvic floor and abolishing the urge to push,¹⁵ and while its effect on the forceps rate is still debated¹⁶ one centre has reported a 20-fold increase in forceps rotation.¹⁷ In these circumstances the obstetrician must choose between vaginal delivery (preceded by manual or instrumental rotation of the head) and caesarean section. If the head has failed to engage in the pelvis caesarean section is inevitable. Non-engagement is diagnosed by abdominal examination (p 315), but the diagnosis may be difficult—particularly for the trainee obstetrician, who may be misled by finding that the leading part is low in the vagina and may fail to appreciate the extent of caput and moulding.

Such difficulties have led to obstetricians (particularly in America) arguing that if rotation is necessary vaginal delivery should not be attempted. At first sight caesarean section seems a safer option, at least for the baby. The association between Kielland's forceps and traumatic intracranial haemorrhage has been well publicised in uncontrolled reports,^{18 19} and litigation²⁰ seems more likely if a brain damaged baby is delivered by forceps than if it is delivered by caesarean section. Damage to the maternal soft tissues and bladder is also less acceptable if inflicted by forceps than by surgery. Nevertheless, caesarean section carries risks—particularly when carried out as an emergency procedure at the end of a long labour. It increases the maternal mortality rate and the risk of postnatal complications, and it compromises future pregnancies. So far as the fetus is concerned caesarean section minimises the risk of traumatic intracranial haemorrhage,¹⁸ but the short term outcome as assessed by other indicators (p 315) is worse after caesarean section than after Kielland's forceps delivery. There is no satisfactory evidence that Kielland's forceps adversely affect the baby's long term development.

Feelings for and against Kielland's forceps are in danger of becoming entrenched (as often happens when firm data are lacking), and this may call into question the objectivity of uncontrolled reports. Controlled trials of abdominal versus vaginal delivery in midcavity arrest have been suggested^{21 22} but have not been carried out, perhaps because of the difficulty of standardising criteria for entry—particularly the crucial question of how deeply the head is engaged. So far the only comparison has been a retrospective survey²³ of manual versus instrumental rotation before vaginal delivery: in a series of 807 cases Kielland's forceps caused no more fetal or maternal morbidity than manual rotation.

Guidelines for the management of midcavity arrest are now becoming clearer.¹⁰ Many episodes could be avoided by abandoning unnecessary time limits^{23a} (p 315) and by readier use of oxytocin in the second stage among primigravidas.⁶ The remaining cases will then be the more difficult ones. Risks will be reduced by discarding the notion that a fetus distressed during the first stage should be rescued vaginally as soon as the cervix is fully dilated. The decision to use Kielland's forceps must be made by a senior obstetrician¹⁰: the decision not to use them can sometimes be made over the phone but normally the senior obstetrician will have to examine the patient. A fully trained operator is essential, as is adequate analgesia, preferably by epidural or spinal block²⁴: pudendal block is usually inadequate²⁴ and general anaesthesia (which carries its own risks)

should rarely be needed. A trial of forceps must be abandoned if the head seems too high when the blades are applied or if rotation and descent do not occur easily (p 315). Discarding Kielland's forceps completely seems an overreaction to their risks, and if the new guidelines are followed the instrument will in future be used less frequently but more safely.

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Correction

News on headache

In the first paragraph of the leading article by Dr J N Blau, "News on headache" (16 July, p 166) the 15th annual meeting of the American Association for the Study of Headache should have read the 25th annual meeting. We apologise for this error.