

Urinary Retention after Childbirth

Women rarely consider that they may have difficulty in passing urine following childbirth, but it is a problem that does occur. The National Institute for Clinical Excellence guidelines for intrapartum and post partum care (the periods covering labour, delivery and following childbirth) mention observation of bladder function and bladder care but give no guidance on how this should be done.^{1,2} There has been limited research in the subject and the development of guidelines in bladder management has been left to individual maternity units. The Royal College of Obstetrics and Gynaecology recommended in 2002 that no post operative or post delivery woman should be left more than 6 hours without passing urine or being catheterised.³ A survey the following year found that only 23% of maternity units complied with this recommendation.⁴

Research studies in 1994 indicated that 1.7% - 17% of women did not empty their bladder completely.⁵ A small number of women, less than 1%, experience a problem that does not resolve without treatment and results in acute retention.⁶ Failure of midwives to recognise this situation can cause considerable distress for the woman concerned.

Hormonal changes in pregnancy cause the bladder muscle to lose tone and so bladder capacity increases from the third month of pregnancy. This increase may not be obvious to the pregnant woman due to pressure from the enlarging uterus, but after delivery the loss of tone of the bladder muscle can cause difficulties in emptying out.

Avoiding the problem and providing proactive management starts in pregnancy. It is important to identify:

- The small number of women who have pre-existing voiding difficulties and use intermittent catheterisation to empty their bladder
- Women with a large capacity bladder who void infrequently, four or less times a day, and void large volumes of urine, in excess of 600mls
- Women who have experienced problems with bladder emptying following a previous delivery

This will provide the opportunity to give advice and plan appropriate bladder care during labour and after delivery. Sharing the guidelines used within the maternity unit allows women to be active participants in their care. It also identifies women who are competent to self catheterise and who can resume their normal routine after delivery or ask for help should it be required.

The aim of bladder management during labour, delivery and in the postnatal period is to:

- Maintain bladder function
- Minimise the risk of damage to the urethra and bladder
- Provide appropriate management strategies for women who have problems with bladder emptying
- Prevent long term problems with bladder emptying

Possible risk factors for developing difficulties in passing urine are: epidural analgesia, long labour, prolonged second stage of labour, forceps or ventouse delivery and extensive

vaginal lacerations⁷ Changes to the drug combinations and dosage used in epidural analgesia in some maternity units may reduce the risk. An effect of epidural analgesia or spinal anaesthetic is that it blocks normal sensation from the bladder and interference in normal bladder function.

Bladder management in labour

In labour women should be encouraged to empty their bladder at regular intervals, 2 hourly or before top-up of their epidural. If the woman cannot pass urine after a second attempt, an intermittent catheter can be used to empty the bladder. A standard length catheter rather than the shorter female length catheter is required for effective emptying, due to lengthening of the urethra during labour. Accurate recording of bladder emptying with times and volumes must be recorded in the notes. If labour is prolonged, an indwelling urethral catheter connected to a urine drainage bag on continuous drainage can be used.

In some maternity units, all women with an epidural will have an indwelling urethral catheter inserted following commencement of the epidural. To avoid trauma to the bladder neck or urethra, the catheter must be removed prior to delivery, whether this is a normal or instrumental (forceps or ventouse) delivery. Women requiring instrumental delivery who are not catheterised must have their bladder emptied by intermittent catheterisation prior to delivery. If the woman has an epidural in situ the urethral catheter must be replaced after delivery. Women who sustain 3rd or 4th degree perineal trauma who have not had an epidural for labour will have a spinal anaesthetic for perineal repair and be catheterised.

Bladder management following caesarean section or vaginal delivery with epidural analgesia

The rate of caesarean section has increased over the years and approximately 1 in 4 women will have a section. The rate in individual maternity units ranges from 11% to 35%. The use of epidural analgesia to provide pain relief during vaginal delivery has risen to a 23% average. This gives a substantial number of women with compromised bladder sensation for a number of hours following delivery.

Bladder sensation may take over 10 hours to return after caesarean section under spinal analgesia and over 6 hours following vaginal delivery with or without epidural analgesia.⁸ Recommendations for timing of catheter removal vary. For women following caesarean section under spinal, the catheter should be left in for at least 12 after the last top-up dose and until the woman is mobile.⁹ Following vaginal delivery it should remain in situ for a minimum of 6 hours after the last top-up or discontinuation of epidural or spinal analgesia. If removal time is due after 10pm, then the catheter should remain in place over night, to prevent disturbing sleep.

Retention of urine following caesarean section does occur, even though women will have been catheterised for 12 – 24 hours after delivery. An incidence of 3.38% was identified in a study in 2008.¹⁰ The women most at risk were those who had undergone emergency

section for lack of progress in labour. Following removal of the urinary catheter, women follow the recommendation to void within 6 hours, as detailed below

Bladder management following vaginal delivery without epidural

It is recommended that women who deliver without epidural analgesia pass urine within 6 hours of delivery.³ Encouragement after 4 hours allows time for conservative measures such as pain relief, mobilising, providing privacy or a warm bath, to be tried. Recommended action after 6 hours for women, who either cannot pass urine or only pass small amounts of urine, is either an ultrasound bladder scan to determine the volume of urine within the bladder or catheterisation. There are conflicting views as to the accuracy of bladder scan results in the immediate post natal period.^{11,12} It is considered by some practitioners that the size of the uterus following delivery results in inaccurate measurements. Not all units will have access to bladder scanning facilities and experienced staff available to undertake the procedure.

During this period of time women are advised to have a fluid intake of approximately 2 litres in 24 hours. Excessive fluid intake will increase production of urine and the rate of bladder filling. This can be exacerbated by intravenous fluids given during labour and the natural process to excrete the additional fluids retained as part of normal pregnancy which occurs during the 2nd to 5th day following delivery.

There is no consensus as to the amount of residual urine (amount of urine left in the bladder after passing urine) considered significant and the action required to resolve the problem. The following two examples from midwifery unit guidelines show the differences in action taken if a woman is unable to pass urine within 6 hours and a urethral catheter inserted.

- If the volume of urine drained is over 500mls, the catheter is left in situ for 24 hours on continuous drainage. If following removal of the catheter the residual is over 150mls the catheter reinserted for a further week. A residual of less than 150mls is an acceptable level requiring no further action¹³
- If the volume of urine drained is under 1,000mls the catheter is left in situ for 12 hours, if over that amount the catheter is left in situ for one to two weeks. Any post void residual over 100mls would require catheterisation for 12 hours.¹⁴

Alternative methods of management

Another option is suprapubic catheterisation, a catheter which enters the bladder through the abdominal wall, which is left in place for 6 weeks¹⁵. This allows for continuous drainage into a urine drainage bag, so preventing the bladder from filling and allowing it to rest, or intermittent drainage via a catheter valve, so as to allow the bladder to fill and empty in a normal cycle. How postnatal women managed by this method feel about the position of the catheter is not recorded. A benefit of suprapubic catheterisation with intermittent drainage is that the woman can attempt to pass urine voluntarily. Any urine left in the bladder can be drained via the catheter. Urethral catheters can be managed with the same continuous or intermittent drainage, but its presence in the urethra prevents normal passing of urine. The risk of urinary tract infection is increased when the catheter enters the bladder via the urethra due to the bacteria that are present in the perineal area.

The use of intermittent catheterisation has been successfully used by individuals with spinal injury and conditions which prevent normal bladder emptying during the past 50 years, but has not been readily adopted as a method of managing retention following childbirth. The technique has been successfully used to manage bladder emptying in a small number of units^{16,17}. Women attempt to pass urine and then an intermittent catheter is used to drain any residual urine, both volumes are recorded. The routine is continued on a 4 to 5 hourly basis during the daytime. This allows the bladder to follow its normal filling / emptying cycle and resume normal voiding without catheterisation when the residual reduces to 100 -150 mls. Intermittent catheterisation using a coated catheter is more comfortable than an indwelling urethral catheter, is less prone to infection and does not interfere with the management of vaginal bleeding which is normal following delivery. Women can be taught to self catheterise so as to prevent delayed discharge from hospital. Support and advice at home can be provided by midwives or local continence nurse specialist. Consistency and standardisation of advice given to the woman is important to avoid confusion. An advantage of this method is that catheterisation stops when the bladder resumes normal function. Urethral or suprapubic catheters may be in situ longer than required, if the woman has to wait to return to hospital for catheter removal at a predetermined time. The presence of a catheter in the abdomen or urethra and a urine drainage bag strapped to the leg has the potential to cause considerable distress for the woman concerned, especially as this is likely to be an unexpected development for the individual woman. Treatment options must be discussed and be acceptable to the woman, before any implementation.

Early discharge from hospital may result in women returning to hospital with problems passing urine that were not apparent during the first 48 hours following delivery. Questioning about bowel function may reveal that constipation is the underlying cause and treatment improves bladder emptying.

Women need to be advised of the risk of developing problems with bladder emptying, midwives need to monitor the situation and take prompt action if required. All maternity services should have guidelines in place to help reduce the risk of urinary retention going unrecognised and thus untreated. However, more research is required to provide sound evidence on which to standardise guidelines.

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Key points

Urinary retention can affect any woman following childbirth
Women should pass urine within 6 hours of delivery or removal of their catheter
Management options vary between Maternity Units due to lack of evidence of best practice

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