

Specialist Referral Service
Willows Information Sheets

Urinary incontinence





Urinary incontinence

What is urinary incontinence?

Urinary incontinence is a term which is generally used to describe the passive, involuntary leakage of urine via the urethra (the tube running from the bladder to the outside world) and occurs primarily when a dog is most relaxed and therefore lying down. There are a number of other types of urine leakage that your vet will consider before reaching the diagnosis of passive involuntary incontinence including:

- Overflow incontinence – in this case the bladder is so full that the normal valve mechanisms cannot prevent leakage
- Urge incontinence – urinary tract infection/irritation, inflammation of the bladder, prostate or vagina, and masses (growths) can all stimulate increased frequency of urination that can be confused with passive involuntary incontinence
- Increased water intake (polydipsia) will usually be related to increased urination and this can appear to be similar to incontinence. Conditions that result in increased thirst will need to be ruled out during the investigation of incontinence
- Anatomical abnormalities – abnormal development of the urinary tract can predispose to urine leakage, the most common form of which is incorrect placement of the ureters (ectopic ureter). The ureters are the fine tubes that drain urine from the kidneys into the bladder. Ectopic ureters usually open further downstream than normal, commonly resulting in incontinence and need to be looked for carefully during an incontinence investigation

What animals are affected?

Urinary incontinence is most commonly diagnosed in female dogs, although male dogs can be affected. Cats are rarely presented for incontinence.

The condition is diagnosed primarily in middle aged to older medium and large breed dogs, and certain breeds appear to be over-represented, including the Doberman Pinscher, Old English Sheep Dog and Springer Spaniel.

It appears that neutered (spayed) bitches are more likely to become incontinent than those remaining entire, and that those that do become incontinent often do so within one or two years of neutering surgery. The exact reason for this association with neutering remains unclear, however.

The evidence for the influence that the timing of the neutering operation (spaying) with regard to the bitch's first season has on the risk of developing urinary incontinence is also lacking. Most urinary tract surgeons prefer to neuter female dogs after one or two seasons, particularly in breeds with a predisposition for incontinence, but this potential benefit needs to be weighed up against the risks of unwanted puppies and the risks of mammary tumour development, both of which are reduced by earlier neutering. This balance of pros and cons needs to be assessed on a case by case basis.

Why do affected animals become incontinent?

Approximately 80% of mature dogs referred for investigation of urinary incontinence are diagnosed with urethral sphincter mechanism incompetence (USMI). USMI is the term used when the cause of the incontinence appears to be failure of the 'valve' of the bladder neck and urethra to prevent urine leakage. USMI can be congenital or acquired and can occur concurrently with ectopic ureters (see above), with the result that cases with ectopic ureters (which are present from birth) can sometimes present later in life as the valve mechanism also gradually 'gives up'.

What is likely to happen during an investigation of urinary incontinence?

The investigation of urinary incontinence is crucial. Logical and careful investigation will maximise the chances of accurate diagnosis and successful treatment.

Whilst the majority of dogs which develop incontinence in later life will be found to suffer from USMI, it is essential to rule out any other factors that may contribute to incontinence before considering treatment for USMI. This is due to the fact that, whilst there might be a degree of USMI present, the diagnosis and treatment of any

concurrent abnormality might significantly increase the likelihood of successful treatment of or even completely avoid the need for specific treatment for USMI.

The second reason why the investigation of the entire urinary tract is so important is that unfortunately there are no specific tests available for the diagnosis of USMI. The clinician must therefore reach a diagnosis of USMI by ruling out all the other possible causes.

A typical investigation for urinary incontinence will include some or all of the following tests:

- Blood tests – to test for evidence of kidney function or electrolyte abnormality
- Urine analysis – bladder infections are common in incontinent patients and they not only contribute to urine leakage but can cause complications if they are not diagnosed and treated before surgery
- Ultrasound scan – this will be used to examine the kidneys and bladder for abnormalities (e.g. growths etc.) and for evidence of where the ureters, running from the kidneys, enter into the bladder
- X-rays – normal, plain X-rays are useful, but other radiographic studies can be very helpful in following the structure of the urinary tract when assessing incontinent patients.
 - Intravenous urogram (IVU) – in this study a dye which shows up on X-rays is injected into the bloodstream and followed into the kidneys and further on down the ureters and into the bladder. This is useful to detect abnormalities of the ureters, including ectopic ureters (see above)
 - Double contrast cystogram – here both air and dye are injected up the urethra into the bladder. This is useful for examining the position of the bladder neck and when looking for bladder wall abnormalities or evidence of bladder stones
 - Retrograde studies – dye is injected into the vagina and the urethra and bladder – this technique is used to examine the anatomy of the vagina and possibly reveal ectopic ureters not seen in the IVU
 - Cystoscopy – a small camera can be placed in the bladder neck via the urethra in medium and large breed dogs. This technique is very useful in ruling out ectopic ureters

The investigation will often take place on a separate day to surgical treatment, due to the requirement for waiting for urine culture results in cases where there is a concern regarding possible infection.

In the event that a urine infection is diagnosed, this will require treatment with an appropriate antibiotic for 4 to 6 weeks. A negative

culture result following cessation of the antibiotic treatment will also be required prior to surgery being performed.

What are the treatment options?

Medical:

Many incontinent dogs where USMI is the sole or major cause of urine leakage will respond to medical therapy. Some will become continent and some will be greatly improved although some will remain incontinent. The drug therapy requires daily dosing and will fail to work as soon as treatment is stopped. A minority of dogs can experience behavioural changes on some medications. Some medications can be given together, improving their effect.

Surgical:

Surgery for uncomplicated USMI is reserved for those dogs where medical treatment is unsuccessful, or continuous therapy proves impractical. There are a number of techniques available, all of which have very similar success rates. The techniques available include:

- Urethropexy (for male and female dogs). Here the urethra is surgically fixed in a position which is designed to improve continence.
- Colposuspension (used in female dogs only). In this procedure the vagina, and associated urethra and bladder neck, are surgically held in a position designed to improve continence.
- Minimally invasive collagen injections into the bladder neck via a camera placed in the urethra (males require a modification of this technique).
- Prostatopexy (male dogs) – here the prostate gland is used as an anchoring point to improve the positioning of the urethra and bladder neck.

All of these procedures aim to increase the resistance to leakage of urine and have similar success and complication rates. The collagen injections often need to be repeated after one or two years.

What is the prognosis (outlook)?

The scientific papers published to date suggest that the prognosis following surgery is the same regardless of the technique used:

- 50% to 60% become continent
- 30% to 40% are improved but require some supplemental medication to remain continent
- 10% to 20% do not benefit from surgery

Our experience over recent years has indicated that we are able to be a little more positive than these figures suggest, and offer continence to 75% to 80% of cases following surgical treatment for USMI.

Complications of the different surgical procedures are similar regardless of technique used. These include infection, urine retention and continued incontinence.

The choice of surgical technique used needs to be tailored to the individual case and will be based on the evidence gained during the investigation and the discussions between the veterinary surgeon and the owner.

What should I expect when attending a referral appointment at Willows Referral Service?

At Willows we advise performing the gold standard of investigation followed by discussion regarding the treatment options which have then been found to be suited to the individual patient. This will usually involve two visits to the hospital, one to perform the investigation and a second that will be arranged a short time later, once the results of the investigation are available. The second visit will allow us to discuss the treatment options and perform surgery if necessary.

In exceptional circumstances where two visits to the hospital present significant difficulties, investigation and treatment may be possible at one visit, but this requires prior arrangement with the Willows surgeon who is to be involved in the case.

Medication prior to referral

Generally we would prefer that cases presented for incontinence have been on a trial of medication for at least four weeks prior to the first visit to give an indication of the level of control achievable with medication alone. This will need to be prescribed by the primary care vet and we are happy to discuss this should the need arise.

The preferred medication would be phenylpropranolamine but this is not suitable for all cases. Those cases receiving an oestrogen analogue should ideally stop this medication for four weeks prior to the incontinence investigation, since oestrogen can affect some of the results of pre-operative investigations.

If you have any queries or concerns, please do not hesitate to [contact us](#).

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