

Managing a cat with lower urinary tract signs:

A case report



Martha Cannon

BA VetMB DSAM(Fel), RCVS Specialist in Feline Medicine
Co-director at the Oxford Cat Clinic, UK

Introduction

Lower urinary tract signs (LUTS) are a common problem in pet cat populations around the world. There have been major recent advances in our understanding of the underlying problems that produce the painful and distressing signs that are typical of disorders affecting the lower urinary tract of cats and this improved understanding will allow us to adopt improved approaches to the prevention, investigation and management of these conditions. Nevertheless for cats, owners and veterinary healthcare teams around the world, LUTS remain a substantial cause of distress and frustration. This short case report illustrates some of the practical difficulties that can arise when dealing with this condition in day to day practice, but offers practical solutions that can help improve the lives of affected cats and their owners.

Case report

Sooty, a 9-year-old neutered female domestic shorthair cat, presented with a recent history of LUTS (Figure 1).

Background information

Sooty had been adopted by her current owners (Mr and Mrs B and their son and daughter) about 1 year previously and she was the only pet in their household. She had been overweight when she was adopted but Mrs B had controlled her

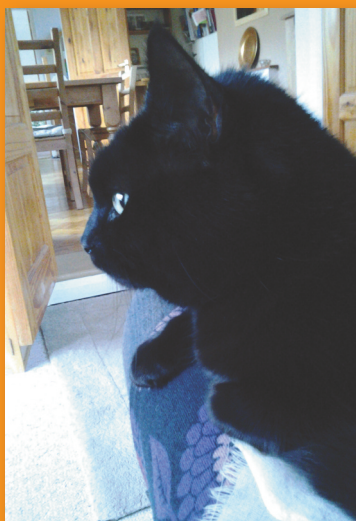


FIGURE 1 Sooty, a 9-year-old, neutered female



FIGURE 2 Overgroomed ventrum of the patient causing loss of fur

food intake and had successfully reduced her weight. Sooty was a generally healthy cat but she persistently over-groomed her ventrum causing loss of fur but not breaking the skin (Figure 2). She had free access to the outdoors but chose to spend most of her time indoors and she was fed a mixture of wet and dry proprietary cat foods.

Presenting problem – for Sooty

Approximately 4 weeks prior to presentation Sooty had started urinating in her litter tray more frequently than usual and was also urinating outside of her litter tray about once a day. On some occasions she was seen straining unproductively to urinate, while at other times she was producing urine in variable amounts, sometimes with visible blood discoloration. Her habitual overgrooming of her ventrum had now also extended to include her perineum and her hind-feet. There were no changes in her appetite or thirst and she showed no other signs of ill-health.

Presenting problem – for Sooty’s owners

Throughout the previous year Sooty had always been a clean, ‘low maintenance’ cat who socialized well with the family and had become a much loved pet. However, for the past 4 weeks she had been urinating around the house on towels, beds and carpets – the extra burden of laundry and cleaning was tiring and despite best efforts there was an all-pervading aroma of cat urine around the house. Sooty was being shut out of some of her favourite rooms, eg, the younger son’s bedroom, because she might urinate on his bed. Keeping doors shut all the time was proving difficult to live with, and being denied access to certain rooms was distressing to Sooty and this in turn was distressing to her owners. They were acutely aware that Sooty was showing signs of pain when urinating which worried them and was upsetting to watch, and the overgrooming was causing progressive alopecia of the hind-end which spoiled Sooty’s normally sleek good looks, and was a permanent visual indication that Sooty was not well.

Mrs B had presented Sooty to another local veterinary practice and a suspected diagnosis of ‘idiopathic cystitis’ lead to treatment with meloxicam. The treatment was well tolerated and Sooty took the medication on her food without complaint, but despite good compliance there was no improvement in Sooty’s signs and behaviour. Her owners were worried that Sooty had something ‘seriously wrong’ with her, or that this might be a ‘habit’ that she had developed and that if it continued they might not be able to keep her. In the face of lack of improvement, the owners decided to seek another opinion and presented Sooty at the Oxford Cat Clinic.

Physical examination and initial investigation

On presentation Sooty was bright, inquisitive and interactive and she was in good body and coat condition (weight 4.2 kg, body condition score 3/5). Her urinary bladder was empty and while there were no gross abnormalities on palpation she did appear to be uncomfortable during this part of the examination. There were no other substantial findings other than the self-induced alopecia of the ventral abdomen and hind-feet.

Differential diagnosis

The likely causes of inappropriate urination and LUTS in an otherwise apparently healthy cat were ranked in approximate order of likeliness based on the history and physical examination:

Differential diagnosis	Quite likely	Likely	Maybe	Less likely	Quite unlikely
Urolithiasis	✓				
Feline idiopathic cystitis		✓			
Bacterial urinary tract infection			✓		
Neoplasia				✓	
Primary behavioural/ ‘being naughty’					✓

Plan

The most direct, minimally invasive and cost effective plan to narrow down the differential list would involve:

- Collecting a sample of urine by cystocentesis for complete urinalysis including specific gravity, dip-stick evaluation, urine sediment examination, and quantitative bacterial culture
- Ultrasound examination of the bladder looking for evidence of urolithiasis, neoplasia, diffuse thickening of the bladder wall, etc.

However, since neither of these procedures could be done at the time of presentation a modified plan was for the owner to collect a urine sample using non-absorbent litter in her litter tray and bring it to the clinic the next day for urinalysis.

Urinalysis: voided, stored sample

- Appearance: bright yellow translucent sample
- Specific gravity: >1.050
- Dip-stick analysis: glucose negative, pH 8.0, blood +++, protein ++
- Sediment: frequent red blood cells, some struvite crystals, occasional white blood cells, no bacteria seen.

The high urine specific gravity and lack of glucosuria suggested that bacterial urinary tract infection was less likely, so the modified differential diagnosis list was now:

Differential diagnosis	Quite likely	Likely	Maybe	Less likely	Quite unlikely
Urolithiasis	✓				
Feline idiopathic cystitis		✓			
Bacterial urinary tract infection					✓
Neoplasia				✓	
Primary behavioural/ ‘being naughty’					✓

New plan

Sooty met the inclusion criteria for a small scale pre-launch open-label acceptance study looking at in-clinic feeding experience with a new therapeutic urinary food (Hill’s Prescription Diet c/d Urinary Stress). Her owner agreed to enroll her in the

TABLE 1 Emotional scale for Sooty

	0	1	2	3	4	5
Contact tolerance with familiar people	Can't be touched	Allows only short contact with humans when the cat initiates it	Does not tolerate long, provoked or spontaneous contact	Variable acceptance and seeking of contact	The cat regularly seeks and accepts contact – seldom refuses	Easily manipulated
Contact tolerance with non-familiar people	Disappears or is aggressive in the presence of people	Comes to observe but cannot be touched	Initiates contact after a while but does not accept being touched	Initiates contact after a while and accepts being touched	Accepts most, but not all human contact	Tolerant, friendly and playful with non-familiar and familiar people
Aggression	Aggressive to familiar and non-familiar people, causing injury	Aggressive to familiar and non-familiar people, except for one person, causing injury	Possible but infrequent aggression that causes injury	Threatens without fleeing	Threatens and flees	Never aggressive
Other fears	Frightened by the slightest noise or any new stimulus	Unwilling to explore; responds in a fearful way to numerous stimuli	Exhibits fearful behaviour, but explores after a while	Frightened only by specific, known stimuli	Seldom frightened – calms down quickly	Never afraid

feeding experience and we arranged to start this food at the earliest available out-patient opportunity while also recommending an in-patient visit for abdominal ultrasound and repeat urinalysis on a fresh urine sample collected by cystocentesis.

The feeding experience

Feeding experience design: A non-blinded, non-controlled feeding experience of client-owned cats with signs compatible with a clinical diagnosis of 'feline idiopathic cystitis' (FIC).

- **Inclusion criteria:** Cats showing LUTS within the last 2 weeks, excluding those known to have uroliths, plugs, bacterial infections, other less common causes of LUTS, and true behavioural problems.
- **Exclusion criteria:**
 - Major systemic diseases that could affect the stress levels of these patients.
 - Treatments and/or supplements that could affect stress hormones, behavior, or LUTS such as corticosteroids, NSAIDs, antidepressants, antibiotics, pheromones, etc.
- Feeding experience period: 60 days on the food with no other measures/treatments besides environmental enrichment (ie, no pheromones, nutraceuticals or other treatments such as NSAIDs, antidepressants, antibiotics, etc, that are used for cats with LUTS).

Evaluations:

- Consultation (V0)
 - Full history and physical examination
 - Baseline 'Cat Emotional Scale', food preferences, FLUTD scale
 - Morning voided urine sample collected at home: standard urinalysis, cortisol/creatinine ratio.
- Telephone owner follow-up (2 weeks) (T1)

– Cat emotional scale, taste perception, FLUTD scale

- Consultation (4 weeks) (V1) = as V0
- Telephone owner follow-up (6 weeks) (T2) = as T1
- TConsultation (8 weeks) (V2) = as V0

Starting the feeding experience

Sooty was presented at 9 am the next morning for V0: on physical examination her bladder was again empty.

Her baseline emotional scale per owner is indicated by red circles on the Table 1.

Her owner's assessment of Sooty's FLUTD scale were:

	No presence 0	Minimal presence 1	2	Medium presence 3	4	Severe presence 5
Frequent visits to the litter box					✓	
Signs of pain or difficulty during urination				✓		
Urinating at inappropriate places						✓
Red discoloration of the urine			✓			
Straining				✓		
Over-grooming						✓

Recommended alterations to her environment included:

- **Litter tray(s):** Sooty had always used a covered litter tray and there had been no recent changes to its site or the substrate (non-fragranced, clumping, clay-based). **Recommendation:** Provide an additional litter tray in a separate area of the house.
- **Food and water bowls:** Sooty had one food bowl and one water bowl, both sited quite close to the litter tray. **Recommendation:** Move both bowls further from the litter tray and provide an additional water bowl in a separate area of the house.
- **Resting places:** Currently excluded from some of her favourite resting sites (due to inappropriate urination). **Recommendation:** Allow access to favourite sites. Clean any areas of urine soiling thoroughly using detergent and an enzymatic odour eliminator.
- **Interaction/playing:** Sooty had a number of toys and enjoyed playing with the children. **Recommendation:** Increase quality time spent with owners and increase play.

Mrs B was provided with a supply of both wet and dry ‘feeding experience food’ (Hill’s Prescription Diet c/d Urinary Stress) with instructions to transition Sooty to the new food over a 7 day period and to let us know if Sooty was not accepting the food; if the LUTS deteriorated further; or if any new signs developed. An in-patient appointment for ultrasound and urinalysis was booked for 5 days time (being the earliest date the owner could manage) and a follow up telephone interview (T1) was scheduled for 2 weeks time.

Outcome

Mrs B was keen to start dietary and environmental modifications and to make progress rapidly – she instituted all the recommended changes but with some trepidation regarding allowing Sooty free access to all areas. Sooty ate the food well (see Figure 3), and in view of this and to try to expedite response to dietary management, Mrs B elected

not to transition gradually to the new food, but rather to achieve the change in 2 days.

Sooty showed an immediate and marked change in her condition from the time that Mrs B started to feed the new food. There were no further episodes of inappropriate urination, visits to the litter tray settled to normal (Sooty continued to use the familiar tray, disregarding the new tray although it remained available to her) and Mrs B was not aware of any further episodes of haematuria. She cancelled the planned in-patient appointment and at the 2-week follow-up interview reported complete resolution of all LUTS with no relapses. Her assessment of Sooty’s emotional scale was unchanged, but the FLUTD Scale was now:

	No presence 0	Minimal presence 1	2	Medium presence 3	4	Severe presence 5
Frequent visits to the litter box	✓					
Signs of pain or difficulty during urination	✓					
Urinating at inappropriate places	✓					
Red discoloration of the urine	✓					
Straining	✓					
Over-grooming				✓		

This remarkable and rapid response to dietary and environmental modification was maintained throughout the subsequent weeks.

- Was Sooty suffering a particularly prolonged episode of FIC or struvite disease, or both, which was resolved by the therapeutic urinary food? **We don't know.**
- Was the apparent response to diet genuine, or was it co-incidental? **Again we don't know.**

Nevertheless:

- Was the cat happy? **Yes**
- Were the owners happy? **Yes**
- Was the veterinary healthcare team happy? **Yes**
- Was it a good outcome? **Absolutely!**

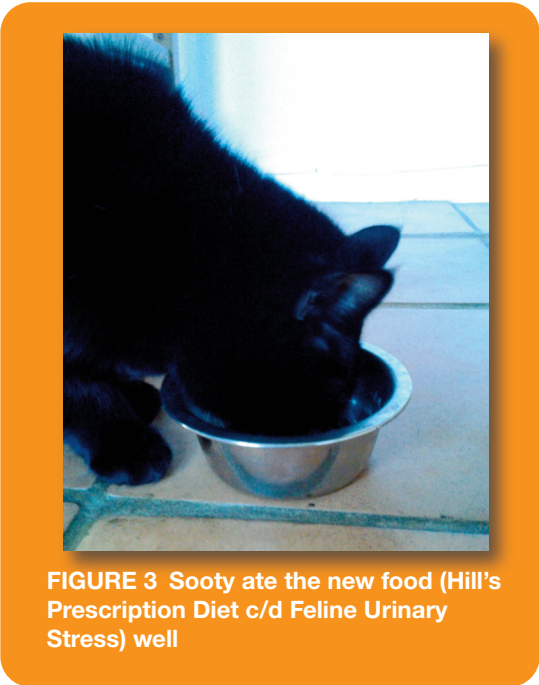


FIGURE 3 Sooty ate the new food (Hill’s Prescription Diet c/d Feline Urinary Stress) well