

A Monthly e Magazine  
ISSN:2583-2212

April 2024 Vol.4(4), 1457-1460

Popular Article

## Feline Idiopathic Cystitis: An Overview

Dr. Lisa Modi, Dr. Neha Rao, Dr. Om Patel, Dr. Jeet Chaudhary

Department of Veterinary Medicine, College Veterinary Science & A.H., KU, Anand

<https://doi.org/10.5281/zenodo.11003290>

### Introduction

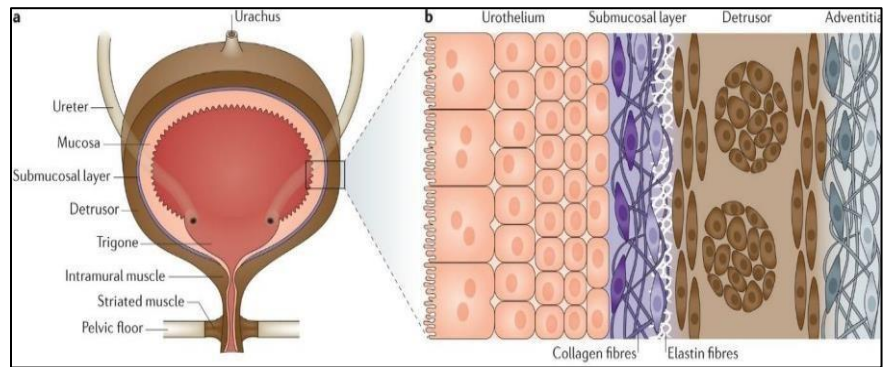
Feline Lower Urinary Tract Disease (FLUTD) Feline Lower Urinary Tract Disease (FLUTD) is general term used to describe constellation of different conditions affecting the bladder or urethra in cats. It has been reported that between 4.5% to 8.0% of cats presenting to veterinary practice or teaching hospitals. Etiological factors of FLUTD are feline idiopathic cystitis (FIC), urolithiasis, bacterial urinary tract infection (UTI), neoplasia, anatomic malformations, iatrogenic, behavioural, metabolic, or neurologic problems (Longstaff *et al.*, 2017).

Feline idiopathic cystitis is a painful condition of the bladder with inflammation and bleeding of the bladder wall, where no other primary cause can be found to explain the inflammatory process. It is classified on the basis by the presence or absence of urethral obstruction as obstructive and non-obstructive uropathy, respectively. Non-obstructive idiopathic cystitis is dominant type which has divided into 3 forms (i) Single acute self-limiting episode (8-90%), (ii) Frequently recurring episodes (2–15%), (iii) Persistent forms (2-15%) (Saevik *et al.*, 2011).

Often cats with FIC may suffer with disorders of the skin, gastro-intestinal system, respiratory system and behavior, which is called “Pandora syndrome” (syndrome does not identify any specific cause or organ), but cystitis is the most common manifestation of stress- induced disease in cats.

### Anatomy of Bladder

The bladder, situated within the peritoneal cavity, is anchored to the abdominal wall by loose, double-layer peritoneal ligaments. Comprising transitional epithelial cells, its urothelium forms the inner



mucosa, while the submucosa houses connective tissue. Encased by smooth muscle known as the detrusor muscle, the bladder lacks a distinct internal sphincter at the vesicourethral junction, as its muscle fibers interdigitate with those of the urethra. Serving as a reservoir for urine, the bladder's size fluctuates based on its contents. In felines, the bladder remains in the caudal abdomen even when empty. Typically, thin-walled, the bladder thickens in diseased states. This anatomical and functional understanding underscores the bladder's pivotal role in urinary regulation and pathology

### Signalment & Risk Factors

Characteristics	Examples
Age	Middle-age (2 to 8 year)
Sex	Male (Castrated)
Body Condition	Over weight
breed	Russian blue, Persian, Himalayan
Unpleasant sensory elements	Cold temperature, rough surfaces, loud noises, unpleasant or strong odours
Food type	Dry Food
Newness	Unfamiliar person, moving to a new space
Inconsistency with cat's expectation	Change in schedule, delay in meal times, unpredictability in litter box cleaning
Inability for cat to control its surroundings	No places to hide or climb, forced or inappropriate handling, inability to show normal behaviour

### Patho-Pysiology

Pathophysiology of FIC involve the multiple interaction rather than a single entity. The local bladder abnormalities and neuroendocrine changes are important, but stress is also playing a major



role. In bladder abnormalities, disruption of GAG layer and/or the urothelium is seen which leads to increase in the bladder wall permeability and neurogenic inflammation (Grauer, 2013). In Neuroendocrine abnormality, chronic activation of stress pathways leads to suppression of adrenal cortex function. The lack of cortisol means there is a lack of feedback inhibition to the anterior pituitary, hypothalamus, and locus coeruleus resulting in further increases in corticotrophin-releasing factor (CRF), ACTH and norepinephrine (NE). Inadequate suppression of the sympathetic nervous system results in activation of the C-fibres in the bladder causing neurogenic inflammation and leading to secondary activation of afferent sensory nerves (Westropp and Buffington, 2004).

### **Diagnosis**

No sensitive and specific test of FIC is clinically available. The diagnosis of FIC primarily relies on the clinical signs and behavioral history of the affected cats. Diagnosis by procedure of exclusion, ruling out other LUT-related disorders, such as urolithiasis, UTI, 3 anatomic abnormalities, behavioral disturbances, and neoplasia (Chew *et al.*, 2011). Potential Biomarkers like pro-inflammatory cytokines interleukin 12 (IL-12), interleukin 18 (IL-18), were discovered to increase significantly in the serum profile of FIC affected cats (He *et al.*, 2022)

### **Treatment**

The management of FIC is usually long-term management that needs the compliance and dedication of pet owners. The major treatment for FIC should be Multi Modal Environmental Modification (MEMO) based on the behavioural history and personal preferences of the affected cat. Management of the non-obstructive FIC by, providing antispasmodic, analgesic, anxiolytic drugs, GAG supplements, and some therapeutic additives. In the obstructive type of FIC catheterization is performed to relieve the obstruction and perineal urethrostomy (PU) with medication if needed (Pachtinger, 2014).

### **References**

- Chew, D. J., Schenck, P., & DiBartola, S. P. (2011). Non obstructive idiopathic or interstitial cystitis in cats. *Chew DJ, Schenck P, DiBartola SP. Canine and feline nephrology and urology. 2nd ed. Missouri: Saunders Elsevier, 306-40.*
- Grauer, G. F. (2013). Current thoughts on pathophysiology & treatment of feline idiopathic cystitis.
- He, C., Fan, K., Hao, Z., Tang, N., Li, G., & Wang, S. Prevalence, Risk Factors, Pathophysiology, Potential Biomarkers and Management of Feline Idiopathic Cystitis: An Update Review. *Frontiers in Veterinary Science, 9.*
- Longstaff, L., Gruffydd-Jones, T. J., Buffington, C. T., Casey, R. A., & Murray, J. K. (2017). Owner-reported lower urinary tract signs in a cohort of young cats. *Journal of feline medicine and surgery, 19(6)*, 609-618.



- Pachtinger, G. (2014). Urinary catheter placement for feline urethral obstruction. *Clinicians Brief, July*, 69-74.
- Sævik, B. K., Trangerud, C., Ottesen, N., Sørum, H., & Eggertsdóttir, A. V. (2011). Causes of lower urinary tract disease in Norwegian cats. *Journal of Feline Medicine and Surgery*, **13(6)**, 410-417.
- Westropp, J. L., & Buffington, C. T. (2004). Feline idiopathic cystitis: current understanding of pathophysiology and management. *Veterinary Clinics: Small Animal Practice*, **34(4)**, 1043-1055.

