

Hematuria

(Blood in the Urine)

Basics

OVERVIEW

- “Hematuria” is the medical term for blood in the urine
- Blood in the urine (hematuria) may indicate a serious underlying disease process

SIGNALMENT/DESCRIPTION OF PET

- Dogs and cats
- Familial hematuria (condition in which blood in the urine runs in certain families of animals) in young pets; from cancer in older pets, immune-mediated diseases tend to occur in young adult animals
- Females at greater risk for urinary tract infection (UTI) than are males

SIGNS/OBSERVED CHANGES IN THE PET

- Blood in the urine (hematuria) is a sign itself
- Red-tinged urine, with or without abnormally frequent passage of urine (known as “pollakiuria”)
- Mass may be felt during physical examination in pets with cancer
- Abdominal pain, in some pets
- Enlarged and/or painful prostate gland may be felt during physical examination in male dogs
- Bruising (known as “petechiae” if pinpoint spots of bleeding or “ecchymoses” if larger, purplish patches) in pets with blood-clotting disorder (known as “coagulopathy”)

CAUSES

Systemic (Generalized within the Body)

- Blood-clotting disorder (coagulopathy)
- Low number of platelets or thrombocytes in the blood (known as “thrombocytopenia”)
- Inflammation of the blood vessels (known as “vasculitis”)

Upper Urinary Tract (Kidneys and Ureters [Tubes from the Kidneys to the Bladder])

- Structural or anatomic disease, such as cystic kidney disease and familial kidney disease (condition which runs in certain families of animals)
- Metabolic, such as kidney stones (known as “nephrolithiasis”)
- Cancer, such as kidney lymphoma, adenocarcinoma, or hemangiosarcoma
- Infectious diseases, such as bacterial (for example, leptospirosis), viral, (for example, feline infectious peritonitis coronavirus), and deep fungal infection



- Inflammatory disease, such as glomerulonephritis (inflammation of the glomerulus [a tuft of blood capillaries—the “blood filter”] in the kidney)
- Unknown cause (known as “idiopathic disease”)
- Trauma

Lower Urinary Tract (Bladder and Urethra [the urethra is a tube from the bladder to the outside, through which urine flows out of the body])

- Structural or anatomic, such as bladder malformations
- Metabolic, such as stones (known as “uroliths”)
- Cancer, such as transitional cell carcinoma and lymphoma
- Infectious disease, such as bacterial, fungal, and viral disease
- Unknown cause (known as “idiopathic disease”)—cats: feline idiopathic lower urinary tract disease or feline idiopathic cystitis
- Trauma
- Cyclophosphamide-induced hemorrhagic cystitis (a side effect of the chemotherapeutic agent cyclophosphamide is a bloody inflammation of the bladder wall)

Genitalia

- Metabolic, such as the “heat cycle” or “estrus”
- Cancer or tumors, such as transmissible venereal tumor; leiomyoma (tumor that develops from smooth muscle in the urinary tract); and prostate cancer (prostatic adenocarcinoma)
- Infectious disease, such as bacterial and fungal disease
- Inflammatory disease, such as enlargement of the prostate (known as “benign prostatic hyperplasia”) and inflammation of the prostate (known as “prostatitis”)
- Trauma

RISK FACTORS

- Breeds with higher likelihood than other breeds to develop urinary tract stones (known as “urolithiasis”), such as the Dalmatian that forms stones containing urate (known as “urate urolithiasis”); to develop blood-clotting disorders (known as “coagulopathies”), such as the Doberman Pinscher that inherits von Willebrand’s disease, a bleeding disorder caused by lower than normal levels of factor VII—one of the ingredients required to clot blood; or to develop cancer, such as Scottish Terrier and transitional cell carcinoma.

Treatment

HEALTH CARE

- Depends on primary or associated diseases
- Urinary tract infection may be associated with another disease involving the urinary tract (known as “local disease”), such as cancer or urinary tract stones (urolithiasis) or involving the body in general (known as “systemic disease”), such as excessive production of steroids by the adrenal glands (known as “hyperadrenocorticism” or “Cushing’s syndrome”) and diabetes mellitus (“sugar diabetes”) that also requires treatment

DIET

- Urinary tract stones (urolithiasis) and kidney failure may require diet modification

SURGERY

- Surgery may be indicated for cases with urinary tract stones, tumors (cancer), and traumatic injuries to the urinary tract

Medications

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive

- Blood transfusion may be necessary if pet has a severely low red blood cell count (known as “anemia”)
- Fluids to treat dehydration
- Antibiotics to treat urinary tract infection and generalized disease caused by the spread of bacteria in the blood (known as “septicemia” or “blood poisoning”)
- Heparin for the blood-clotting disorder known as “disseminated intravascular coagulation” or DIC

Follow-Up Care

PATIENT MONITORING

- Depends on primary or associated diseases

PREVENTIONS AND AVOIDANCE

- Depends on primary or associated diseases

POSSIBLE COMPLICATIONS

- Low red blood cell count (anemia)
- Inadequate or low circulating blood volume (known as “hypovolemia”), if severe bleeding
- Blockage of the one or both ureters (tubes from the kidney to the bladder; known as “ureteral obstruction”) or blockage of the urethra (tube from the bladder to the outside, through which urine flows out of the body; known as “urethral obstruction”) due to blood clots

EXPECTED COURSE AND PROGNOSIS

- Depends on primary or associated diseases

Key Points

- Blood in the urine (known as “hematuria”) may indicate a serious underlying disease process