

Potential Causes of Hematuria

URINARY CAUSES

Initial Hematuria*

Urethra

- Trauma
- Infection
- Urolithiasis
- Neoplasia
- Granulomatous urethritis

Bladder trigone region

- Neoplasia

Total† or Terminal Hematuria‡

Pseudo-hematuria§

Kidney, ureter, bladder

- Trauma
- Infection
- Urolithiasis
- Neoplasia
- Parasitism
- Drug-induced (cyclophosphamide)

Feline lower urinary tract inflammation syndrome

Renal infarction

Renal telangiectasia

Idiopathic renal hematuria

EXTRAURINARY CAUSES

Spontaneous bleeding unassociated with voiding may also occur with:

- Prostatic infection, cyst, abscess, neoplasia
- Uterine infection, neoplasia, subinvolution; proestrus
- Vaginal neoplasia, trauma
- Preputial neoplasia, trauma

Prostatic (see above)

Bleeding disorders (coagulopathy, thrombocytopenia)

Heat stroke

Exercise-induced hematuria

* Initial hematuria: Hematuria most pronounced at the beginning of voiding

† Total hematuria: Hematuria present throughout voiding

‡ Terminal hematuria: Hematuria most pronounced at the end of voiding

§ Pseudo-hematuria: Reddish-brown urine caused by hemoglobinuria or myoglobinuria

Dx Diagnosis
***** Result

Diagnostic Approach to Hematuria

Dx History and physical examination

Dx Observe voiding and obtain voided urine sample

Dx CBC, platelet count, and biochemistry profile

Dx Compare cystocentesis urine sample to voided urine sample

***** Hematuria in both samples

Suspected upper urinary tract hemorrhage
 (bladder, ureters, kidneys)

Dx

- CBC, platelet count, and biochemistry profile
- Urine culture + sensitivity
- Abdominal radiographs ± ultrasonography
- Contrast cystography ± intravenous urography
- Coagulation profile
- Abdominal exploratory surgery

***** Hematuria in voided sample only

Suspected urethral or genital tract hemorrhage

Dx

- Prostatic wash/ejaculate or vaginal examination with cytology and culture
- Abdominal radiographs ± ultrasonography
- Contrast urethrogram ± vaginography
- Prostatic biopsy
- Platelet count and coagulation profile
- Abdominal exploratory surgery