



EMERGENCY MEDICINE: **Uroperitoneum & Uroabdomen**

Definitions	Uroperitoneum is urine free in the peritoneal space. It can mean there is a tear in the ureter, bladder or proximal urethra. If a ureter is torn and the peritoneum remains intact, retroperitoneal accumulation of urine can occur.
When to consider it?	Consider this condition in any case of blunt or penetrating trauma such as falls from heights, hit by car, gunshot wounds involving the abdomen, and urethral obstruction by calculi or mucous plugs. Iatrogenic uroabdomen may be caused by urinary catheterization or after a cystotomy (with surgical technique flaws or residual stone or blood clot in the urethra). A bladder can rupture spontaneously due to bladder atony or necrotizing cystitis.
What are the signs?	Patients may present with a myriad of signs including generalized malaise, anorexia, vomiting, fever and signs of shock. More specific signs include acute abdominal pain, dysuria, stranguria, hematuria, abdominal distension, or bruising in the inguinal or perineal region. Not every patient with leakage of urine into the abdomen is obvious. However, it is life-threatening if not identified and treated. Small, slow leaks may be difficult to identify. A palpable bladder and the ability of the patient to pass urine doesn't disprove that there is a rupture in the urinary system.
Diagnosis	Evaluation of blood gas, electrolytes, BUN, and creatinine values as well as abdominal radiography is a vital first step to diagnosing this condition. Patients may exhibit varying degrees of azotemia and electrolyte abnormalities including hyperkalemia, hyponatremia, hypochloremia, and metabolic acidosis. A creatinine level of abdominal fluid (see www.michvet.com/professionals/recent_articles.asp for abdominocentesis) that is greater than twice the serum level is diagnostic for uroabdomen. Radiographs may permit visualization of the bladder, cystic or urethral calculi, or may show an overall poor detail in the abdomen. Additional diagnostic imaging techniques such as an abdominal ultrasound, contrast urethrocystogram or intravenous urogram may be necessary to identify the exact location urinary tract rupture.
Treatment	Initial treatment includes intravenous fluid therapy and evacuation of urine from the abdomen. A urinary catheter may serve to remove urine from the abdomen. If a catheter is ineffective, a transabdominal drain (fenestrated large red rubber catheter) may be used. Small bladder and urethral tears can heal by placement of an indwelling urinary catheter for 3 to 10 days, yet more significant tears require surgery. If the size or extent of the tear is uncertain, surgery should be done once the renal values have normalized.
Questions?	Our 24/7 Emergency and Critical Care service is open year round and staffed by highly trained doctors and technicians. MVS attracts the top veterinarians from Canada and the United States for its positions and the ER doctors have access to specialists 24 hours a day, 7 days a week. Contact them at (248) 371-3713 or (248) 354-6660 with questions about your cases.

LOCATIONS

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