

IT'S YOUR CASE

Species: Canine

Breed: Bichon Frise Sex: Male Neutered Age: 12 years

Clinical History:

Vomiting and struggling to defecate. Owners report that he is painful abdomen when touched. He is anorexic. He has no prior pertinent medical history.

Physical exam: Very painful on abdomen palpation

Anatomic regions: Abdomen

Details of study and technical comments:

Evaluation consists of right lateral, left lateral and ventrodorsal radiographs of the thorax and abdomen. The images are reviewed in PACS format.

Diagnostic interpretation:

ABDOMEN:

There is a mass effect (red arrows) identified in the area of the kidneys with ventral displacement of the colon and small intestinal tract (orange arrows). There is diffusely reduced serosal contrast in the retroperitoneal peritoneal space with generalized increased opacity (yellow arrows). There are multiple focal areas of dystrophic mineralization associated with the renal pelves and diverticula (green circles). A mild amount of focally increased peritoneal soft tissue opacity is noted surrounding the urinary bladder (light blue arrow). Several radiopaque calculi (purple arrows) are identified within the urinary bladder although the urinary bladder margins are not well identified. The entirety of the urethra is not included in the study.

The visible margins of the hepatic and splenic silhouettes are within normal limits. The gastrointestinal tract appears normal.

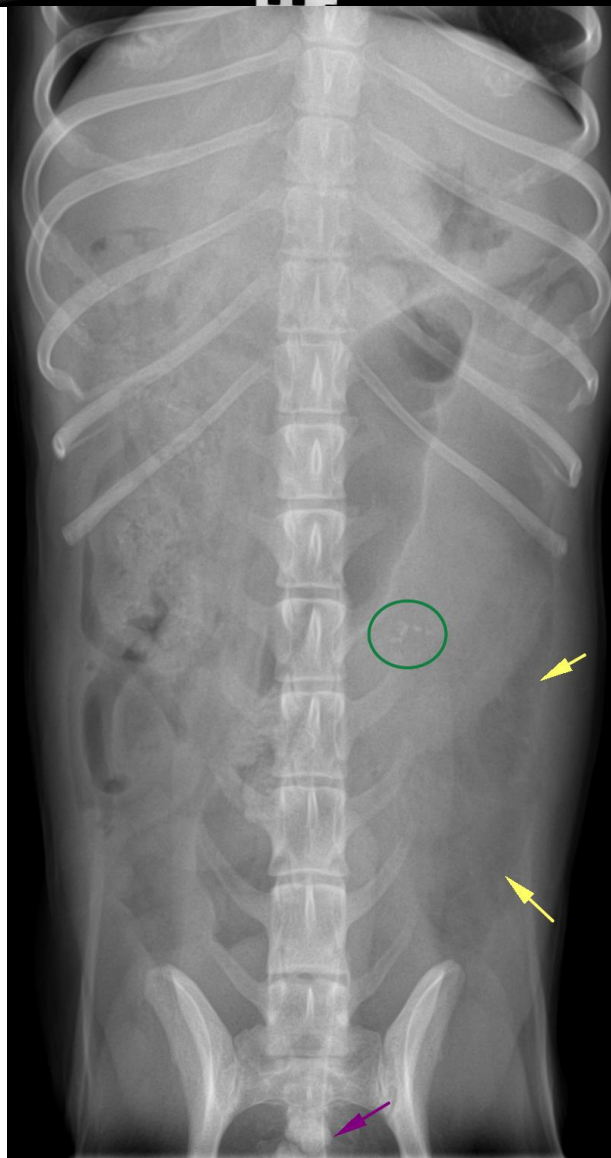
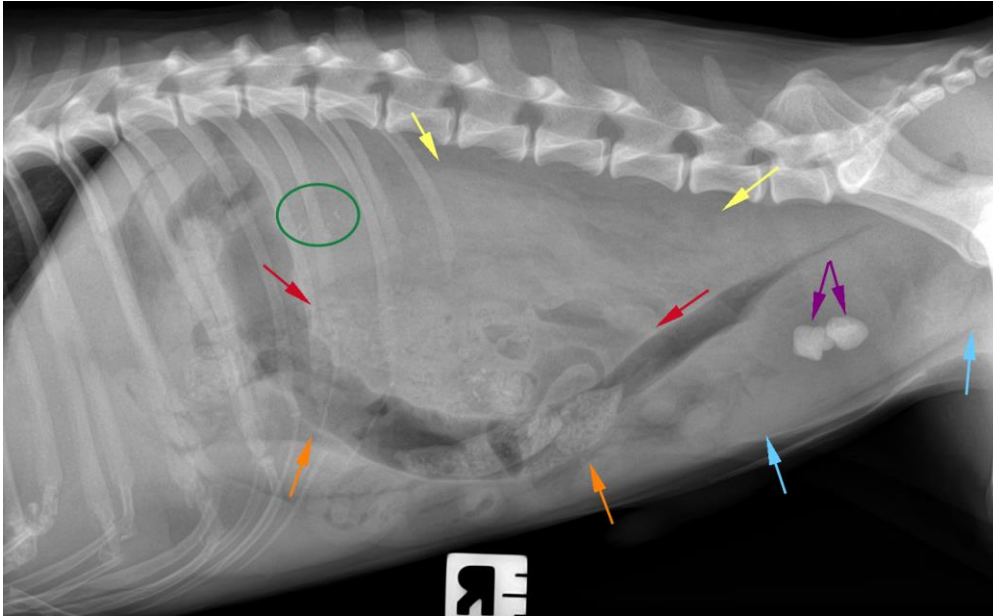


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This report is based on the available history and radiographic interpretation only and not on a physical examination of the patient. It has been prepared specifically for interpretation by the currently licensed and registered veterinary surgeon responsible for the care of this patient.



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Conclusions:

- Severe retroperitoneal effusion with mass effect. Organs of origin for the mass effect would include:
 - Left kidney. Differentials: acute pyelonephritis with rupture of the ureter; transitional cell carcinoma with haemorrhage or rupture of the urinary tract; renal cell carcinoma with haemorrhage
 - Adrenal gland or extra-adrenal neoplasia. Differentials: adenocarcinoma or pheochromocytoma with haemorrhage
 - Retroperitoneal mass. Differentials: haemangiosarcoma is the most likely aetiology).
- Peritoneal effusion, mild and focal around the urinary bladder.
- Cystic calculi.

Additional comments:

The mass effect can be further characterised with abdominal sonogram. The loss of serosal contrast in association with the urinary bladder prioritises the urinary tract however the sonogram can improve identification of tissue of origin. Intravenous (IV) excretory urogram is indicated and can be accomplished with radiography or with computed tomography:

Radiography: 0.5 mLs/kg iodinated contrast medium injected IV with right lateral and ventrodorsal images at Time 0, 15, 30 and 60 seconds and 3 and 5 minutes

Computed Tomography: immediate (arterial), 1-, 3-, 5- and 7-minutes abdominal studies post IV contrast medium administration.

These studies will identify potential masses or rupture of the urinary tract. Assessment of renal cortical function requires quantification of a Glomerular Filtration Rate with nuclear medicine.

The presence of radiopaque nephrolithiasis and cystic calculi suggests partial or complete stone composition including calcium oxalate, silicate or triple phosphate. The size of these cystic calculi is unlikely to result in urethral obstruction as they are unlikely to evacuate from the bladder. In males, smaller stones can pose a high risk for urethral obstruction. Complete assessment of the urinary tract in males necessitates inclusion of the perineum. If urethral calculi are suspected, a lateral view of the caudal abdomen and pelvis with the pelvic limbs flexed at the hip will complete the exam. In cats, an oblique ventrodorsal view can improve visibility of the urethral path by reducing superimposition of the ischium.

Literature:

Heuter, K. J. (2005). Excretory urography. *Clinical techniques in small animal practice*, 20(1), 39-45.

Secrest, S., Essman, S., Nagy, J., & Schultz, L. (2013). Effects of furosemide on ureteral diameter and attenuation using computed tomographic excretory urography in normal dogs. *Veterinary Radiology & Ultrasound*, 54(1), 17-24.



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