

## What is Your Diagnosis

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### Signalment

A 2-year-old female domestic short-haired cat.

### History

The cat had been presented with abdominal distension during the last 4 weeks. Loss of appetite and mild hematuria were observed by the owner.

### Clinical Examination

Large mass with firm consistency can be palpated in the mid-abdominal cavity. Urinalysis showed large

numbers of RBC and WBC (especially neutrophils). Blood examination revealed severe anemia and leukopenia with an increase of the renal panel values (2.6 mg/dL creatinine and 61 mg/dL urea nitrogen)

### Radiographic Examination

Abdominal radiographs of the right lateral and ventrodorsal views were taken. Excretory urography (intravenous pyelography) was performed to evaluate the morphology of kidney and ureter.



**Figure 1. A, B.** Plain right lateral and ventrodorsal abdominal radiographs.

**Figure 2. A, B.** Right lateral and ventrodorsal excretory urographs taken 5 minutes after an intravenous injection of contrast medium (Iohexol 800 mgI/kg).

Give your diagnosis and turn to the next page.

## Radiographic findings

Plain radiographs (Figs. 1 A, B) showed abnormal shape and size of kidneys. Medioventral displacement of both descending duodenum and ascending colon was detected. Ventral displacement of the small intestine was also seen due to abnormal mass. Excretory urographs (Figs. 2 A, B) presented homogenous radiopacification of

renal parenchyma on both sides. The shape and size of renal pelvis and renal diverticula of both kidneys could not be identified due to a depression of an enlarged renal parenchyma. The left ureter was normal in size (Fig. 3), without any signs of obstruction, while the right ureter could not be detected.



**Figure 3.** Normal left ureter in ventrodorsal excretory urograph (arrows)

## Radiographic diagnosis

Renal neoplasia, renal granuloma

## Discussion

Usually renal enlargement remains dorsal in the abdomen because of retroperitoneal fascia preventing ventral displacement. Masses associated with the right kidney usually cause medial and ventral displacement of the descending duodenum and ascending colon. Ventral and left displacement of the jejunum and ileum may also occur. Left renal masses usually cause ventral and medial displacement of the small intestine and descending colon. A differential diagnosis of renal enlargement with abnormal shape should include neoplasia, granuloma, abscess or hematoma.

The use of excretory urography can help to evaluate renal parenchyma during nephrographic phase by observing radiopacity change of parenchyma. The renal collecting system can also be evaluated by the deviation and distortion of renal pelvis and diverticula in pyelographic phase which may be caused by the mass.

## References

Thrall D.E. 2002. The kidneys and ureter. In: Textbook of Veterinary Diagnostic Radiology. 4<sup>th</sup>ed. W.B Saunder company. Pennsylvania. 556- 571.