

## To cut or not to cut:

### Radiographic Evaluation of the Acute Abdomen

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## Obstruction

### -Stomach-

- Positional radiographs
  - 4 views
- Negative/positive contrast gastrogram
  - Small amounts
    - Air or carbonated soda (5ml/kg)
  - Positional radiographs

## Obstruction

### -Intestines-

#### Normal small bowel:

- Dog
  - ≤ 1.6X height of L5
  - ≤ 2X width of a rib
- Cat
  - ≤ 12mm
  - ≤ 2X height of L4

## Obstruction

### -Intestines-

- Partial/Complete
- Ileus:
  - Functional
    - Dilated (1-2X normal)
    - Generalized pattern (all same size)
    - All gas or all fluid
  - Mechanical
    - Greater dilation (> 2X normal)
    - '2 populations'
    - Gas & fluid
    - Stacking

## Obstruction

### -Intestines-

- Linear foreign body
  - Abnormal loops
    - Plication/accordion
  - Abnormal luminal contents
    - Crescent gas patterns

## Obstruction

### -Colon-

- Pneumocolon:
  - Dog: 1-3ml/kg
  - Cat: 20-30ml total

### Obstruction -Urinary Tract-

- Urinary tract
  - Normal kidney (VD view):
    - Dog: 2.5-3.5 X L2
    - Cat: 2.4-3 X L2
  - Excretory urogram
    - Kidneys & ureters

### Obstruction -Urinary Tract-

#### Cystogram

- Positive contrast
  - Location, tears/rupture
  - Dog 5-10ml/kg, cat 2-5ml/kg
- Double contrast
  - Wall lesions & filling defects
  - Dog: 5-10ml iodinated contrast
    - 5ml/kg gas
  - Cat: 3ml iodinated contrast
    - 2-3ml/kg gas

### Obstruction -Urinary Tract-

- Urethrogram
  - Trauma, abnormal cranial bladder
  - Masses, calculi
- Dogs
  - 10-30ml
- Cats
  - 5-10ml

### Organ Displacement -Diaphragmatic Hernia-

1ml/kg  
If abd fluid,  
2ml/kg



### Rupture

- GI
  - Free gas
  - Peritoneal effusion
- Urinary tract
  - Peritoneal effusion
  - Retroperitoneal effusion

### Rupture = 'Free' Air

- Gastric/intestinal perforation
  - Gas seen:
    - Adjacent to diaphragm
    - Sharply-angled bubbles between SI loops
    - Outlining serosal surfaces
  - \*\*Post-sx: can persist for 3 weeks\*\*

### Rupture = 'Free' Air

- Small amounts difficult to see
  - Horizontal beam
    - Position 10 min prior
  - VD (left lateral recumbency)
  - Lateral (dorsal recumbency)

### Rupture = 'Free' Peritoneal Fluid

- Rupture:
  - Urinary bladder
  - Distal ureter
  - Proximal urethra
- Other organ rupture

### 'Free' Retroperitoneal Fluid

- Rupture:
  - Kidney
  - Proximal ureter
  - Distal urethra