



Costipazione o stranguria?  
L'unione fa la forza



Diagnostic Mindset



Giliola Spattini  
DVM, PhD, DECVI

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Objectives

- Radiology is the best modality for a patient with constipation
- Ultrasound is best if stranguria is present but often positive urethrography is needed
- What should we select?



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Tigro, Europeo, MN, 6 years

- Lethargic
- Not eating
- Not sure if He is pooing



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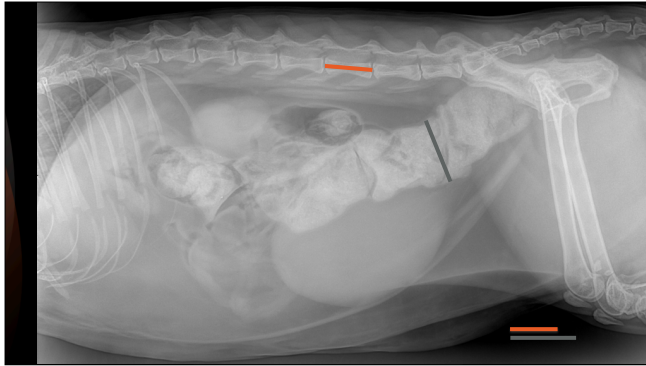
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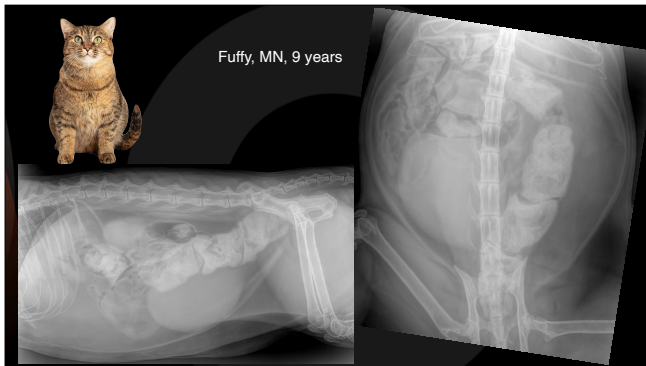
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Fuffy, MN, 9 years

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Abby, Bloodhound, FI, 4 months

- Two days of watery diarrhea progressed to hemorrhagic
- Small worms in the stool
- Today anorexic but still active

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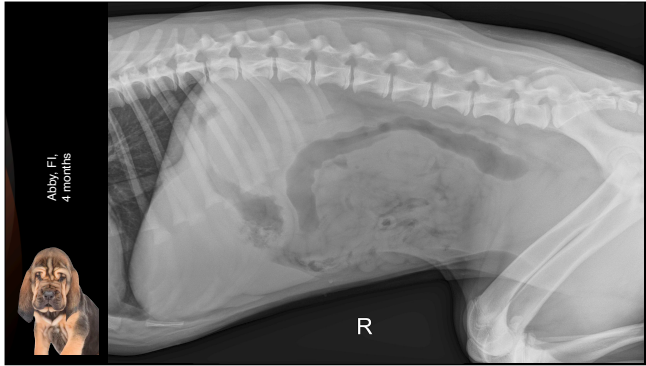
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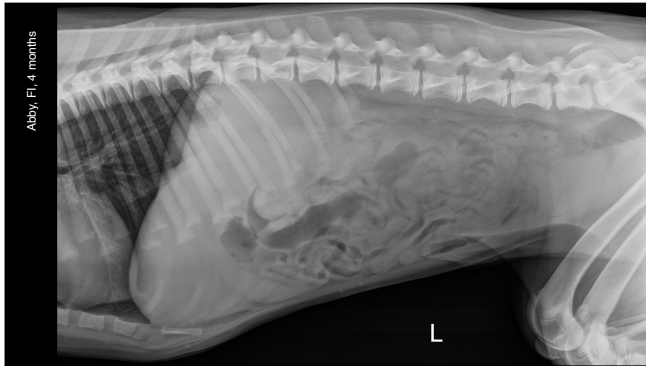
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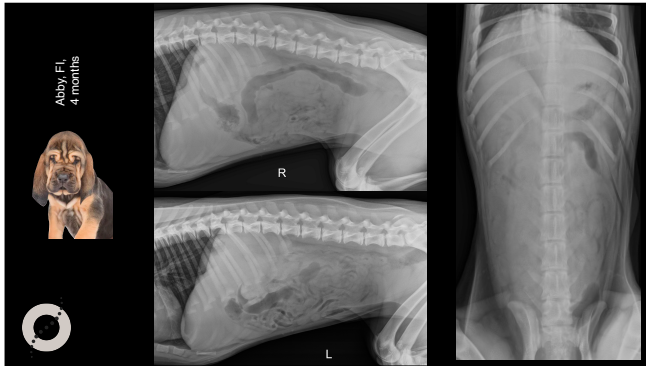
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Abby, Bloodhound, FI, 4 months

- More active under fluid
- One bout of hemorrhagic stools
- Recheck two hours later



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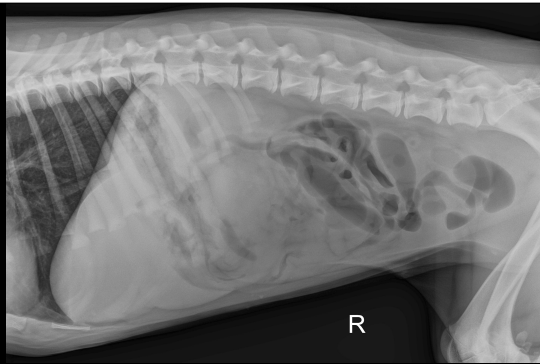
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Abby, FI,  
4 months  
Two hours later



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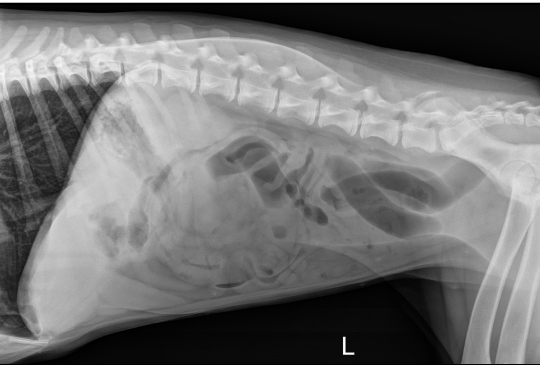
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Abby, FI,  
4 months  
Two hours later



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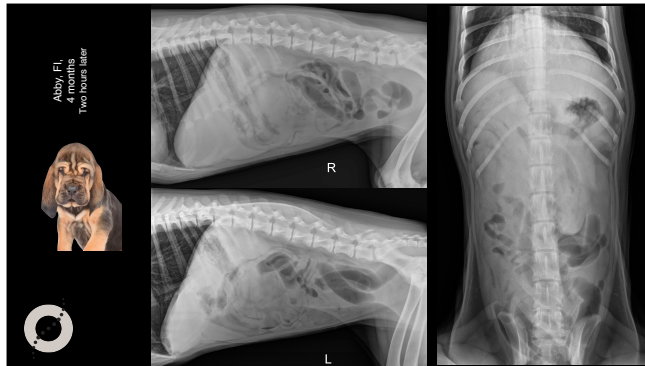
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Your evaluation

- Is there a foreign body?
- Is there gastroenteritis?
- Is there a gastrointestinal occlusion?



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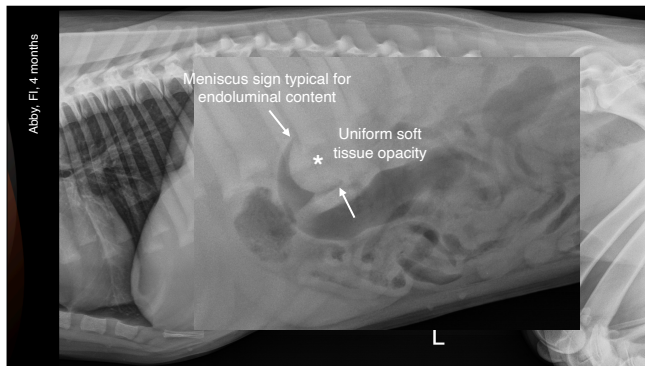
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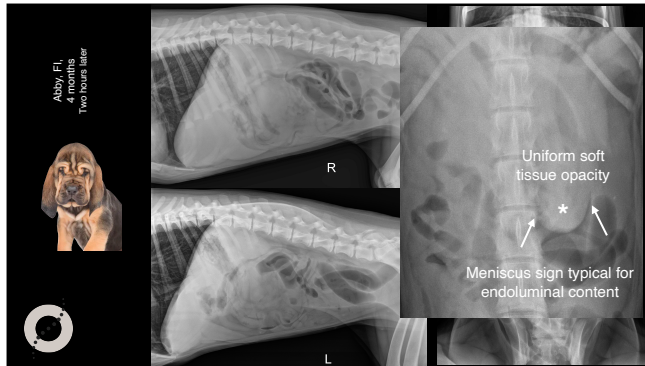
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Key points

- Typical clinical signs
- Meniscus sign
- Soft tissue opacity



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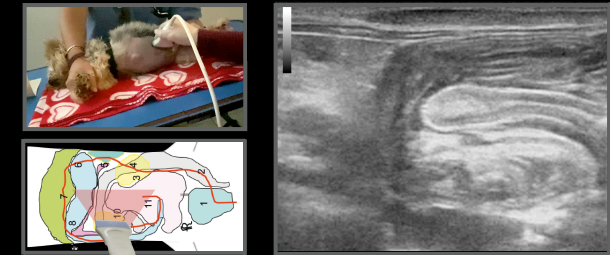
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Abby, FI, 4 months

Another patient, to show the position of the probe

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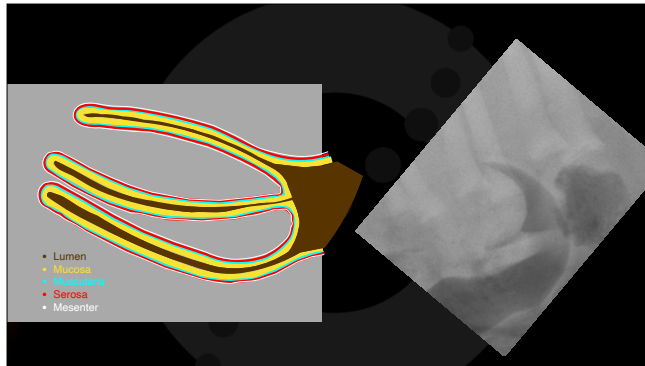
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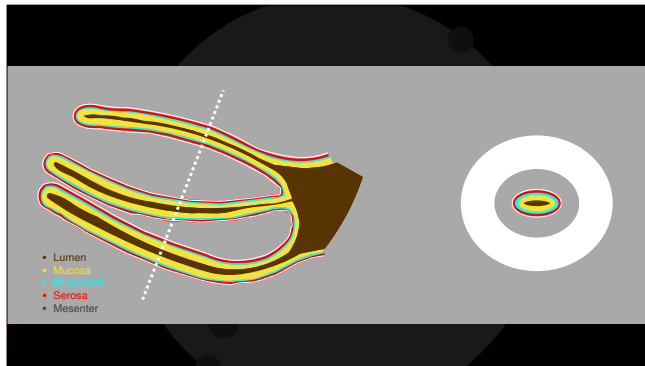
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Scout, English Setter, MI, 2 years

- Dysorexia
- Eat grass
- Generalises tremor
- Abdominal pain




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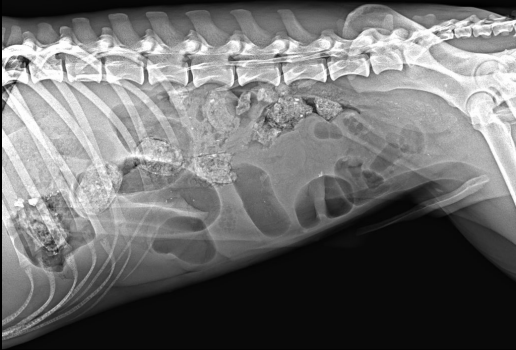
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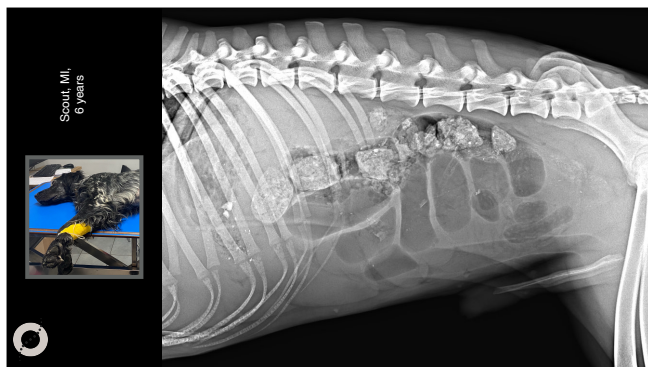
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[illegible][illegible]

**Suspected acute hepatitis  
or reactive hepatitis**





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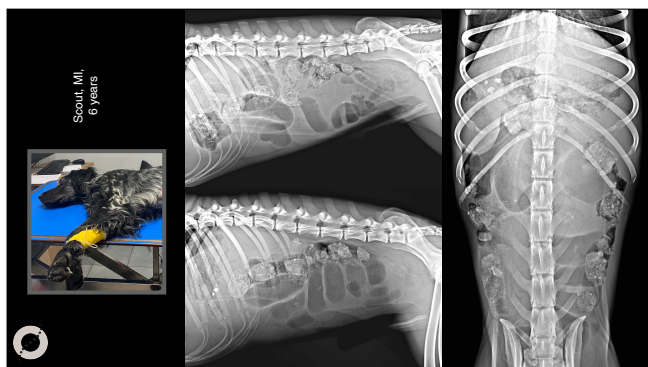
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Your evaluation

- Is there a foreign body?
- Is there gastroenteritis?
- Is there a gastrointestinal occlusion?



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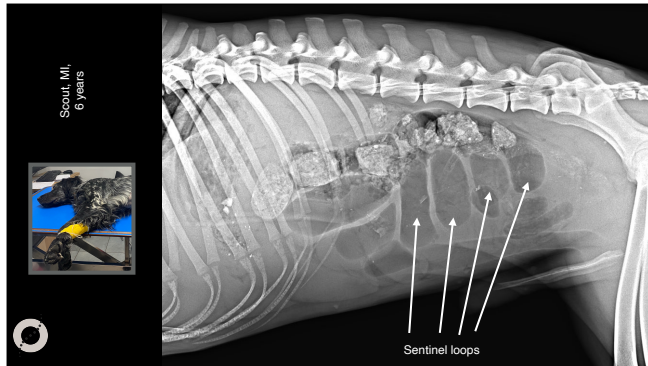
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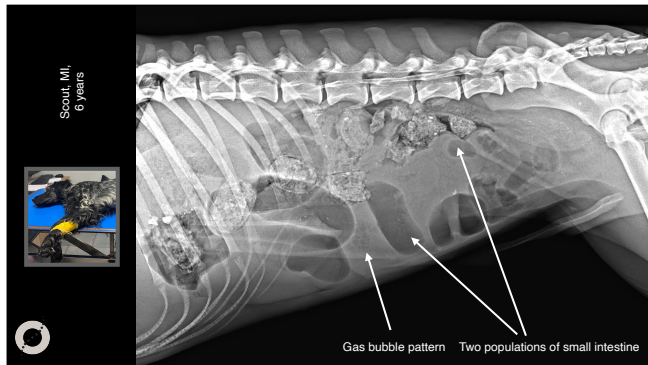
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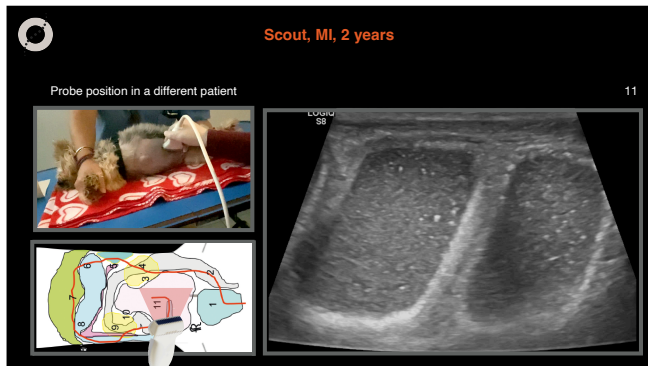
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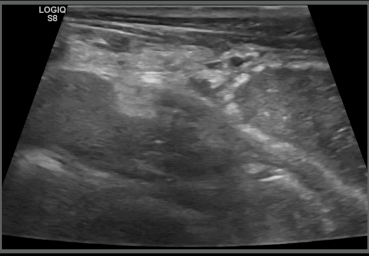
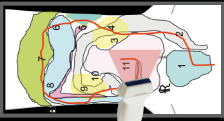

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Scout, MI, 2 years

Probe position in a different patient

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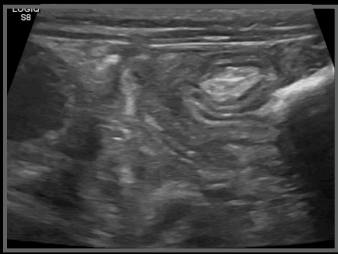
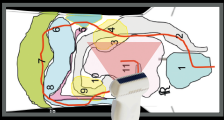

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Scout, MI, 2 years

Probe position in a different patient

7-11



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Scout, MI, 2 years

Probe position in a different patient

7-11



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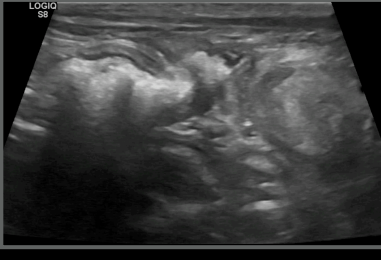
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Scout, MI, 2 years

Probe position in a different patient

7-11

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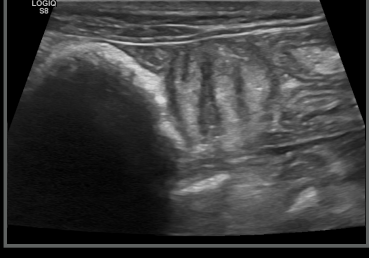
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Scout, MI, 2 years

Probe position in a different patient

7-11

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Your evaluation

- Is there an intestinal foreign body?
- Is there intussusception?
- Is there acute gastroenteritis?



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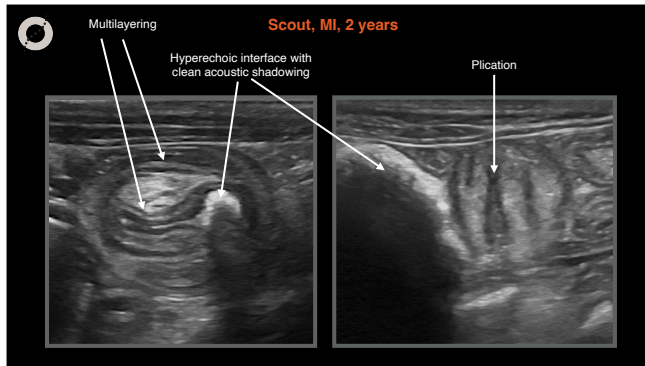
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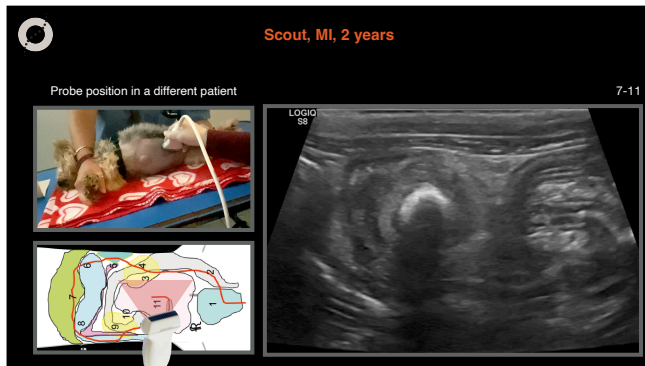
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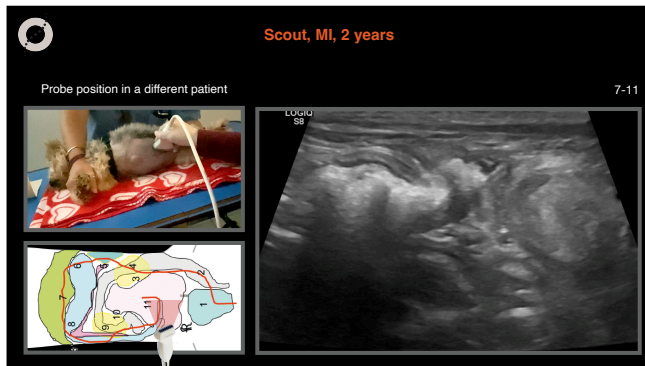
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## Scout, English setter, MI, 2 years

### Ultrasonographic diagnoses:

- Acute gastroenteritis
- Linear foreign body
- Intussusception
- Minimal abdominal effusion-reactive peritoneum



### How to arrive to Conclusions:

- PE examination
- Blood works
- Ultrasonographic findings
- Literature



Review > Top Companion Anim Med. 2019 Dec;37:100360. doi: 10.1016/j.tcam.2019.100360. Epub 2019 Sep 11.

## Current Views in the Diagnosis and Treatment of Intestinal Intussusception

Michail N Patsikas <sup>1</sup>, Lysimachos G Papazoglou <sup>2</sup>, George K Paraskevas <sup>3</sup>

Affiliations + expand

PMID: 31837757 DOI: 10.1016/j.tcam.2019.100360

Intestinal intussusceptions most often occur in young dogs and cats. Common locations for intestinal intussusceptions include enterocolic, enterenteric or colocolic. Ultrasonography is highly reliable for diagnosing of intussusception and for prediction of its reducibility. Abdominal structures that may mimic intussusception can be seen ultrasonographically. Intussusceptions is a surgical emergency. Immediate stabilization of the animal followed by manual reduction or intestinal excision of the affected intestine through midline celiotomy are required. Recurrence is a common postsurgical complication. Enteroplication may be considered for recurrence prevention but is not without complications. Prognosis is good in uncomplicated cases.

ORIGINAL ARTICLE

Veterinary Surgery, 2020;1–9.






WILEY

### Clinical findings and outcomes of 153 dogs surgically treated for intestinal intussusceptions

**Results:** Dogs had a median age of 10 months (range, 2–156), and the most common location for intussusception was ileocolic (66/153 [43%]). Most cases had no identifiable cause (104/153 [67%]). Intestinal resection and anastomosis (IRA) was performed in 129 of 153 (84%) dogs; enteroplication was performed in 28 of 153 (18%) dogs, including 13 with and 15 without IRA. **Intraoperative complications occurred in 10 of 153 (7%) dogs, all involving intestinal damage during attempted manual reduction.** The median duration of follow-up after discharge was 334 days (interquartile range, 15–990; range, 1–3302). **Postoperative complications occurred in 53 of 153 (35%) dogs, including 22 of 153 (14%) with severe (grade 3 or 4) events.** Diarrhea, regurgitation, and septic peritonitis were the most common postoperative complications; intussusception recurred in four of 153 (3%) dogs, all within 72 hours postoperatively. **Fourteen-day postoperative mortality rate was 6%.**

**Conclusion:** Surgical treatment of intestinal intussusception was curative in most dogs, even when an underlying cause was not identified. **Surgical complications were common, including a 14% risk of life-threatening short-term complications.**

**Clinical significance:** Surgical treatment of intestinal intussusception offers an excellent prognosis, but the potential life-threatening complications should be considered.


Philippe Chagnon Laroux DVM<sup>1</sup> | Anest Singh DVM, DVM, DACVSA<sup>1</sup>  | Michelle A. Glaffrida VMD, MSCE, DACVSP<sup>2</sup>  | Galina Hayes PhD, DACVECC, DACVSP<sup>3</sup>  | James Franklin Moyer BS<sup>4</sup> | Janet A. Grimes DVM, MS, DACVSA<sup>5</sup>  | Jeffrey Hunge DVM, DACVSP<sup>6</sup> | Chiara Curcillo DVM<sup>7</sup> | Christopher B. Thomson DVM<sup>8,9</sup>  | Philipp D. Mayhew BVMSA, DACVSA<sup>2</sup> | Rosa Bernstein DVM<sup>2</sup> | Christopher Dominic DVM<sup>2</sup> | Kelley Thiemann Mankin DVM, DACVSA<sup>2</sup> | Penny Regier DVM, MS, DACVSA<sup>2</sup> | J. Brad Case DVM, MS, DACVSA<sup>2</sup> | Shieri Araki DVM, PhD, DACVSA<sup>2</sup> | Mathieu Gattineau DVM, PhD, MS, DACVSA, DVM, DACVSP<sup>10</sup> | Julian M. Lipink DVM, MVECClinical, DACVSA, DACVSA-SA, DECVS, ACVS Founding Fellow in Surgical Oncology<sup>11</sup> | Charles Bruce DVM, DVM, DACVSP<sup>11</sup>

	Manual reduction	MR + enteroplication	Resection + Anastomosis
Complications	MR, n = 10, n (%)	MR + EP, n = 9, n (%)	IRA, n = 105, n (%) <sup>a</sup>
Grade 3—Severe complication <sup>e</sup>			
Septic peritonitis due to intestinal dehiscence	0	0	4 (4)
Recurrent intussusception	0	2 (22)	1 (1)
Intestinal obstruction due to adhesions	0	0	2 (2)
Colonic torsion	1 (10)	0	1 (1)
Colonic stricture	0	0	1 (1)
Cardiopulmonary arrest due to hypotension	0	0	1 (1)
Grade 4—Death <sup>f</sup>			
Septic peritonitis due to intestinal dehiscence	0	0	3 (3)
Septic peritonitis due to original intussusception	0	0	1 (1)
Septic peritonitis due to mesenteric abscess	0	0	1 (1)
Septic bile peritonitis due to iatrogenic injury	0	0	1 (1)
Recurrent intussusception	0	0	1 (1)
Cardiopulmonary arrest due to pneumonia	0	0	1 (1)
Mesenteric volvulus	0	1 (11)	0
Death at home due to unknown	0	0	1 (1)

Scout, English setter, MI, 2 years

Conclusions:

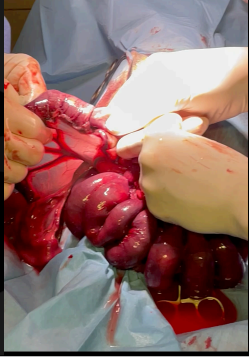
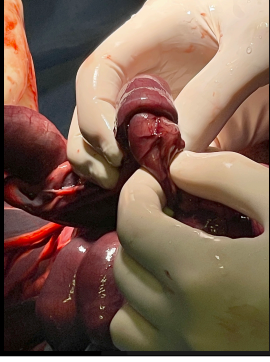
- Intestinal intussusception with linear foreign body and severe acute enteritis
- Minimal peritonitis and abdominal effusion



Next steps:

- Laparotomy

Scout, M, 6 years



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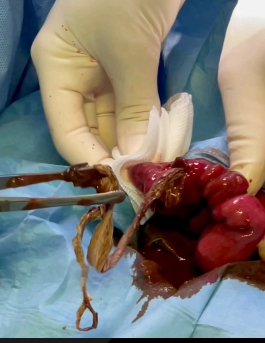
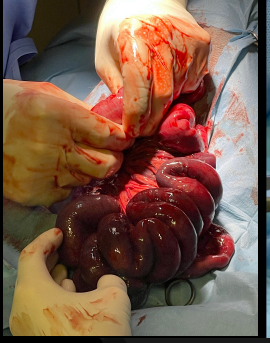
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Scout, M, 6 years



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Scout, M, 6 years



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Scout, English setter, MI, 2 years

- Plastic bag containing pig bones



Scout, English setter, MI, 2 years

- Intussusception on a linear foreign body
- High risk of surgical dehiscence due to intestinal wall distress

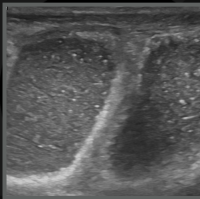


Scout, English setter, MI, 2 years

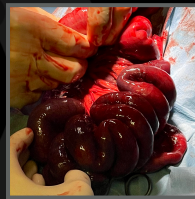
Radiology



Ultrasound



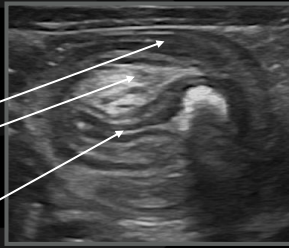
Surgery





### Key Points

- Multilayered appearance check on transverse and longitudinal scans
- Intussusceptient thickened and edematous wall, loss of layering
- Hyperechoic, scattering artefact mesenter
- Intussusceptum normal intestinal layering

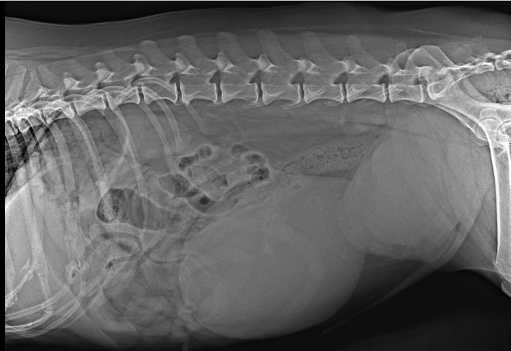


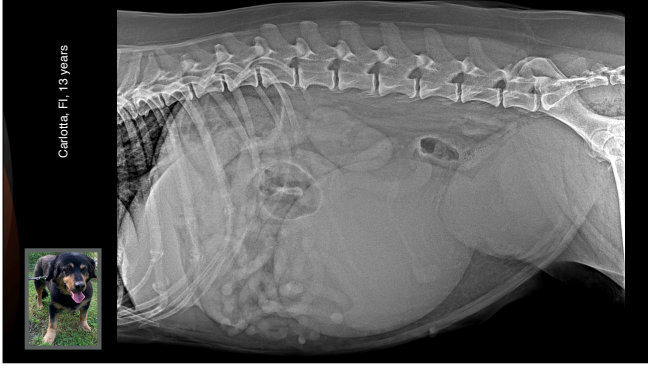
### Carlotta, Mongrel, FI, 13 years

- Tenesmus and stranguria from two days
- Vomiting from the morning
- For the last months frequent urination, small amount



Carlotta, FI, 13 years





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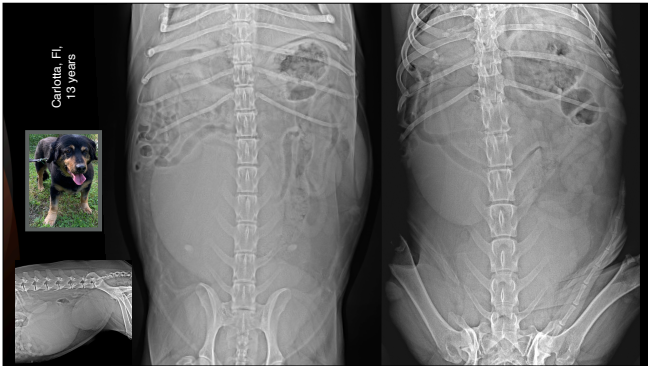
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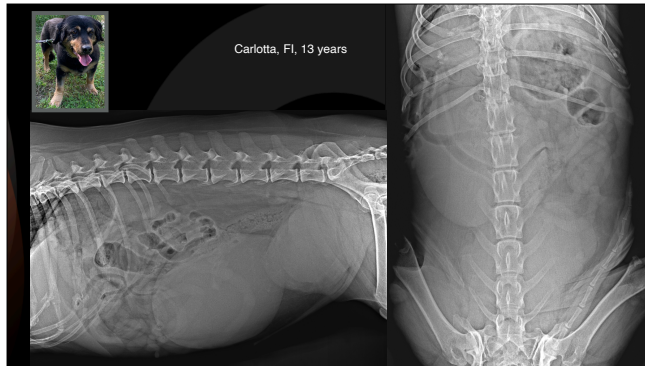
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Carlotta, FI, 13 years

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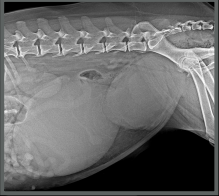
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Carlotta, Mongrel, FI, 13 years

Radiographic diagnoses

- Large caudal abdominal mass... or two?
- Dorsal displacement of the distal colon
- Urethra? Uterus?
- Mildly decreased peritoneal detail



Next steps:

- Positive ascending urethrography

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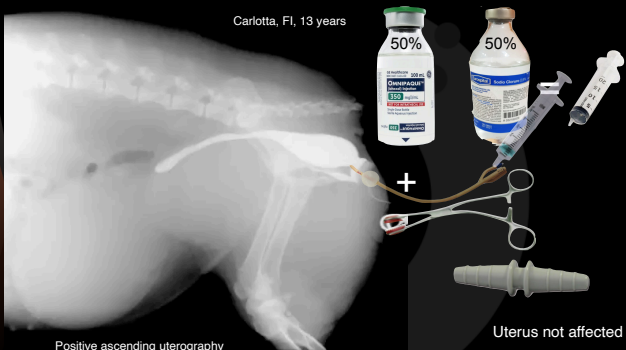
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Carlotta, FI, 13 years



Positive ascending uterography

Uterus not affected

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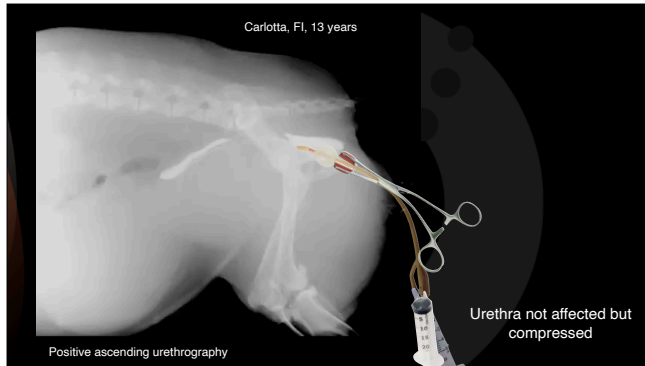
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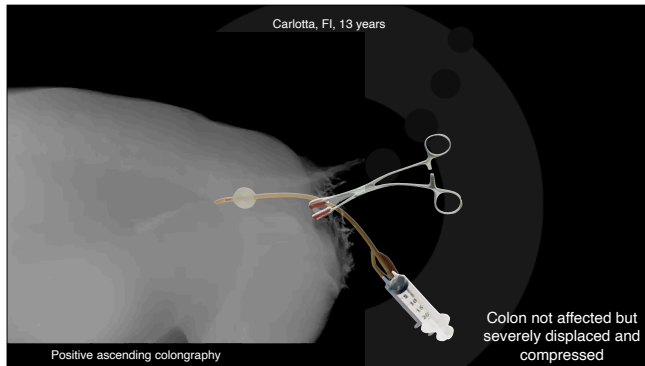
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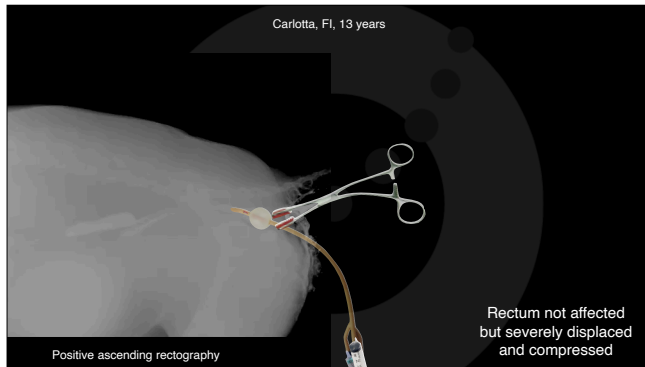
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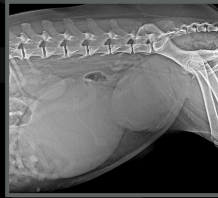
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Carlotta, Mongrel, FI, 13 years

Radiographic post-contrast diagnoses

- Large caudal peritoneal abdominal mass
- Not arising from uterus, urethra, colon, rectum



Next steps:

- CT

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Carlotta, Mongrel, FI, 13 years



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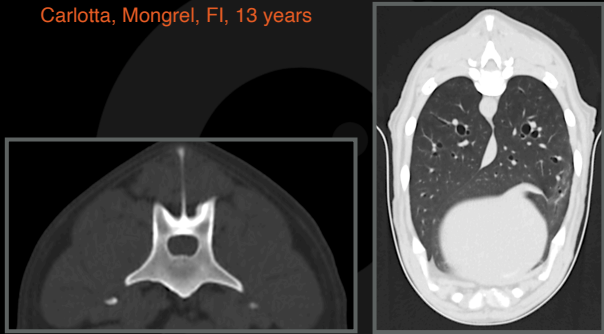
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Carlotta, Mongrel, FI, 13 years



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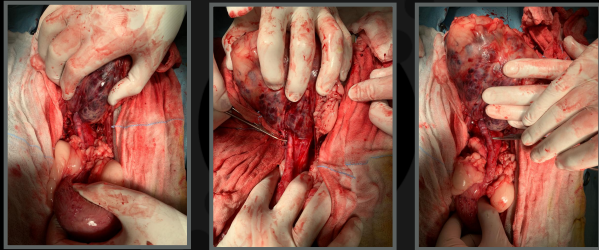
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Carlotta, Mongrel, FI, 13 years



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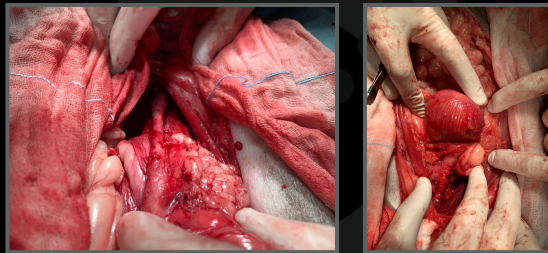
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Carlotta, Mongrel, FI, 13 years



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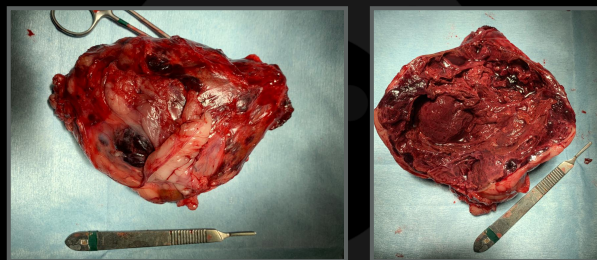
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Carlotta, Mongrel, FI, 13 years



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Carlotta, Mongrel, FI, 13 years

- January 2020 Surgery
- Two weeks later, chemo
- May: removed splenic mass
- June: recurrent tenesmus



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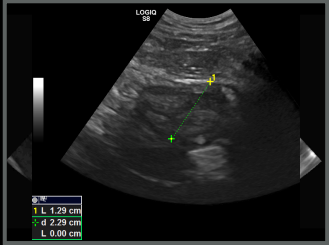
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Carlotta, FS, 13 years and half

- Radiotherapy

Probe position in a different patient



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Carlotta, FS, 13 years

Control after radiotherapy



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Carlotta, Mongrel, FI, 13 years

- August 2020 panting and coughing



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Carlotta, Mongrel, FI, 13 years

- August 2020, panting and coughing: chemo
- October 2020: severe back pain, not responding to treatment



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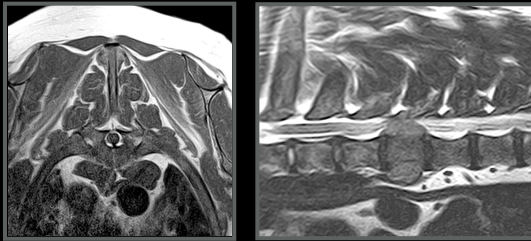
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Carlotta, Mongrel, FI, 13 years



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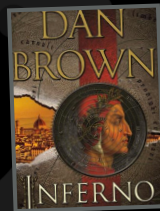
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### Conclusions

- Clinical examination should guide us to decide the best modality
- Sometime both radiology and ultrasound are needed



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Thank you



Diagnostic Mindset

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