

# Pattern ecografici addominali: tutto chiaro o solo rumore?

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Diagnostic Mindset



Clinica Veterinaria  
CASTELLARANO

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## Objectives

- Ultrasound can be challenging, but some patterns are typical
- Can we understand what we are seeing?



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## Kiwi, York Shire, FS, 11 years

- PU/PD last three months
- Mildly lethargic
- Elevated liver enzymes



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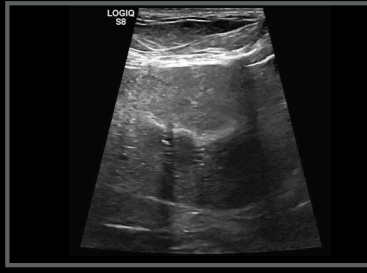






Kiwi, FS, 11 years

9-8-10 long



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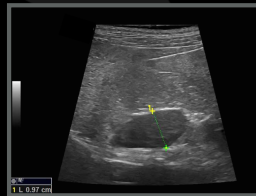
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Kiwi, FS, 11 years

Ultrasonographic diagnoses:

- Hepatopathy
- Nefropathy
- Pancreopathy
- Adrenomegaly



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How to arrive to Conclusions:

- PE examination
- Blood works
- Ultrasonographic findings
- Literature



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## VARIABILITY IN THE ULTRASONOGRAPHIC APPEARANCE OF THE PANCREAS IN HEALTHY DOGS COMPARED TO DOGS WITH HYPERADRENOCORTICISM

L. ABBIGAIL GRANGER, MICHAEL HILFERTY, TAYLOR FRANCIS, JÖRG M. STEINER, LORRIE GASCHEN

Anecdotally, an unusually hyperechoic pancreas can be found in seemingly healthy dogs on ultrasound examination and the prevalence and clinical significance of this finding is unknown. The objective of this study was to describe the prevalence of a hyperechoic and/or heterogeneous pancreas in healthy dogs and correlate these findings to weight, age, and body condition score (BCS). An additional objective was to describe the prevalence of a hyperechoic and/or heterogeneous pancreas in dogs with hyperadrenocorticism and compare this to the healthy dogs. Pancreata of 74 healthy dogs were evaluated prospectively and pancreatic echogenicity and echotexture were graded. Each dog's age, BCS, and weight were recorded. Dogs were screened for health by physical examination, serum chemistry panel, urine specific gravity, and a canine pancreatic lipase immunoreactivity assay. Pancreatic images for 92 dogs having hyperadrenocorticism were also reviewed and pancreatic echogenicity and echotexture were recorded. The prevalence of pancreatic hyperechogenicity in normal dogs was 7% (5 of 74) and heterogeneity was 40% (30 of 74). No correlation existed between pancreatic echogenicity and weight, age, or BCS ( $P > 0.1$  for all sets). A statistically significant increase in the proportion of dogs having a hyperechoic pancreas was found in the hyperadrenocorticism sample of dogs (40%, 37 of 92,  $P < 0.0001$ ). The underlying cause of pancreatic variability in the few healthy dogs and in dogs with hyperadrenocorticism is unknown and the varying appearance of the pancreas in these samples confounds interpretation of diseases such as chronic pancreatitis. © 2015 American College of Veterinary Radiology.

Ver Radiol Ultrasonol. Vol. 56, No. 3, 2015, pp 540-548.

Kiwi, FS, 11 years

### Conclusions:

- Steroid hepatopathy
- Adrenomegaly / nodule
- Consider to rule out hyperadrenocorticism



### Next steps:

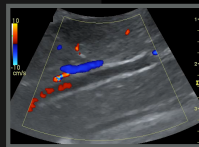
Cortisolo basale e post ACTH LC-MS-MS (due determinazioni)	Det.	Risultato	Intervallo di riferimento	
			min	max
Cortisolo sierico LC-MS-MS (µg/dl) :	1	2.44	0.29	1.47
Cortisolo sierico LC-MS-MS (µg/dl) :	2	24.34	1.74	5.29

Operazioni	Qty	Descrizione	Confezione	Posologia
<span style="color: green;">✔</span> <span style="color: red;">✘</span>	1	VECTORIN 10	Sc di 30 capsule da 5 mg	Una capsula al mattino ad orario fissa con il cibo

## Key points How to differentiate hyperechoic liver diseases in dogs

- Liver parenchyma
  - Homogeneous → Non-specific reactive H
  - Not homogeneous → Endocrinopathy
  - Chronic degenerative changes VS fat infiltration → Hyperadrenocorticism
  - Chronic hepatitis → Chronic hepatitis
- Intestine
- Pancreas
- Kidney
- Adrenals
- Signs of portal hypertension or hepatic arterialisation?
  - Chronic hepatitis leading towards cirrhosis







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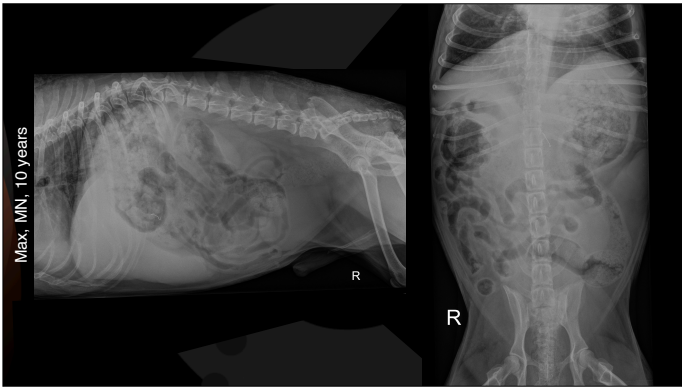
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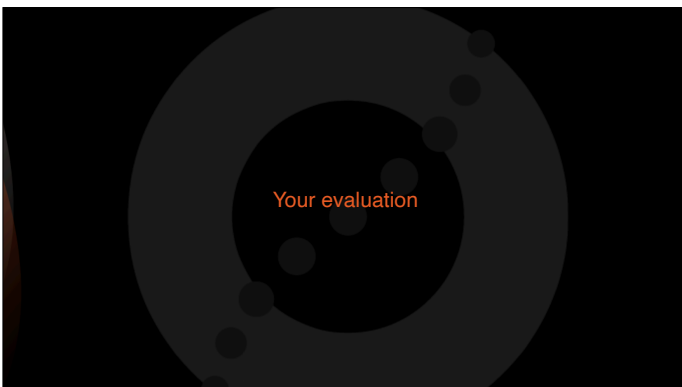
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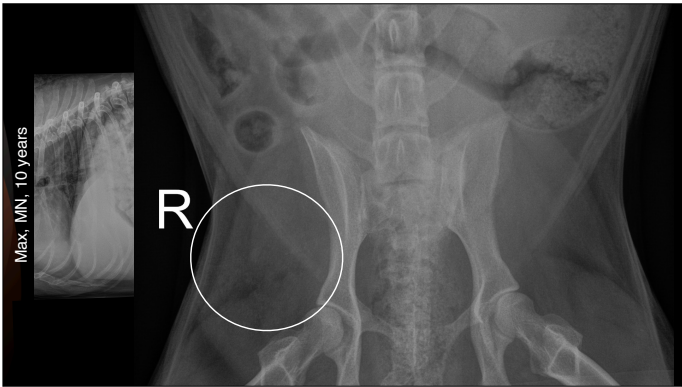
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Most common causes for Calcinosis Cutis

Secondary to a previous damage

Secondary to high level of calcium and P in the serum eg renal failure

Steroid injection

Unknown causes



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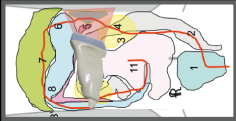
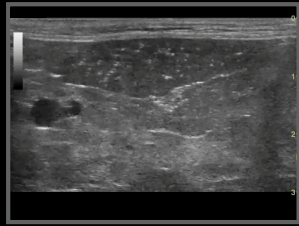
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Lilly, FS, 10 years



Probe position in a different patient

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Leon, Maremman, MI, 9 years

- Weak
- Anorexic
- Fast respiratory rate



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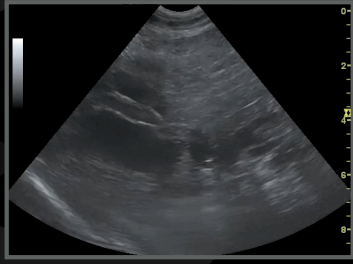
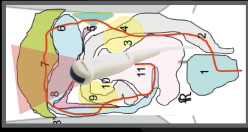
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Leon, MI, 9 years

Probe position in a different patient

7-8

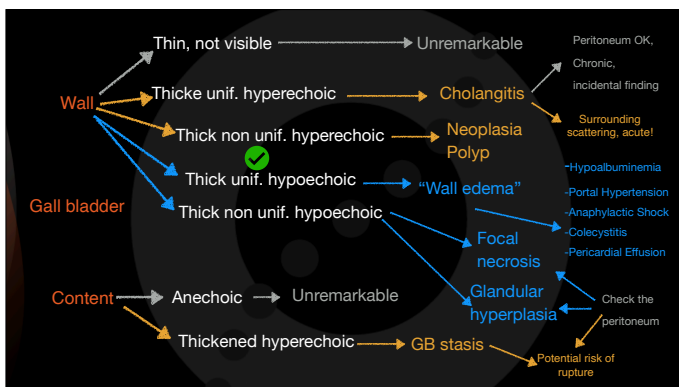
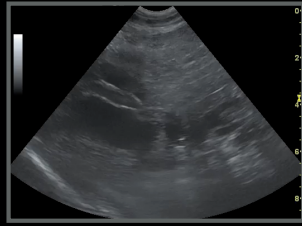


Leon, Maremman, MI, 9 years

Gall bladder wall: Thickened  
Hypoechoic

Content: Anechoic

Surrounding peritoneum: Effusion,  
no scattering





Leon, Maremman, MI, 9 years

Ultrasonographic diagnoses:

- GB wall "edema"
- Pericardial mass



- Drained
- The owner refused pericardiectomy

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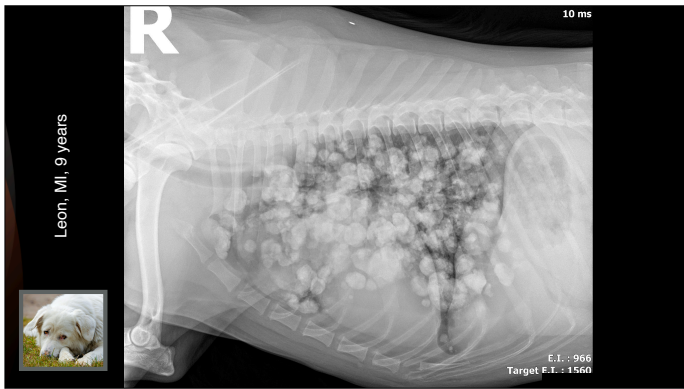
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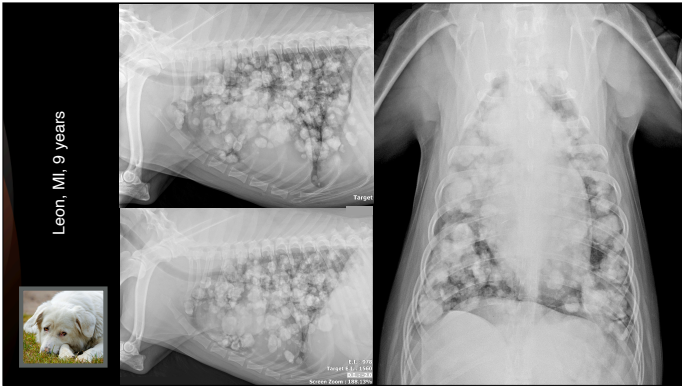
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Leon, Maremman, MI, 9 years

Radiographic diagnoses:

- Several mineralized irregular lung nodules
- Dyspneic one month later

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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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Abby, Bloodhound, FI, 4 months

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



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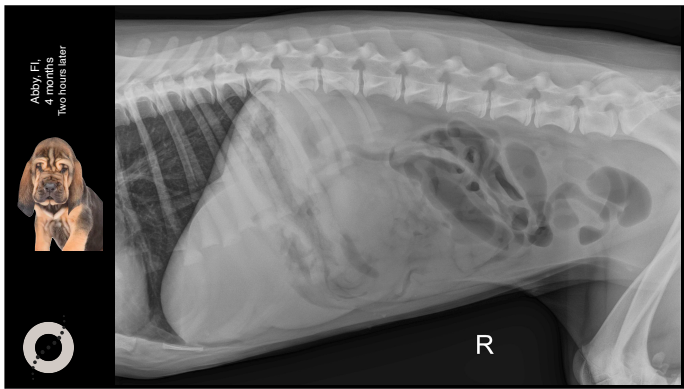
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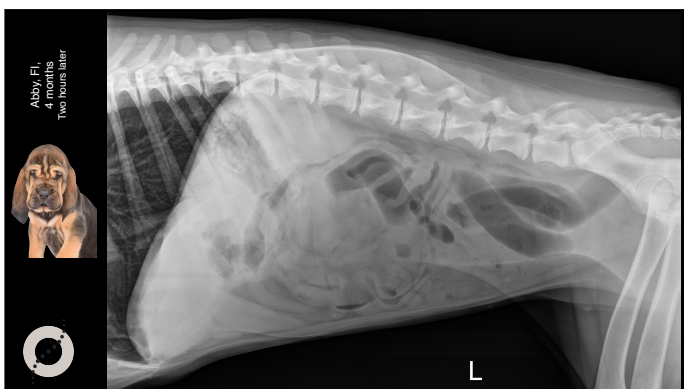
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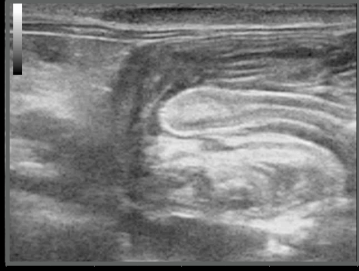
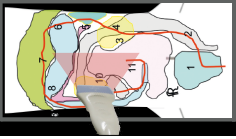




Abby, FI, 4 months

Another patient, to show the position of the probe

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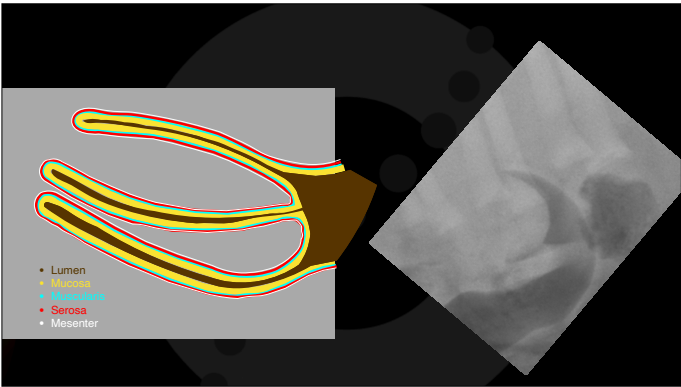
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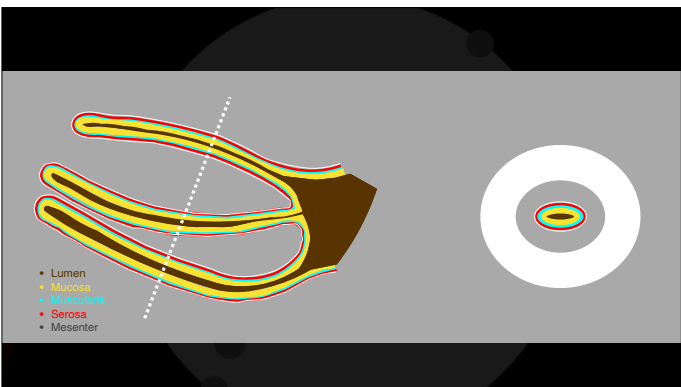
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## Conclusions

- Recognizing specific patterns enables a more targeted and accurate ultrasound interpretation
- Radiology can support and confirm the diagnosis



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Thank you



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[www.diagnosticmindset.com](http://www.diagnosticmindset.com)

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