
2026
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VETERINARY MEETING & EXPO

Diagnosing and Managing Adrenal Tumors

The Bill and Patty Show

CONFLICT OF INTEREST DISCLOSURE

Dr. Lathan: Consulting for Idexx, Boehringer Ingelheim, and ScoutBio. Honororia from Idexx, BI, and Dechra.

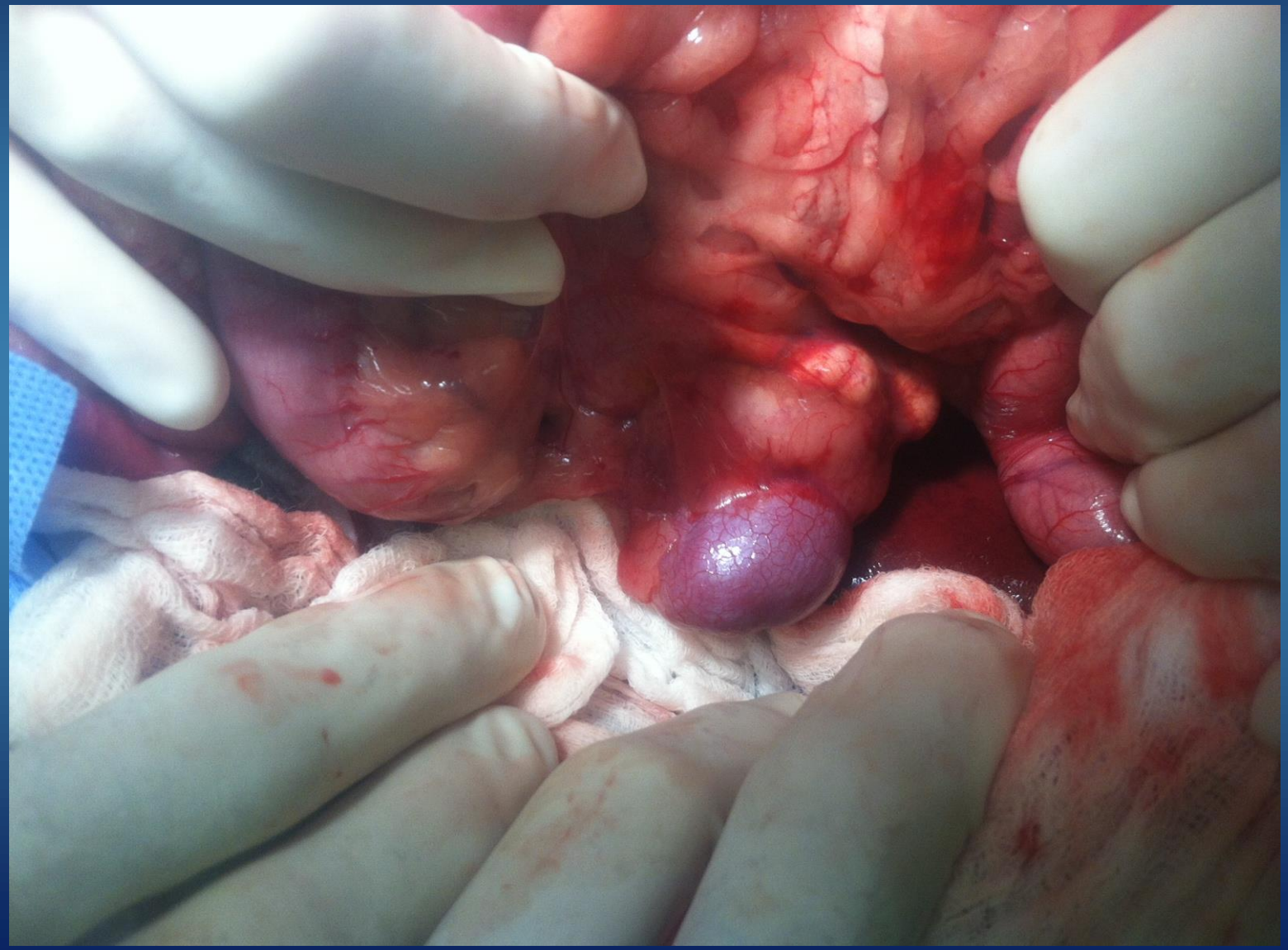
Dr. Saxon is a full-time IDEXX employee.

ADRENAL TUMORS

- Dogs with clinical signs vs. Incidentalomas
- Differentials
- Work up for incidentaloma
- Stabilization
  - Hypertension
  - Hypokalemia
  - Hemoabdomen
- Diagnostics
- Definitive treatment
- Cases

SO, THE DOG VOMITED 3 TIMES AND I FOUND AN ADRENAL MASS. WHAT DO I DO???

INCIDENTALOMAS



Clinical findings in dogs with incidental adrenal gland lesions determined by ultrasonography: 151 cases (2007–2010)

Audrey K. Cook, BVM&S; Kathy A. Spaulding, DVM; John F. Edwards, DVM, PhD

- Incidental adrenal gland lesion
  - No reported clinical signs
- 4% of dogs that got U/S
  - (9% on CT)
- Median width: 12 mm (3-60 mm)
  - 80% <20 mm
    - All benign
- 30% >20 mm malignant
  - Of those that had adrenalectomy
- 29% had non-adrenal malignant lesions (unrelated)

Take away:
Size matters
Suspect malignancy if >20 mm.

WHAT COULD THEY BE?

- Primary Tumor
  - Adrenocortical adenoma (cortisol, aldosterone, other)
  - Adrenocortical carcinoma (same)
  - Adrenal medullary tumor (norepi, epi…)
- Metastasis
  - Lymphoma
  - SCC
  - Melanoma
  - ANYTHING

How do you figure it out? Approach:

- Confirm presence (U/S or CT)
- Identify
  - Hormonally active, or not?
  - Metastatic lesion, or not?
    - 21% of metastatic neoplasias in dogs and 15% in cats affect adrenals
  - Invasive, or not?
- Treat
  - Medical
  - Surgery
  - Observation

FUNCTIONAL: WHICH HORMONES?

- Cortisol
  - AT
  - PDH
- Catecholamines (norepinephrine, epinephrine)
- Aldosterone (cat)
- Sex hormone/cortisol precursor?

NON-FUNCTIONAL: WHAT COULD THEY BE?

- Hormonally silent adenoma, carcinoma, or hyperplasia
- Metastasis
- Hematoma/adenoma/granuloma/abscess
- Lipoma

Hormone Production

FUNCTIONAL

- Cortisol – adrenal cortex
  - AT
  - PDH
- Aldo – adrenal cortex
  - PHA (cat)
- Norepi/epi – adrenal medulla
  - Pheo
- Sex hormone/cortisol precursor?

NON-FUNCTIONAL

- Hormonally silent adenoma, carcinoma, or hyperplasia
- Metastasis
- Hematoma/granuloma/ abscess
- Lipoma

FUNCTIONAL OR NON: CLUES FROM…

- History, physical exam
  - PU/PD, panting, collapse, GI signs,
  - Skin/fur changes
  - HYPERTENSION (pheo/aldosterone) – ocular signs
- Clinicopathologic changes
  - USG? ALP? ALT? K^+?
- (Imaging?)
  - Size
  - Invasiveness
  - Thoracic mets

Ultrasound/CT

- Metastasis
  - Primary tumor identified?
- Size
  - Larger = more likely carcinoma
  - Study dependent: >2 cm, >5 cm
- Invasive
  - More likely carcinoma, decreased survival
  - Invasion may be missed, especially on U/S

THEN WHAT?

- Depends on clinical picture, labs, imaging results
- If it's a dog
  - Cushing's testing
  - Urine metanephrine:creatinine ratio
- If it's a cat
  - Aldosterone concentration
- If pet non clinical, mass <2-5 cm, noninvasive
  - Re-image 1-3 months initially?

SHOULD I STICK A NEEDLE IN IT?

SAFETY FINE-NEEDLE ASPIRATION OF ADRENAL LESIONS IN DOGS: 50 CASES

PEY ET AL, JVIM, 2020

- Retrospective—survey sent to boarded radiologists
- 40 did aspirates on adrenals, 98 did not
- 50 dogs, 58 lesions (23 pheos) were aspirated
- 4 complications
  - 3 hemorrhage (1 moderate)
  - 1 death from ARDS (dog also had lar par)
- Cytology conclusive in 73%
- 8 dogs → histopath
  - Cytology confirmed in 5
  - Identified cortex but miscalled adenoma/carcinoma

SO HOW DO YOU TREAT INCIDENTALOMAS?

- Depends on identity and invasiveness
- Remove carcinomas, pheos, and other hormonally active
  - Unless metastasis
- Invasion important
- Identity unknown?
  - >2 cm—more likely malignant; remove
    - May give phenoxybenzamine if concerned about pheo
    - May give dex intra-op and do ACTH stim post-op if suspect carcinoma
  - <2 cm, non-invasive
    - Monitor q1-3 months initially?

SO HOW DO YOU TREAT INCIDENTALOMAS?

- Identity known
  - Surgery (cure)
    - Cushing's, PHA, pheo, other carcinomas (unless mets)
  - Medical management if surgery not an option
    - Invasive, metastasis, unsuitable surgical candidate, $$$
- Identity unknown?
  - >2 cm—more likely malignant; remove
    - May give phenoxybenzamine if concerned about pheo
    - May give dex intra-op and do ACTH stim post-op if suspect carcinoma
  - <2 cm, non-invasive
    - Monitor q1-3 months initially?

I'M NOT DOING THAT SURGERY!
SHOULD I DO ANYTHING PENDING REFERRAL?

PRE-SURGICAL MANAGEMENT

- Optimize condition based on clinical / lab findings
- Control blood-pressure
  - Cushing's – ACEi, amlodipine (dog), amlodipine, telmisartan (cat)
  - PHA – amlodipine
  - Pheo – phenoxybenzamine for 7-14 d before surgery!!!
- Treat hypokalemia (PHA)
  - K gluconate

HYPERTENSION: RENAL OR ENDOCRINE DISEASE IN ≥80%.

- **Cat**

  CKD, hyperthyroidism, primary hyperaldosteronism, glomerulopathy, pheochromocytoma

- **Dog**

  CKD, AKI, Cushing's, diabetes mellitus, glomerulopathy, pheochromocytoma, hypothyroidism (rare)

Cats:
Amlodipine:
<200 mm Hg 0.625 mg SID
≥200 mm Hg 1.25 mg SID

Telmisartan:
2 mg/kg once daily

Dogs:
Benazepril:
0.25-0.5 mg/kg SID
Amlodipine:
0.125-0.25 mg/kg SID
Telmisartan:
1-2 mg/kg SID

WHAT IF SURGERY ISN'T AN OPTION…?

SYLVIA—PLEASE DON'T INCLUDE CASES OR ANYTHING PAST THIS

JAVMA

Outcome in dogs with invasive adrenal gland tumors that did not pursue adrenalectomy

Gabrielle S. Fontes, DVM; Hunter J. Piegols, DVM, DACVS; Janis M. Lapsley, DVM, DACVS; Shay Bracha, DVM, DACVIM; Laura E. Selmic, BVetMed, MPH, DACVS, DECVS*

Department of Veterinary Clinical Sciences, College of Veterinary Medicine, The Ohio State University, Columbus, OH

CIAO PATTY! I MADE SEVERAL VERSIONS OF SOME SLIDES. PICK OR CREATE YOUR FAVE.

- Want to be clear re: would you ever go to sx without endocrine testing. Eg., dog w high alp but no clin signs cush (old dog boring ALT or early Cush…).
  - Funny…Chloe the case I forgot to add says yes…hahaha although sx cut her before I got to all my diagnostics, but dog did great.
- If it's Cush (can other tumors cause enough stress to mess up tests) –and owner says no to surgery – Lysodren better? Tumor growth risk rupture w trilo?
- Also stress common things happen commonly

- Identify common challenges in diagnosing endocrine diseases, including low prevalence, nonspecific signs, and test interference.
- Apply a practical, case-based approach to selecting appropriate endocrine tests and determining optimal timing for testing.
- Interpret endocrine test results accurately, considering potential confounding factors from concurrent disease or medications.