

Challenging & Controversial Case Presentations in Small Animal Reproduction



The Dog & Tom



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Small Animal Reproduction

The Dog & Tom

- Actual cases
- Signalment, history, chief complaint, physical exam findings
- Problem list
- DDX & Diagnostic plan?
- Reproductive pathophysiology, reproduction ultrasound techniques
- Findings, therapy, outcome



Reproductive Cases

“Woodrow”

Sign 9y m Labrador Retriever

HX Healthy, proven male, neutered
4w previously for persistent
erection

CC Prolonged swelling of b.
glandis (5w)

PE Priapism, moderate. Normal
urine stream

PL

1. Chronic priapism, non ischemic

DDX?

P?



Reproductive Cases

“Woodrow”

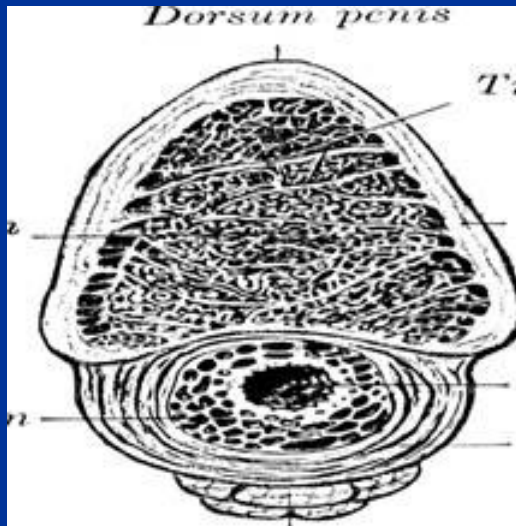
DDX Vascular disorder (AV shunt, hematoma), neurologic disorder (cauda equina), neoplasia, trauma, idiopathic

P MDB, neurologic consultation, **US**



Male Ultrasound: The Penis

- Scanning Technique
- Normal Findings



Ultrasound of Penile Disorders

Disorders ~ Signs

- Priapism
- Phimosis
- Paraphimosis
- Balanoposthitis
- Trauma

Ultrasound



Reproductive Cases

“Woodrow”

Neurologic exam

- Subtle LS discomfort

Ultrasound

- Engorged corpus cavernosum and spongiosum



Reproductive Cases

“Woodrow”

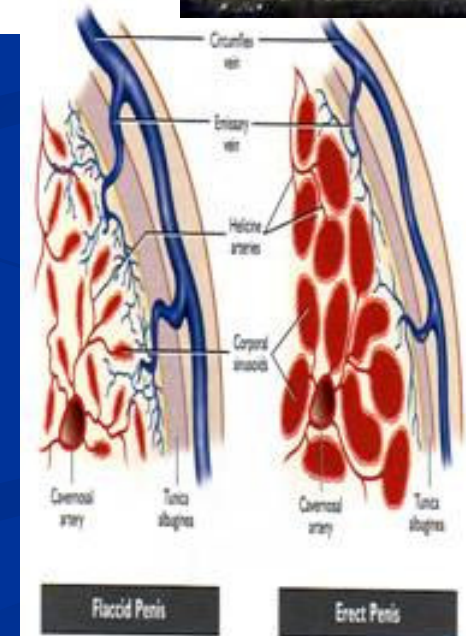
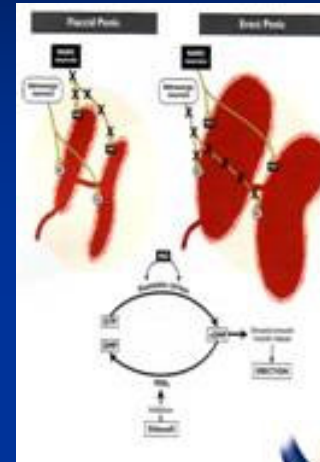
Outcome

- TDX cauda equina associated priapism
- TX pseudoephedrine hydrochloride 30 mg po bid (alpha agonist)
- Improved 80%, weaned off medication in 8 weeks



Priapism

- The name comes from the god **Priapus**, referring to that god's most notable attribute: Priapus was punished by the gods for attempting to rape a goddess by being given a huge but useless set of wooden genitals.
- Neurologically-mediated, vascular event that results in engorgement of the corpus cavernosum of the penis with blood.
 - Ischemic (veno occlusive low flow)
 - Non ischemic (arterial high flow)
- Under parasympathetic control.
- Detumescence is under adrenergic control.
- TX sympathomimetic or parasympatholytic
- Rx: Alpha agonists (ephedrine, pseudoephedrine), Gabapentin, Terbutaline (B agonist)



Reproductive Cases

“Travis”

Sign 3y male Labrador retriever
(#1)

HX Sterile meningitis, prednisone
6w

CC Acutely enlarged, painful
scrotum 24h

PE Warm, enlarged, painful &
erythemic scrotum, prominent
right epididymal tail

PL

1. Scrotal
enlargement/inflammation

DDX?

P?



Reproductive Cases

“Travis”

DDX Acute

orchitis/epididymitis,
testicular torsion,
scrotal hernia,
neoplasia

P MDB, B. canis screen,
US +/- FNA/biopsy



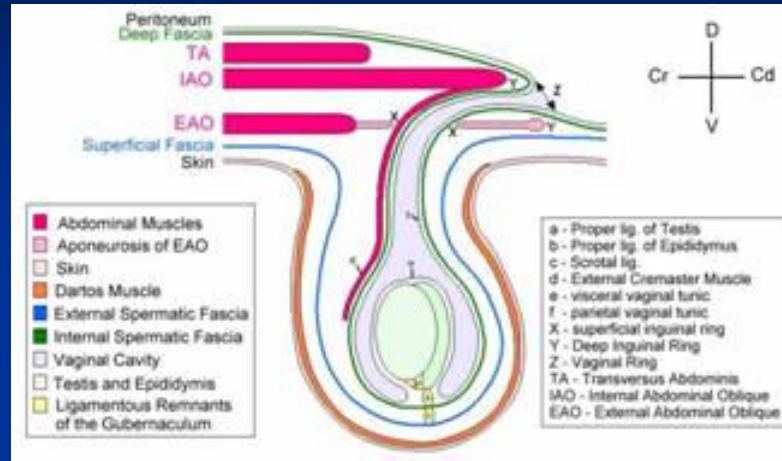
Male Ultrasound: The Scrotum

Scanning technique

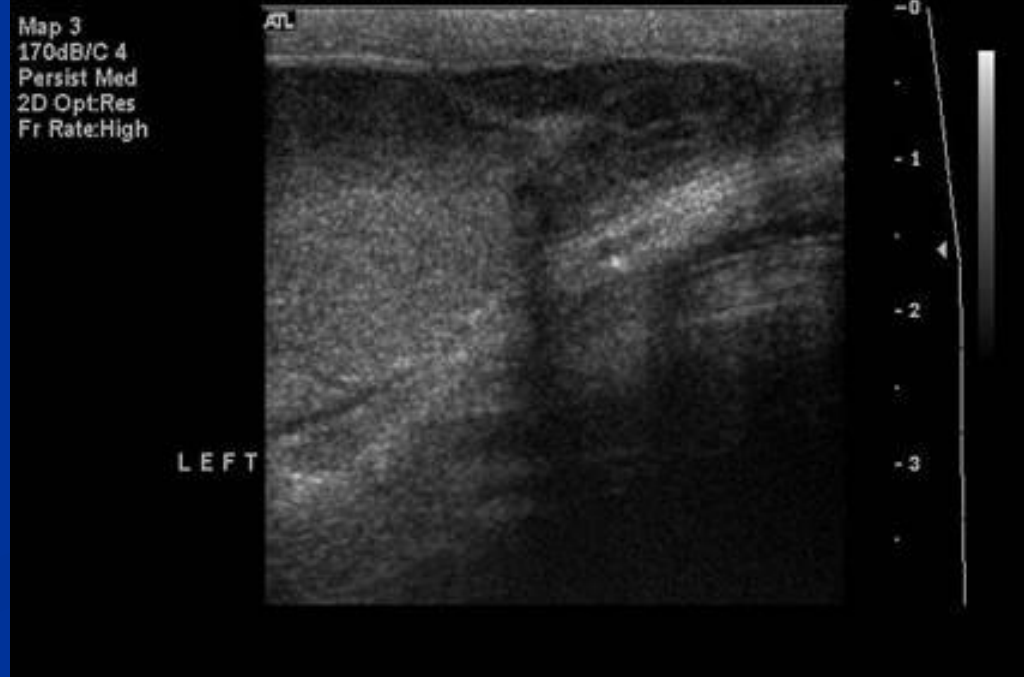
☹ No clipping!

Normal findings

- Layering
- Fluid content
- Median raphe



23 Mar 06 4:09:29 pm TIs 0.0 MI 0.44 Fr #152 3.9 cm



Ultrasound of Scrotal Disorders

Herniation

Signs

Ultrasound

- Increased fluid and tissue surrounding the testicle
- Testicle appears normal in size and structure
- Bowel presence?



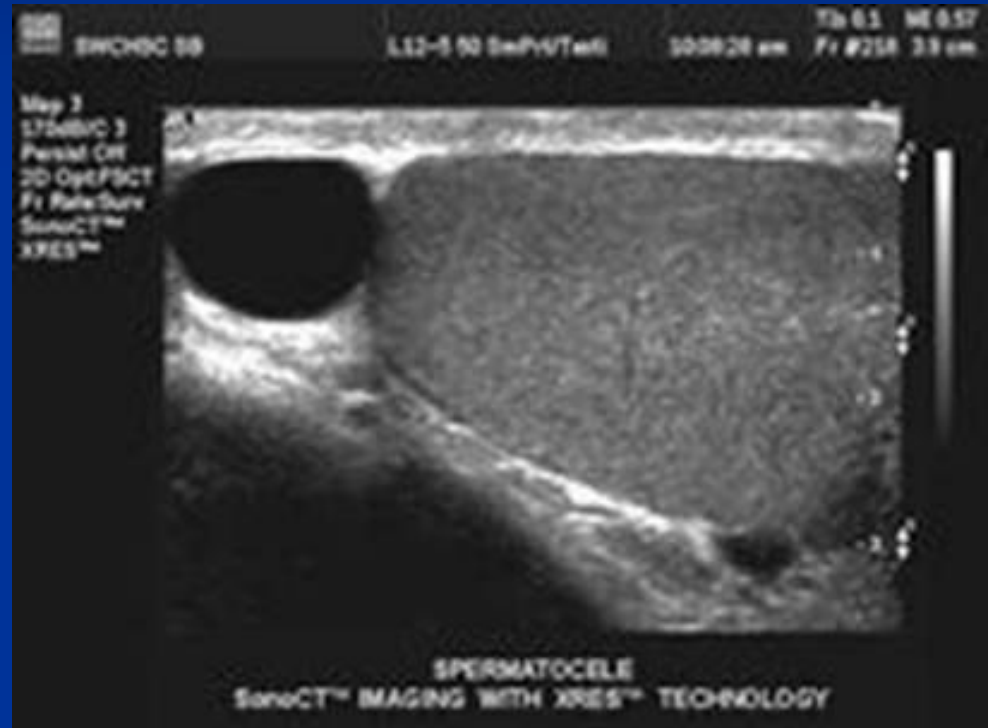
Ultrasound of Scrotal Disorders

Spermatocele

Signs

Ultrasound

- Well defined
- Thin walled
- Near cranial pole
- Arise from epididymal head



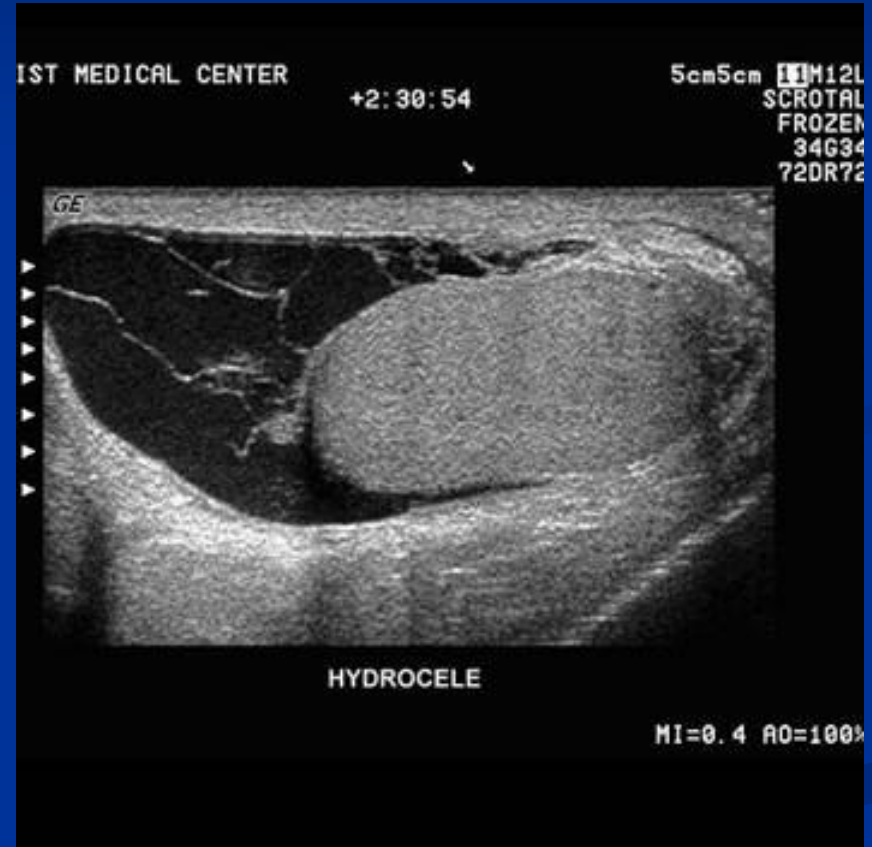
Ultrasound of Scrotal Disorders

Hydrocele

Signs

Ultrasound

- Collection of fluid under the scrotum



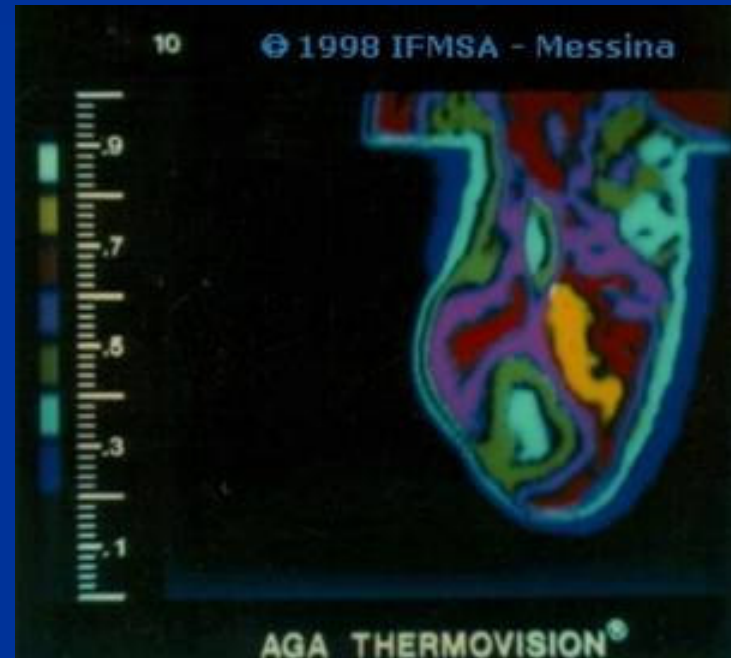
Ultrasound of Scrotal Disorders

Varicocele

Signs

Ultrasound

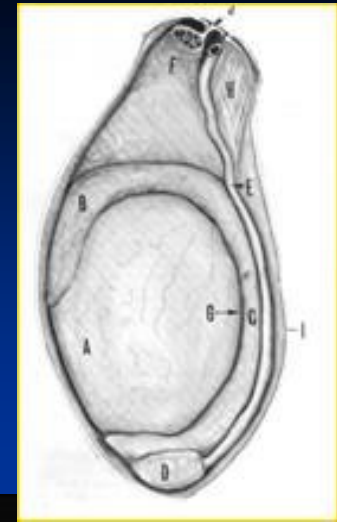
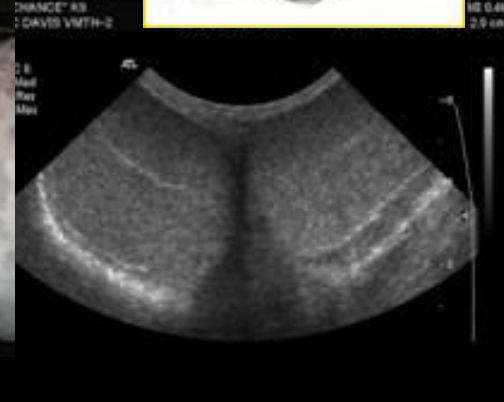
- Dilated veins in the scrotum



Male Ultrasound: The Testes

Scanning Technique

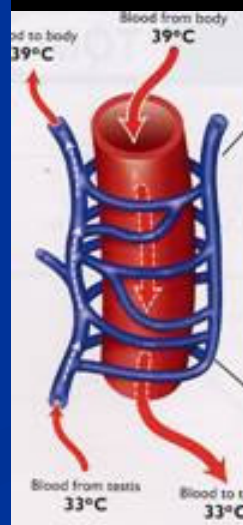
- Scan sagittally & transversely
- Scan one at a time or together
- Use one testicle as “stand off”
- Take measurements



Testicular Ultrasound

Normal Findings

- Fine, Uniform Parenchyma (Spleen)
- Mediastinum Testis
- Pampiniform Plexus
- Symmetry



Ultrasound of Testicular Disorders

Neoplasia

Signs

Ultrasound

- Echogenicity
- Border
- Location
- Size
- FNA useful

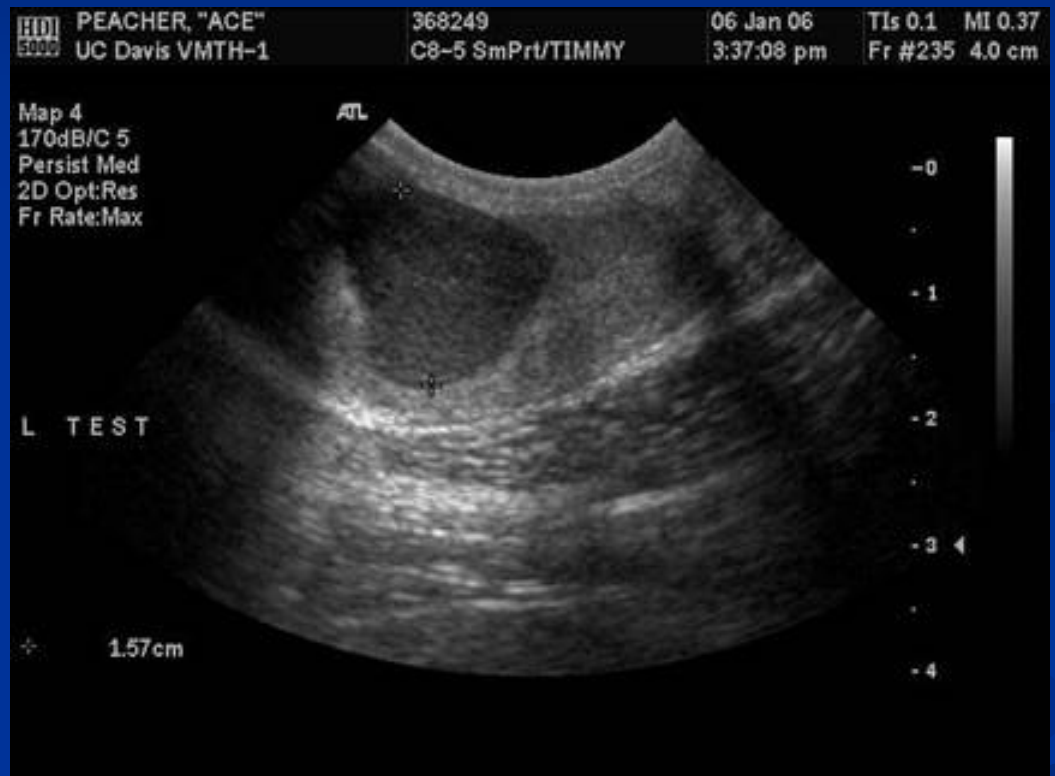


Ultrasound of Testicular Neoplasia

Seminoma

Solid masses

Hypo or isoechoic
to testis



Ultrasound of Testicular Neoplasia Interstitial Cell or Sertoli Cell Tumor

Variable echotexture

Atrophy of opposite testicle

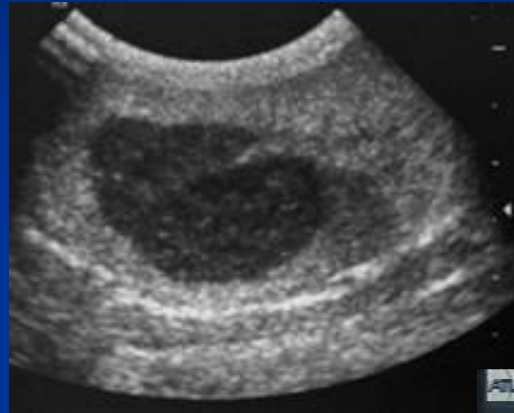


Ultrasound of Testicular Disorders

Orchitis/Epididymitis

Signs Ultrasound

- Enlargement
- Hypoechoic or mottled echotexture
- Thicker more reflective tunica
- Focal or diffuse
- Scrotal edema
- Diagnostics



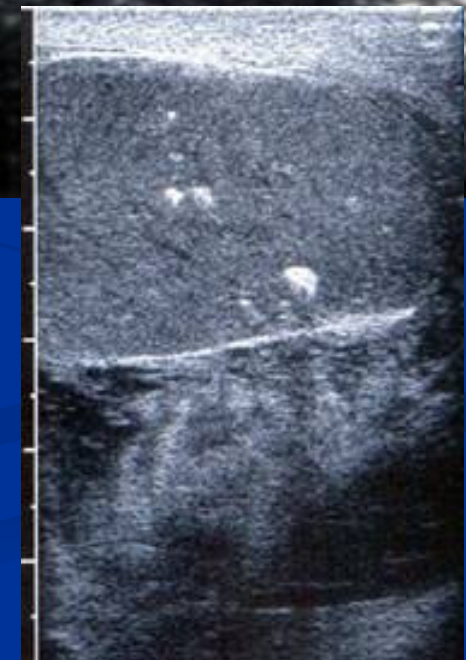
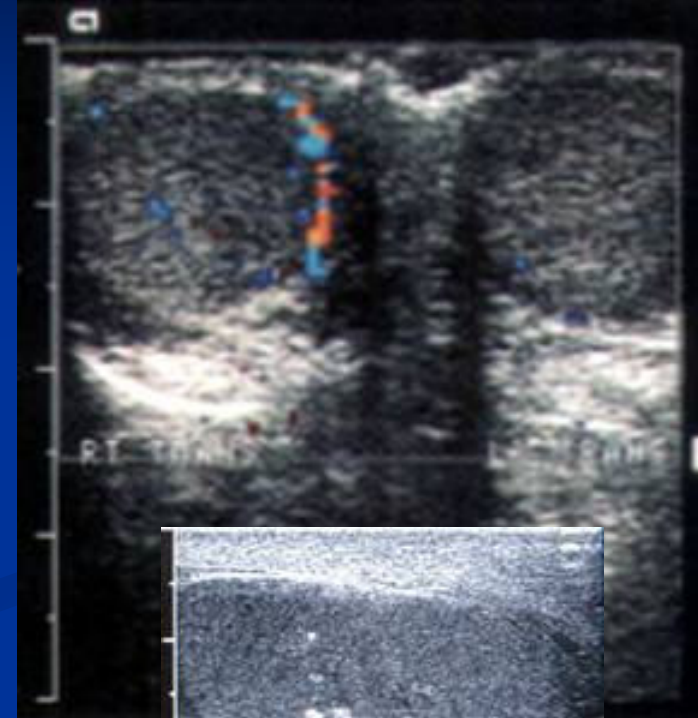
Ultrasound of Testicular Disorders

Torsion

Signs

Ultrasound

- Enlarged
- Hypoechoic
- Mottled
- Peritesticular fluid
- Doppler facilitates diagnosis



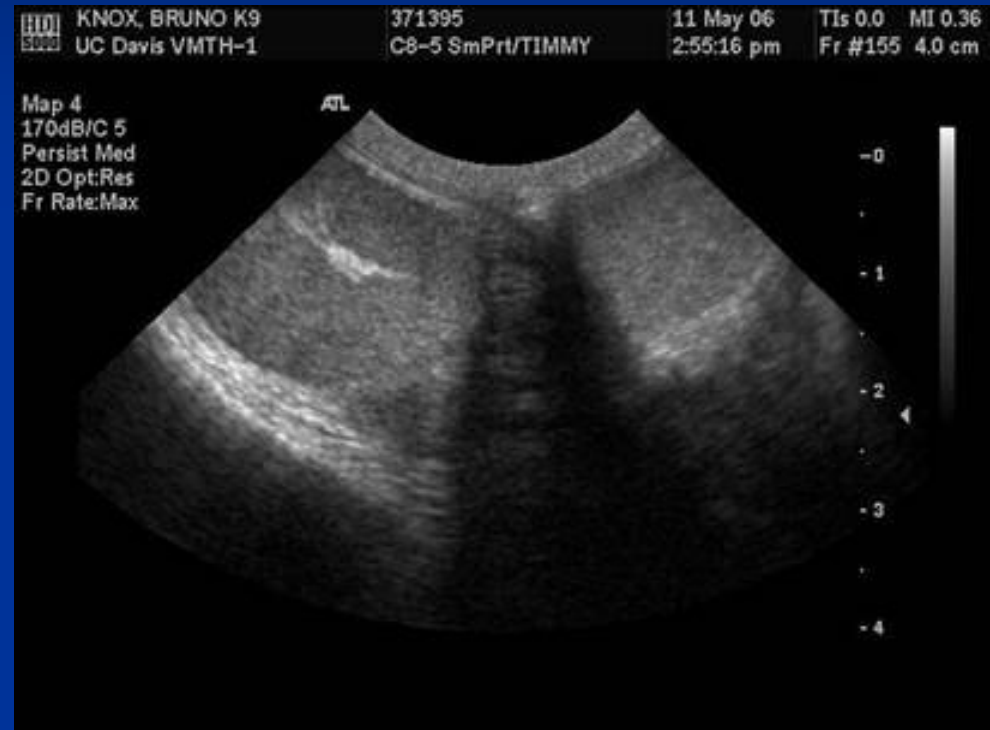
Ultrasound of Testicular Disorders

Atrophy

Signs

Ultrasound

- Small size
- Decreased ratio to epididymis
- Normal echogenicity
- Stippling
- Evaluate other testis if unilateral



Male Ultrasound: Epididymis

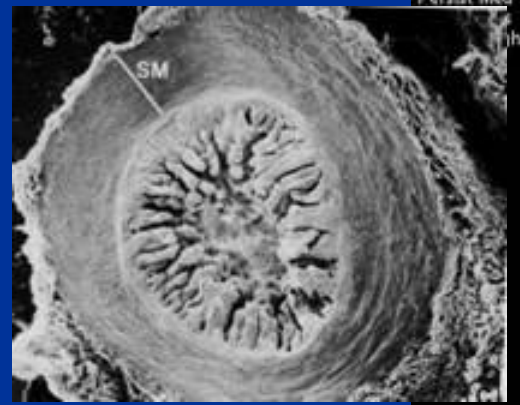
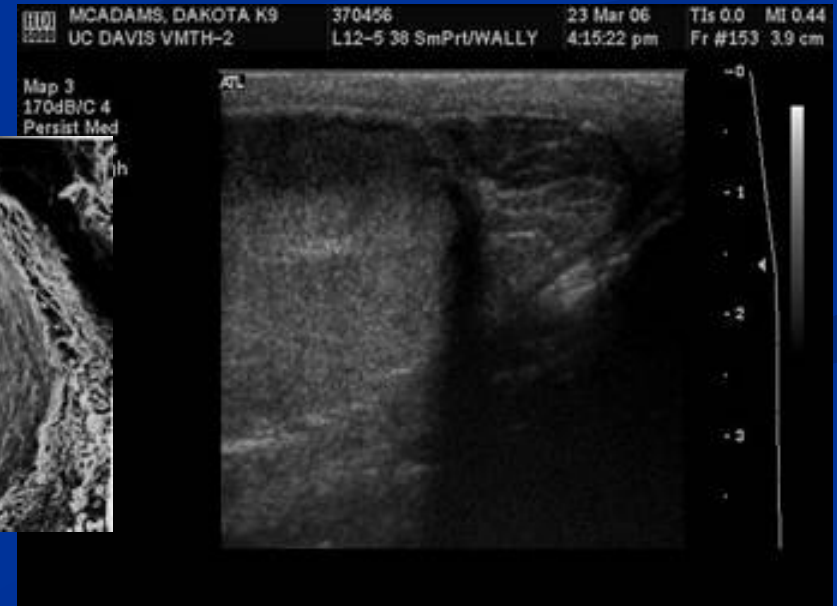
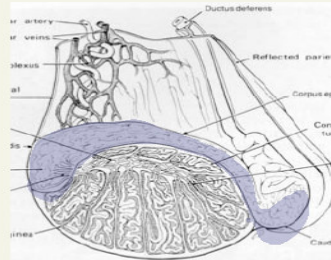
Scanning Technique

Normal Findings

- Hypoechoic
- Teardrop Shape

Epididymis (epididymides)

- Caput (head)
- Corpus (body)
- Cauda (tail)
- Sperm transit through epididymis: 10-14 days (species dependent)
- 60% total sperm contained



Reproductive Cases

“Travis”

Ultrasound Findings

- Enlarged right epididymus with fluid filled structure
- Hyperechoic peritoneum
- FNA → cytology & culture



Reproductive Cases

“Travis”

OUTCOME

- DX epididymitis, abscess
- TX Enrofloxacin & ampicillin pending culture/sensitivity (*E. coli*)
- Weaned off prednisone
- Clinical resolution
 - 1 m recheck
 - **Ultrasound**
 - SC 100 million
- Fertility prognosis guarded
 - Thermal damage
 - Sperm auto antibodies



Reproductive Cases

“Travis”

OUTCOME

- 12 month recheck
normal PE
- 800,000,000 sperm per
ejaculate
- Normal motility and
morphology



Reproductive case

“Jet”

Sign 5y intact Malamute

HX Popular sire, currently
fertile, owner wishes to
freeze semen

CC Dribbling in house

PE Normal, bilobed
appropriate size prostate,
not painful, firm.

PL Hemospermia

DDX?

P?



Reproductive case

“Jet”

DDX BPH, prostatitis,
prostatic neoplasia,
urethritis or cystitis,
coagulopathy,
urolithiasis, brucellosis

P MDB, coagulogram,
semen evaluation, B.
canis screen, **US**



Ultrasound: Urinary Bladder

- Use both a fanning technique and a moving technique
- Always use two scan planes
- A fanning technique is needed to evaluate the bladder neck
- Reduce the depth of field and turn down the gain



Male Ultrasound: Urethra

Scanning Technique

- Prostatic portion best evaluated sagittally
- Look for sediment and calculi



Male Ultrasound: Urethra

Normal Findings

- Thin wall
- Anechoic lumen



Male Ultrasound: Prostate

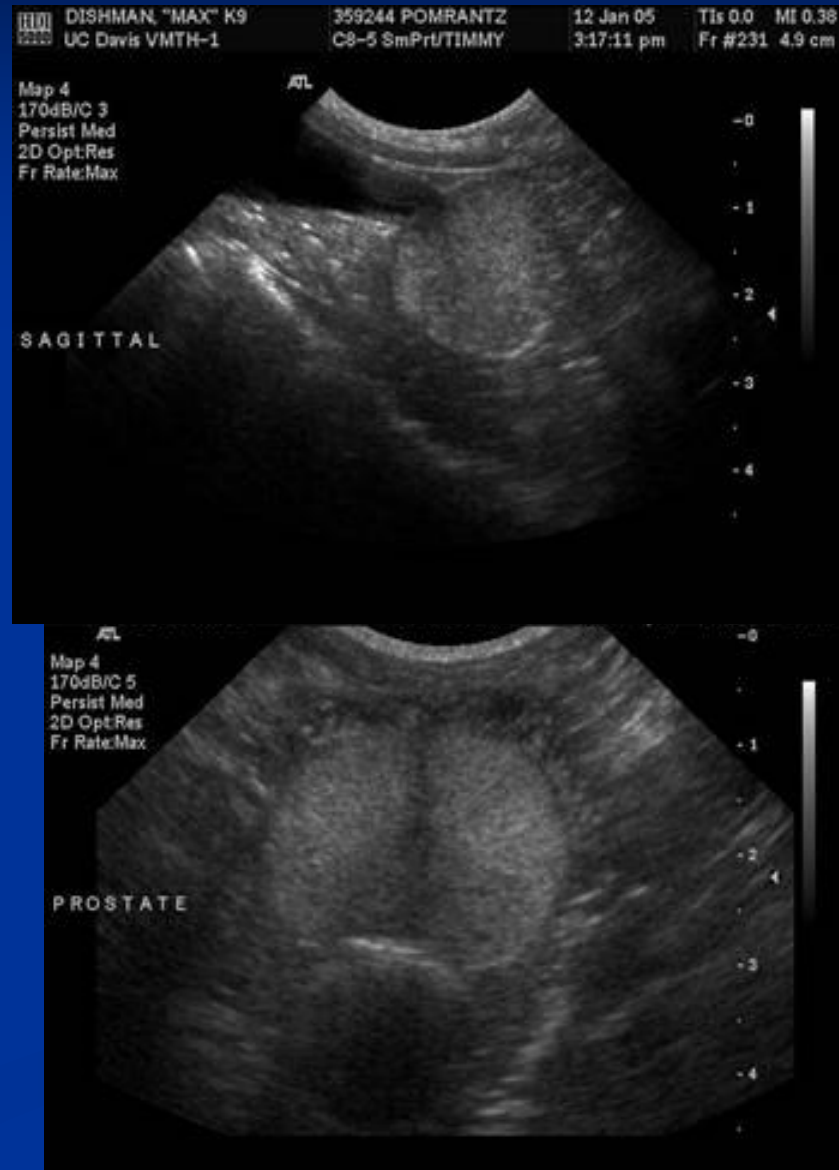
Scanning Technique

- Transverse scan to locate urinary bladder
- Full bladder
- Sagittal approach
- Follow urethra caudally
- Transverse & sagittal evaluation
- Colonic gas interference
- Canine > feline



Prostatic Ultrasound

- Size
- Echogenicity
- Symmetry
- Cystic ?



Prostatic Ultrasound

Normal Findings: Intact Male K9

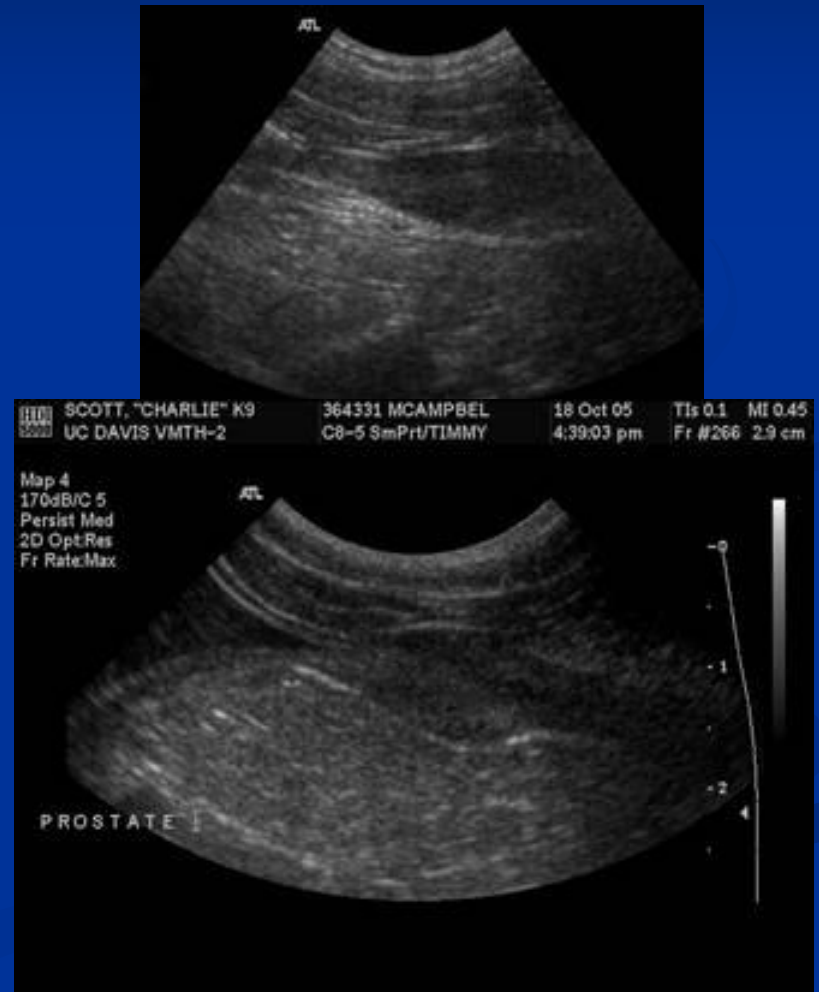
- 2-3 cm diameter
- Granular parenchyma
- More echogenic than spleen
- Uniform echotexture
- Symmetric
- Smooth border



Prostatic Ultrasound

Normal Findings: Neutered Male K9

- Small hypoechoic “pod” if normal
- Consider pathology if larger than expected for age or time of neutering
 - Neoplasia?
 - Metaplasia?



Prostate Ultrasound

Normal Findings: Intact Feline

- ❑ Difficult to visualize
- ❑ Small size
- ❑ In pelvic canal
- ❑ Rarely problematic



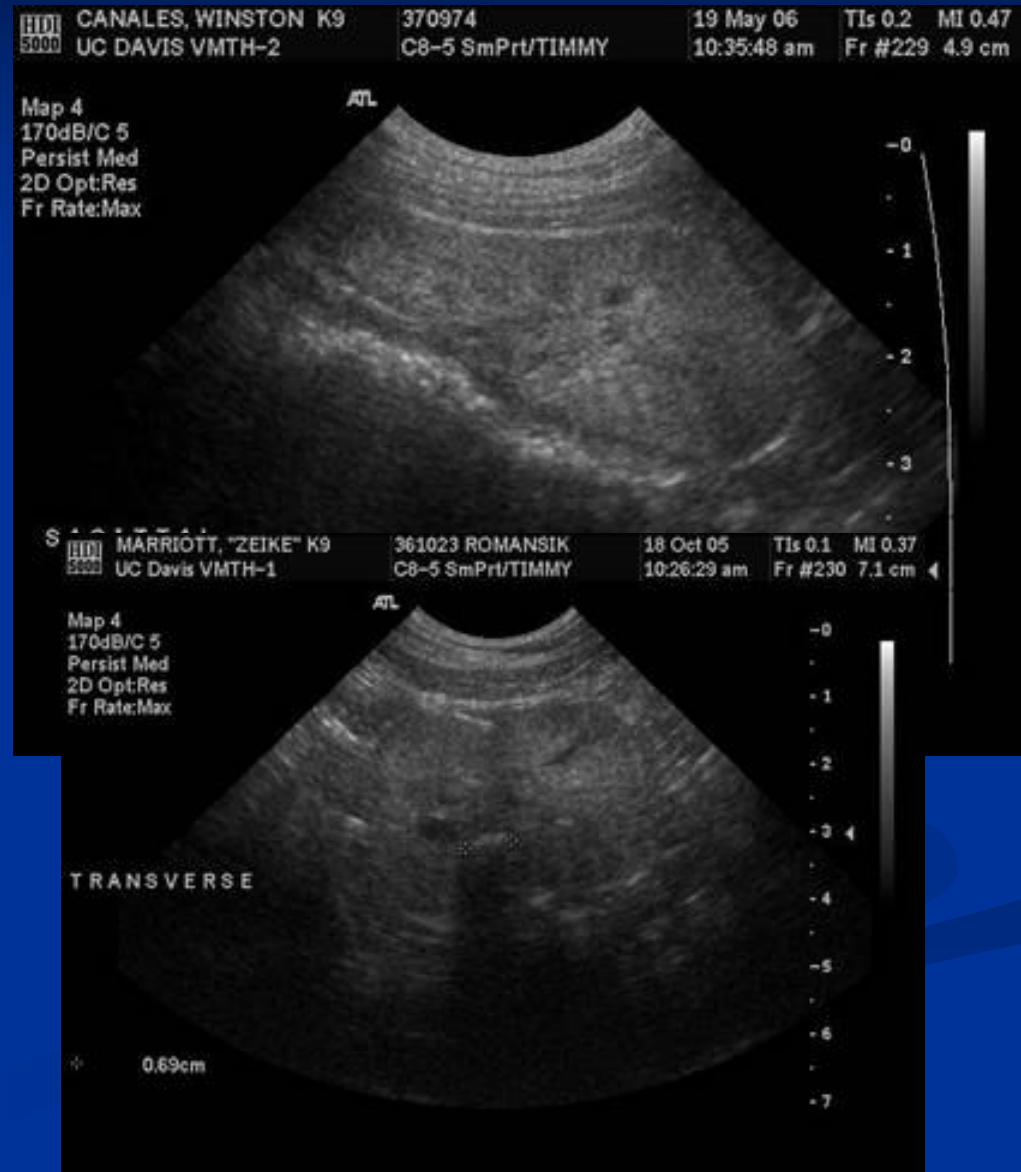
Ultrasound of Prostatic Disease

Benign Hyperplasia

Signs

Ultrasound

- Symmetric enlargement
- Uniform mottle
- Small cysts common





WOOD, "TRAVIS" K9 96
UC DAVIS VMTH-1

334410 GRUNDY
C8-5 SmPrt/TIMMY

05 Feb 02
11:20:01 am

TIs 0.0
27 Hz

MI 0.39
5.7 cm

Map 4
170dB/C 4
Persist Med
2D Opt/Res
Fr Rate/Max

BW 0 Pg 0
Col 0 Pg 0

SAGITTAL

ATL

PLAY-0

-1

-2

-3

-4

-5



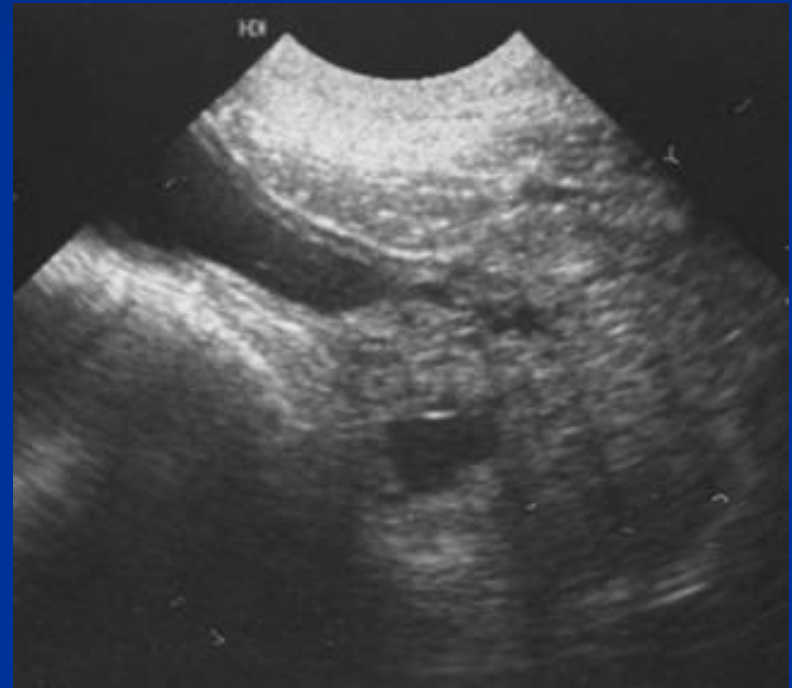
Ultrasound of Prostatic Disease

Cystic Hyperplasia

Signs

Ultrasound

- Parenchymal cysts are associated with benign hyperplasia
- Variable appearance, size



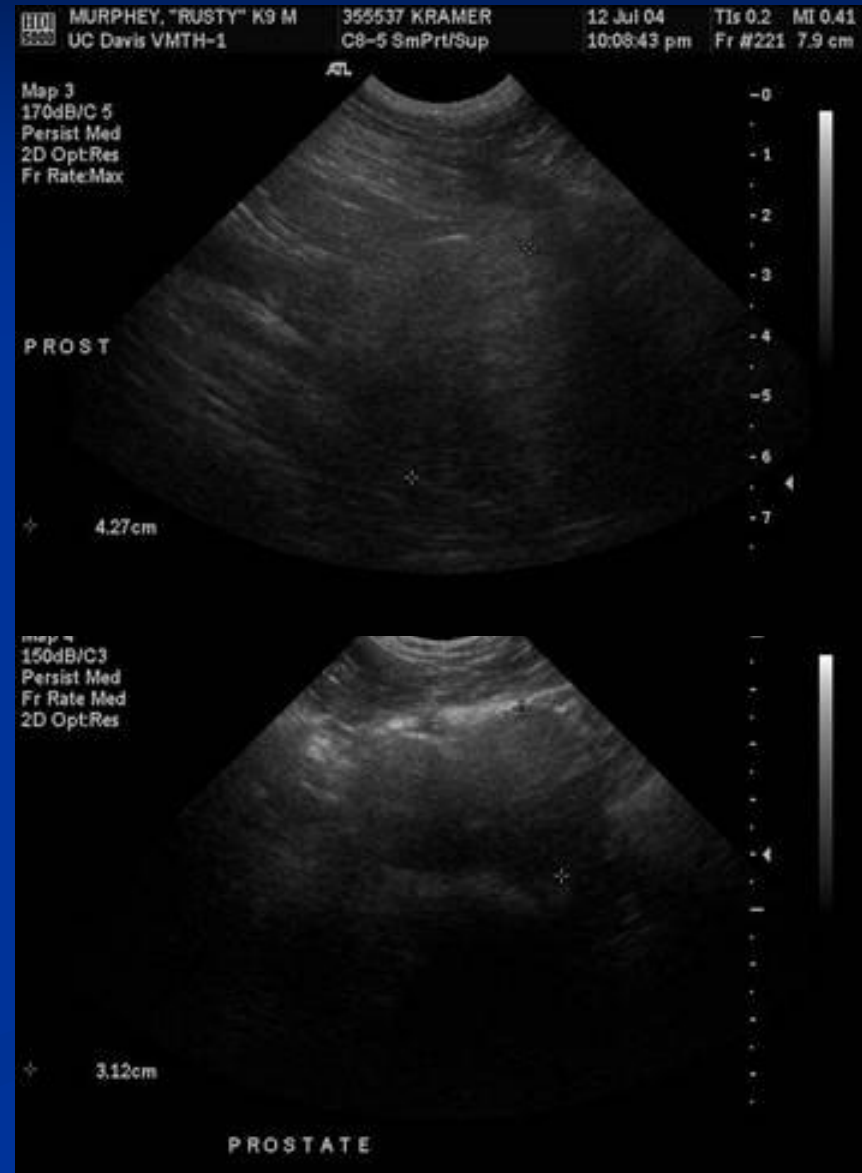
Ultrasound of Prostatic Disease

Prostatitis

Signs

Ultrasound

- Enlarged
- Not homogenous
- Irregular architecture
- Asymmetric shape



Ultrasound of Prostatic Disease

Neoplasia

Signs

Ultrasound

- Asymmetric
- Variable size
- Irregular contour
- Mineralization
- Invasive



Prostatic Neoplasia

Remember to evaluate:

- Sublumbar region
- Kidneys





POUNSKY, 'clay' K3 50
UCD VMTH ULTRASOUND

325350 DAHX
C8-5 SmPartTILMY

25 Jan 01 T1s 0.0 MI 0.3
11:49:32 am 30 Hz 4.7 cm

Map 8
DynRg 45dB
Persist Med
Fr Rate Med

51



TRANSVERSE

Ultrasound of Prostatic Disease

Paraprostatic Cysts

Signs

Ultrasound

- **Muellerian duct remnants**
- **Thin walled**
- **Echogenic fluid**



Reproductive case

“Jet”

- UA numerous RBCs, culture negative
- Semen evaluation marked hemospermia, 750,000,000 sperm/ejaculate, normal motility & morphology parameters; sample not freezable
- **Ultrasound**



Reproductive case

“Jet”



Reproductive case

“Jet”

- Rx Finasteride 5 mg daily
- Recheck semen evaluation 4 weeks
- Recheck ultrasound 4 weeks
- Successful cryopreservation 6 weeks later



QUESTIONS? THANK YOU

