EQUINE STOMACH ULCERS

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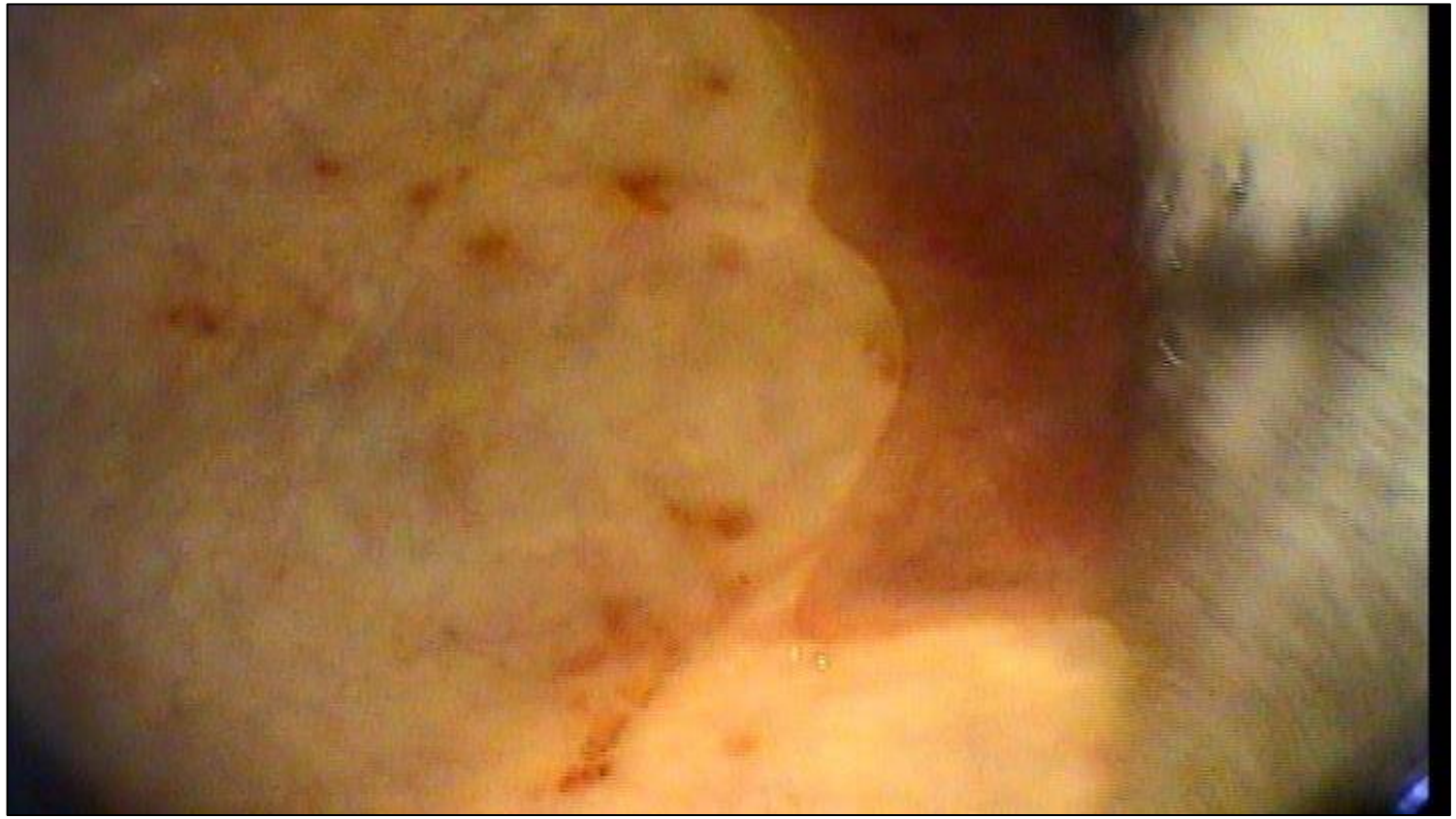
Conley Koontz

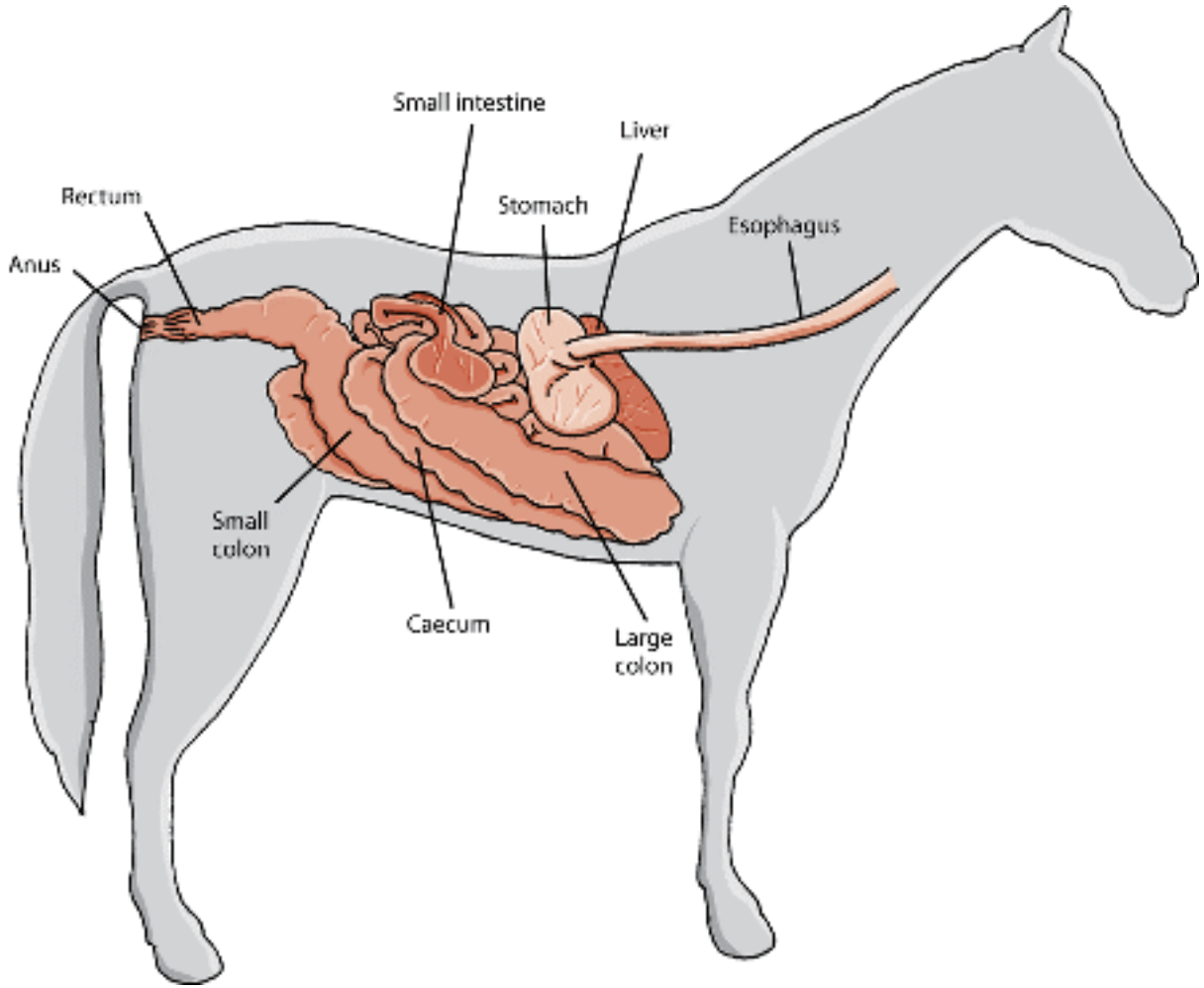
Equine Hospital

OUTLINE

- Brief overview of anatomy
- Causes of ulcers
- Clinical signs
- Treatment
- Long term management/prevention



ANATOMY OF THE EQUINE STOMACH



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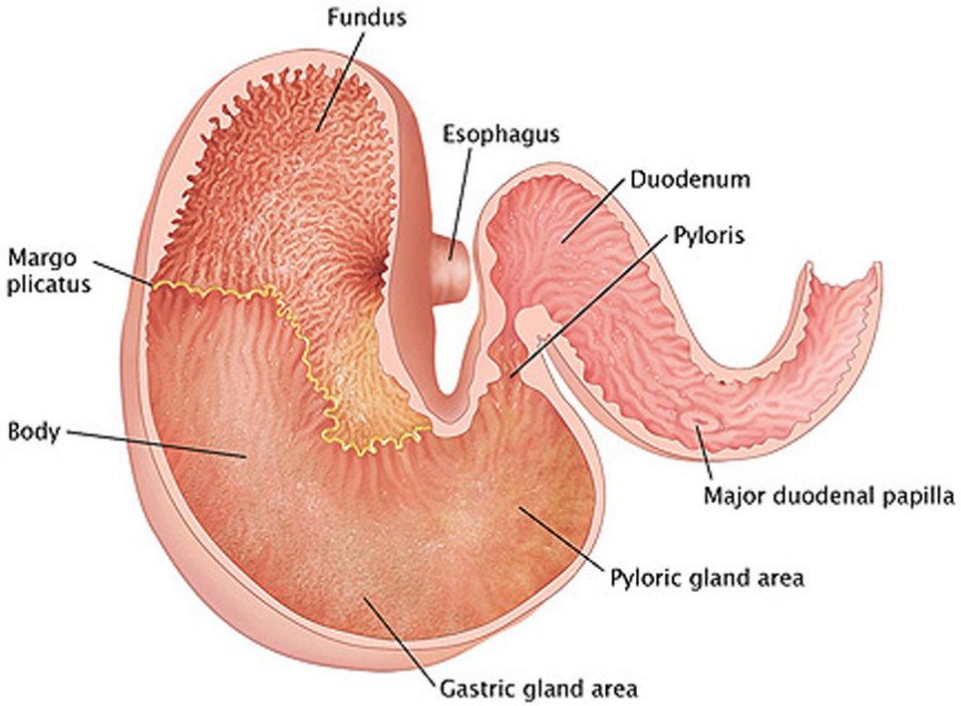
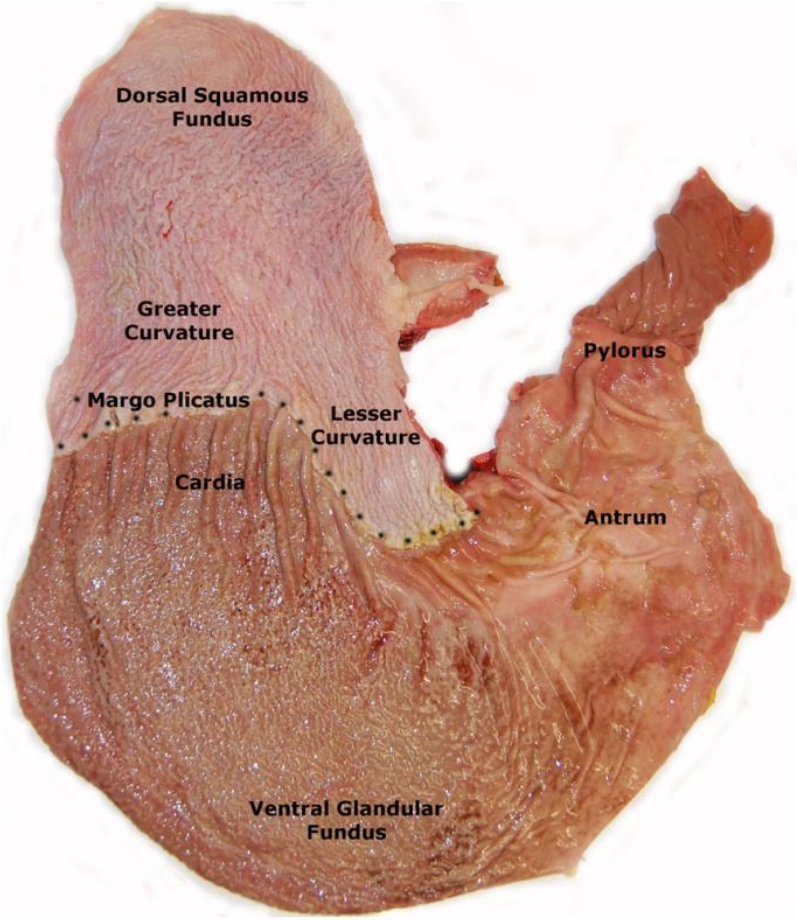
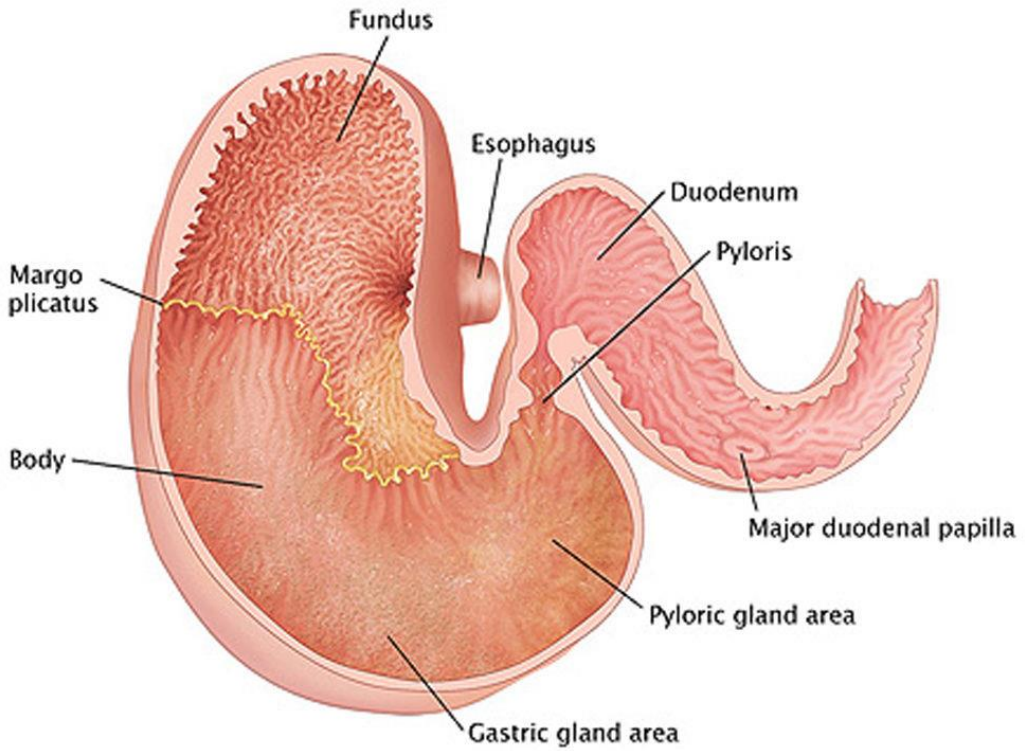


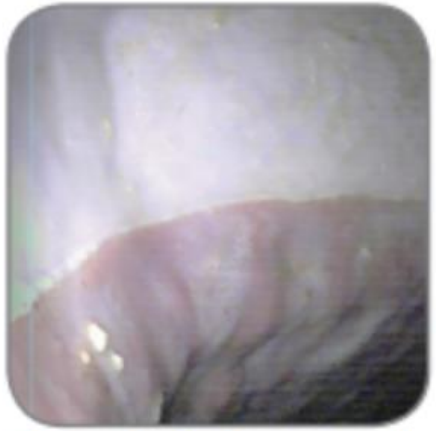


ANATOMY OF THE EQUINE STOMACH

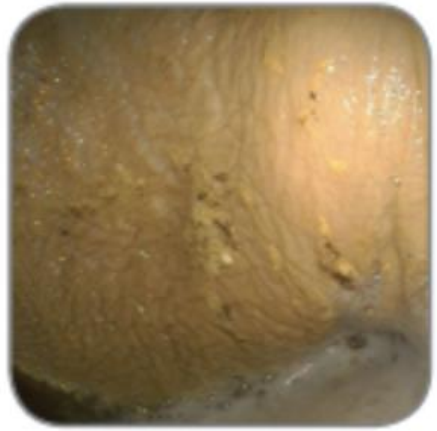
- Squamous (non-glandular) ulcers
- Glandular (pyloric) ulcers



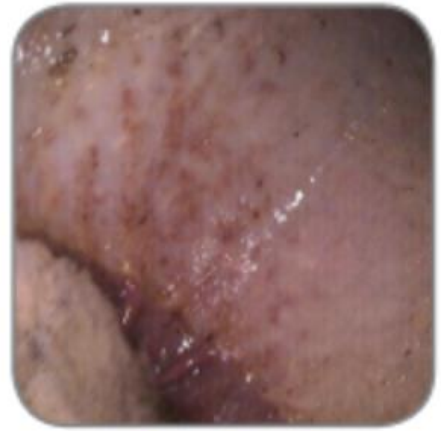
Squamous Ulcer Grading System



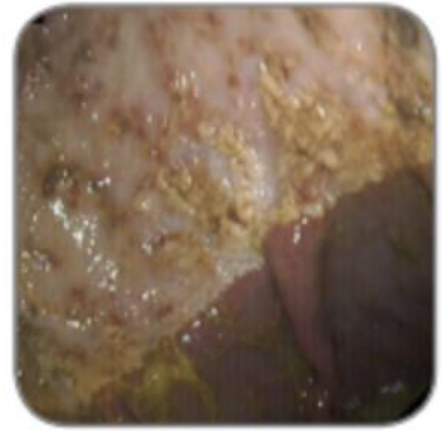
Grade 0 (normal)



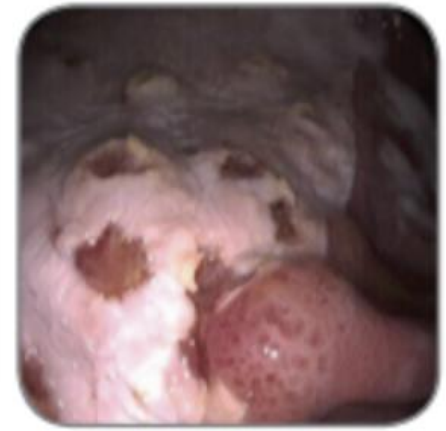
Grade 1



Grade 2

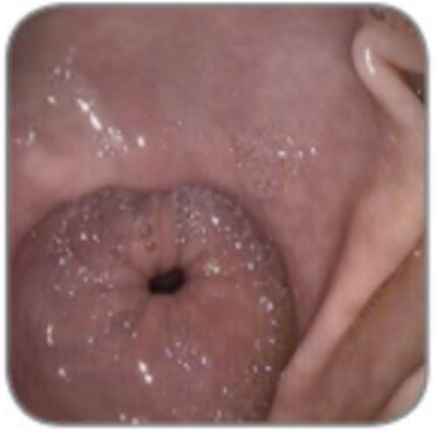


Grade 3

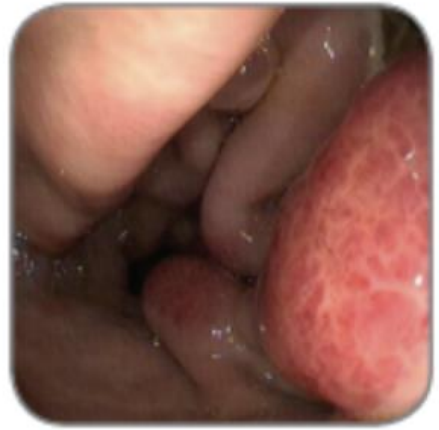


Grade 4

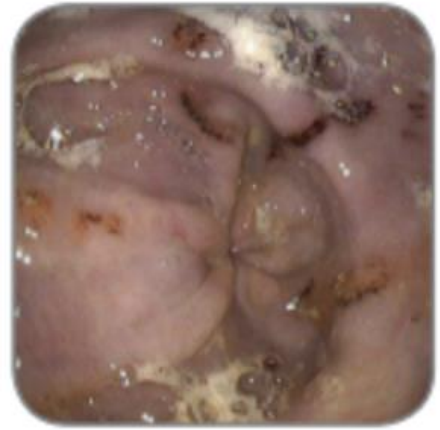
Pyloric Lesions Grading System



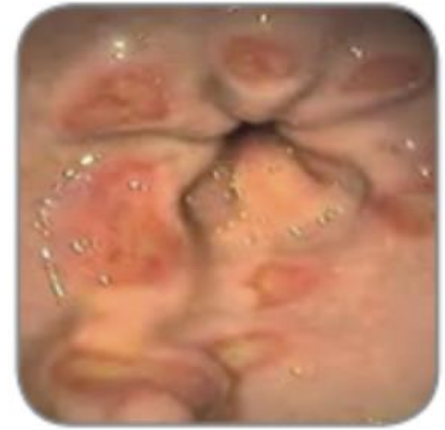
Normal



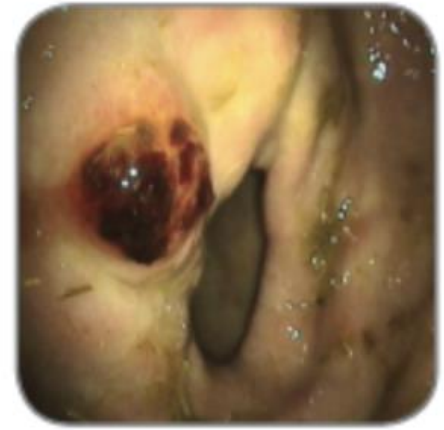
Mild / raised hyperaemic



Moderate / flat haemorrhagic

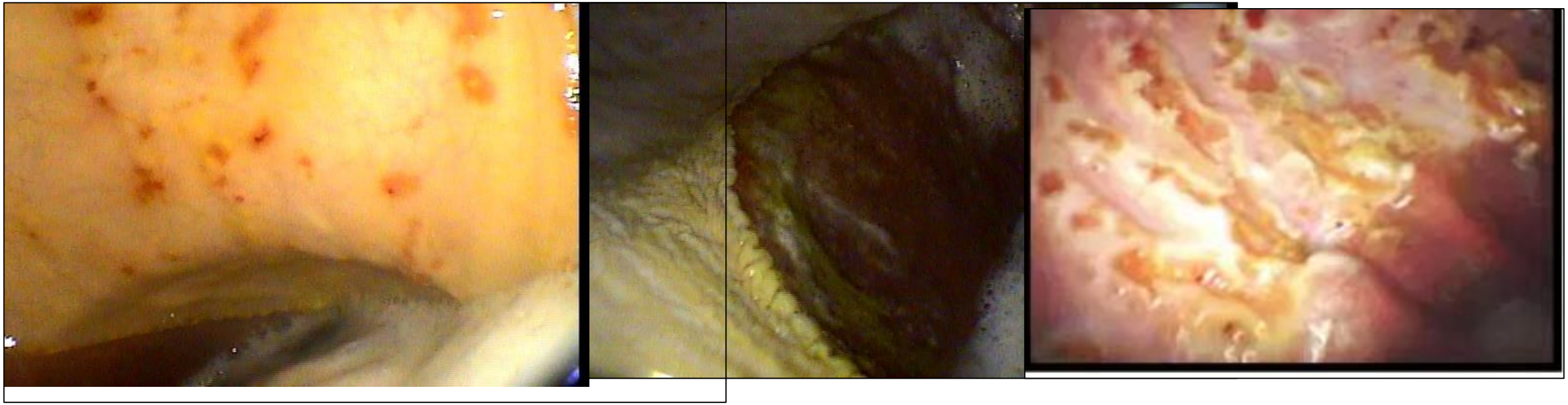


Severe / flat ulcerated

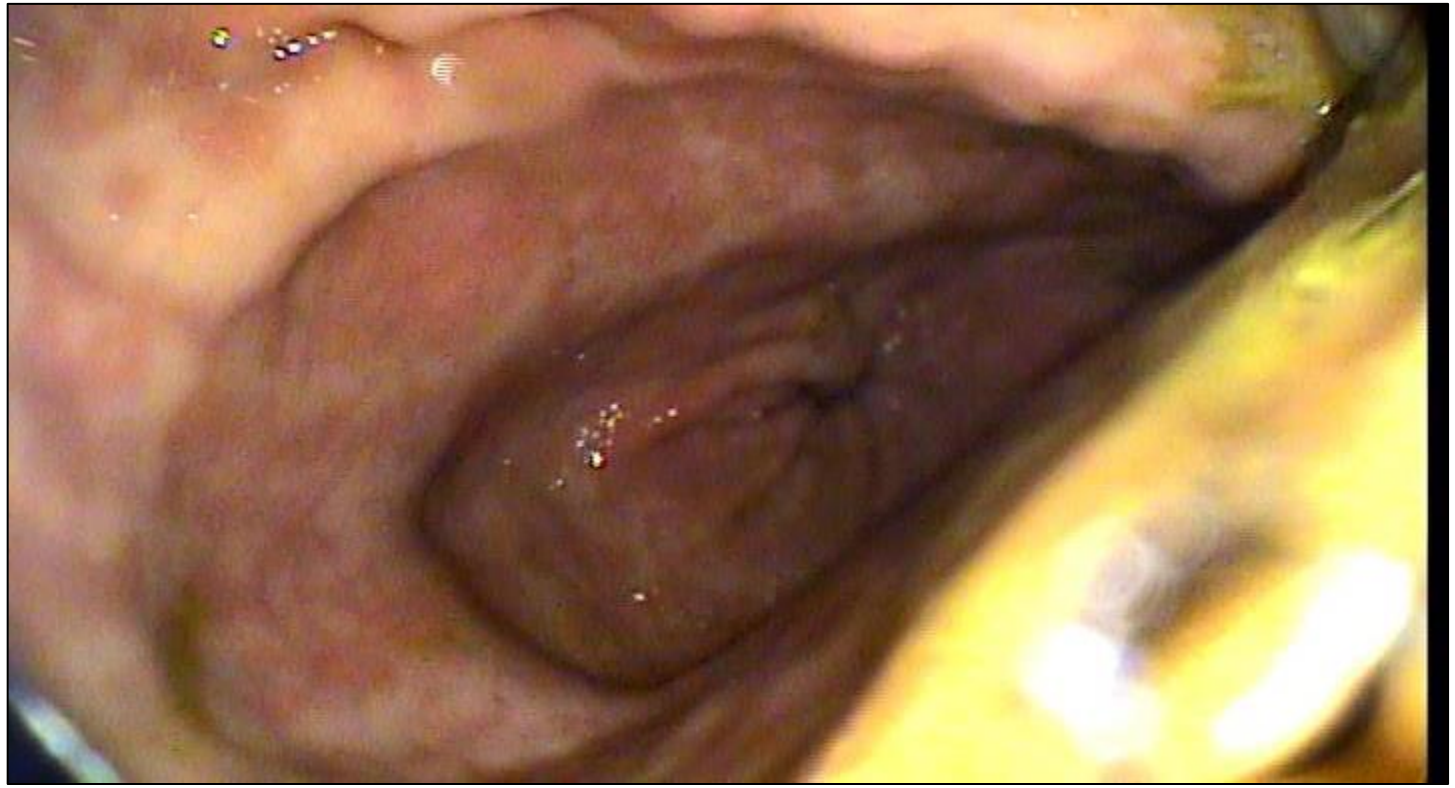


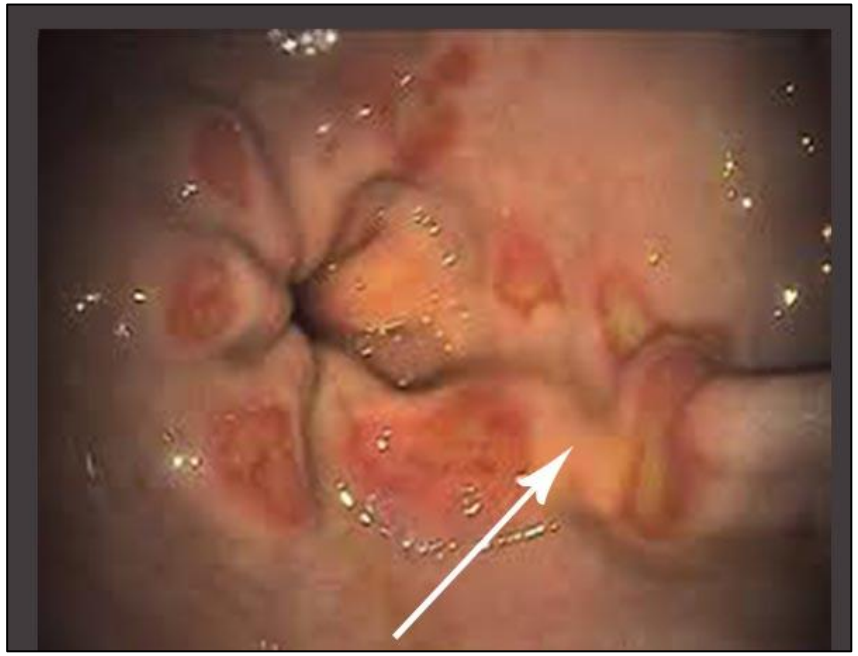
Severe / raised haemorrhagic

EQUINE SQUAMOUS GASTRIC DISEASE



EQUINE GLANDULAR GASTRIC DISEASE

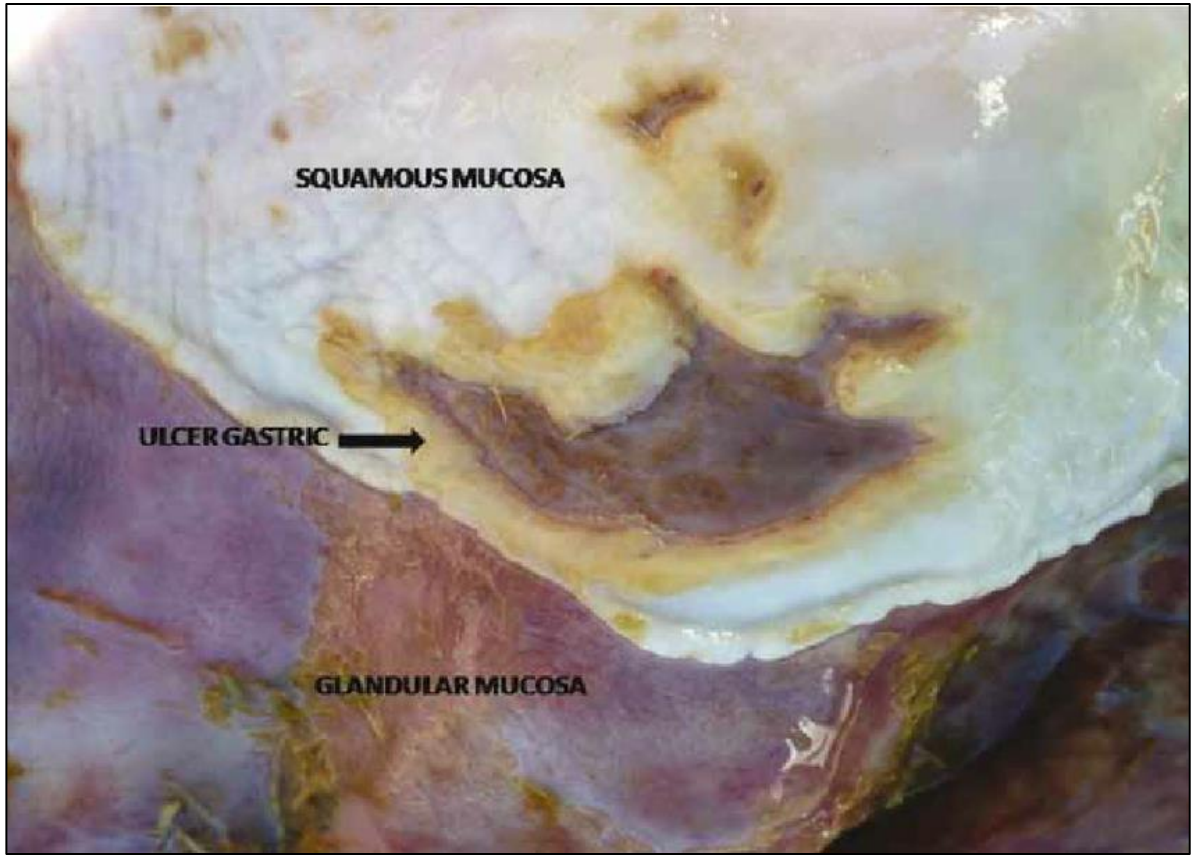




NOT ULCERS

DEVELOPMENT OF ULCERS

- Imbalance of hydrochloric acid (and others) vs protective factors
  - Increased exposure to acid
  - Increased acidity (pH)
  - Decreased healing properties



CLINICAL CAUSES OF ULCERS

Increased exposure/stronger acid

- High grain diets
- Limited forage
- Work with an empty stomach
- Proximal enteritis

Decreased healing properties

- NSAID's (banamine, bute)
- Stress - emotional, physiological
  - Certain breeds more at risk
- Pain
- Illness

CLINICAL CAUSES OF ULCERS

ULCERS ARE MAN MADE

CLINICAL SIGNS

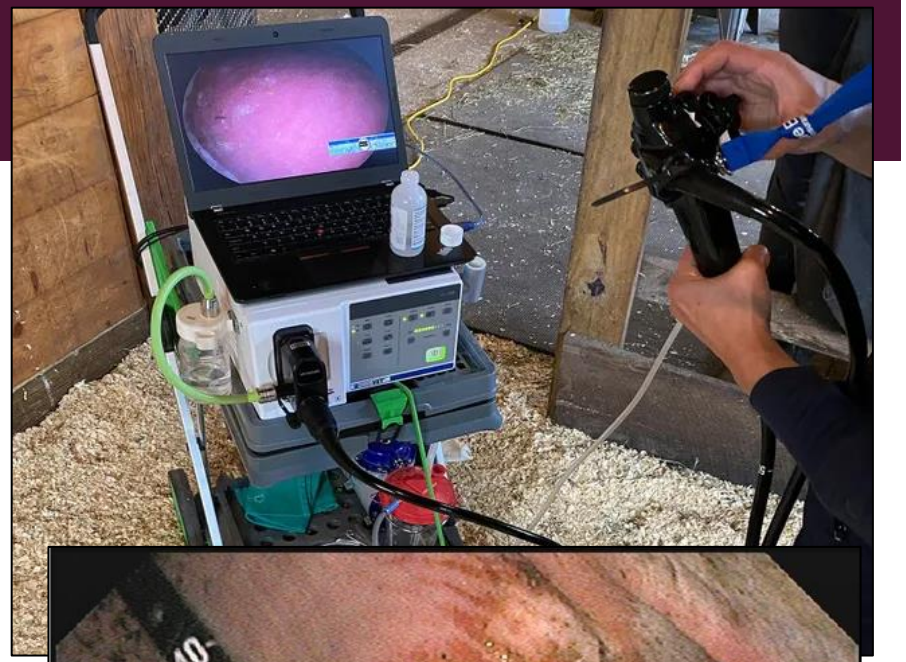
- Colic – chronic, low grade
- Inappetence (especially grain)
- Poor performance
- Poor body condition
- Attitude changes overall
- "Cinchy"
- Weight loss

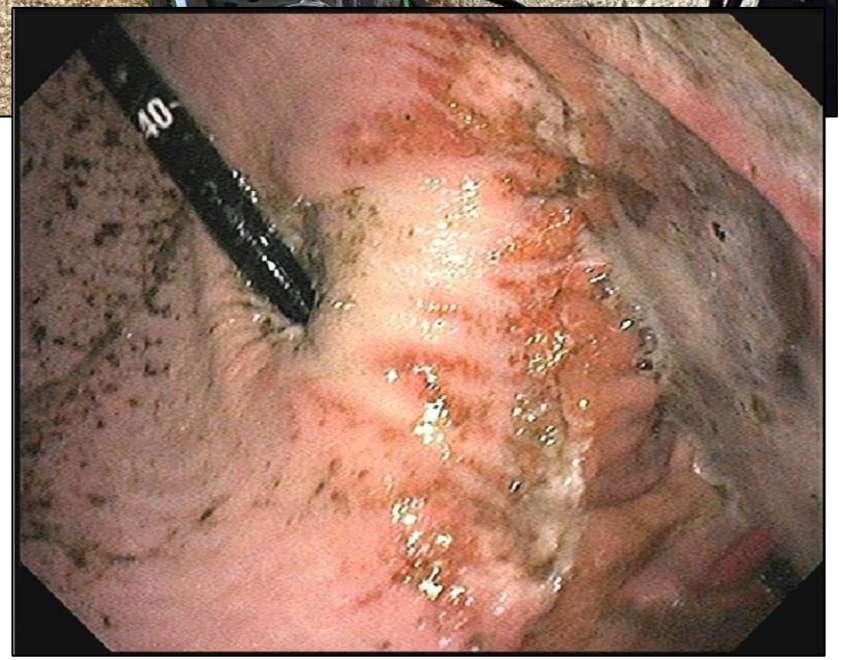
- Pressure points?

DIAGNOSIS

- Presumptive based on clinical signs/history
- Gastroscopy
  - Location
  - Severity

How are we going to treat/manage?





TREATMENT GOALS

Medications

- Shut off the pump that makes acid
- Binds the molecules needed to make acid
- Buffers
- Provide healing factors for the stomach
- Bandaid's

- Fix the environment, body heals itself like a wound

Management changes

- Minimize stress
- Provide buffer for acid

MEDICATIONS: QUICK ASIDE

- Drug name vs brand name (Children vs The Gran Children)
  - Acetaminophen = Tylenol
  - Ibuprofen = Motrin
  - Naproxen = Aleve

- FDA approved vs compounded
  - FDA approved = has proven consistency, efficacy, potency, shelf life
    - Every single pill, tube, etc is exactly the same as every other one
    - The amount of active drug on day its made is the same as the day it expires
  - Compounded = very little regulation
    - Companies prove that they are a clean, sterile facility, but often do not have to prove drug consistency/efficacy

OMEPRAZOLE

- Brand name = Ulcergard or Gastrogard
- Shuts off the pump that makes the acid
- This pump is in the SMALL INTESTINE
  - Formulation of this drug is vital to its efficacy
    - Needs to make it through all the stomach acid, remaining intact
    - This is why Prilosec is delayed release capsules

- Ulcergard and Gastrogard are the ONLY omeprazole formulations that have proven efficacy
  - Paste is specially designed to protect the drug

WHAT IS THE DIFFERENCE BETWEEN GASTRO VS ULCERGARD?

- The label

- Both tubes have exactly the same amount of drug in them

- Ulcergard – labeled for prevention (1 "dose" = ¼ tube)
  - Therefore it is over the counter (and cheaper)

- Gastrogard – labeled for treatment (1 "dose" = tube by weight)
  - Therefore it is prescription (and more expensive)

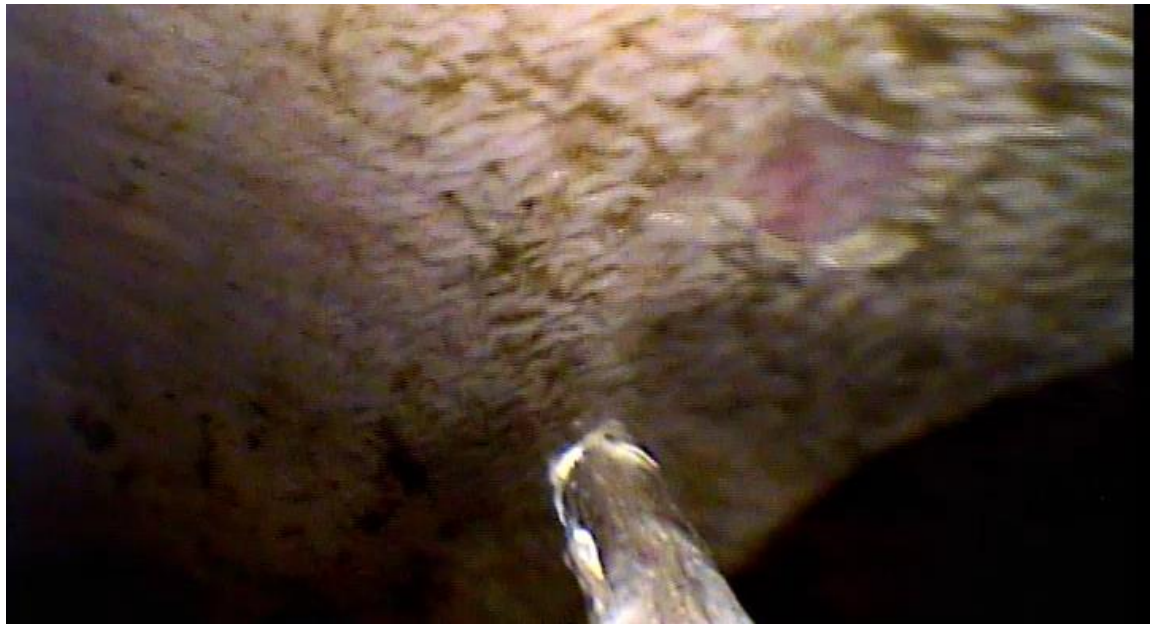
CAN I JUST USE A COMPOUNDED DRUG?

- Sure but….
- Sometimes they work, sometimes they don't
  - Quality, efficacy
  - Can it even get where it needs to?
- My recommendation:
  - Scope first
  - Treat x2 weeks
  - Scope again

CAN I TREAT WITHOUT SCOPING?

- Sure, but:

- You're treating a wound blind
- Lack of response DOES NOT rule out ulcers
  - Did you treat long enough?
  - Dosage?
  - Location of ulcers – did we need another drug?
  - Compounded medications…..
  - How are we going to prevent them in the future?



OTHER DRUG CATEGORIES

Antacids

- Bind the acid that's already there
- Very short duration of action
- Large volumes, given every 2-3 hours

- NeighLox
- Tums
- Pepto
- Maalox

Receptor blockers (decrease acid)

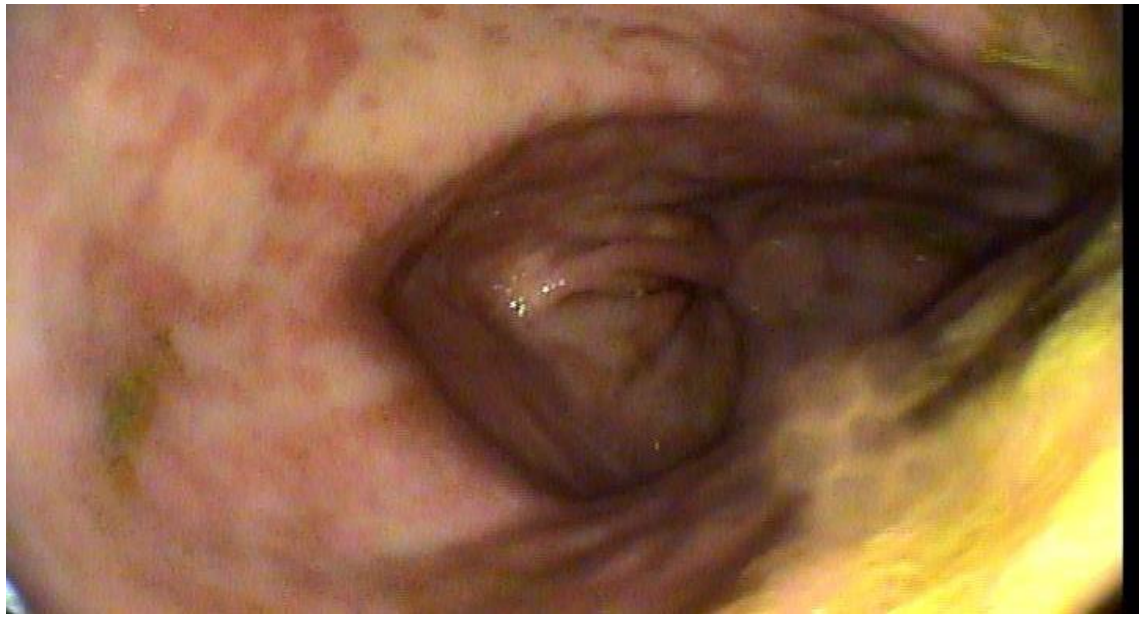
- Not effective alone
- High dosing frequency
- Usually compounded

- Ranitidine
- Cimetidine
- Famotidine

MEDICATIONS: PYLORIC ULCERS

Sucralfate

- A bandaid for the ulcer
- Does not work without acid suppression



Misoprostol

- Stimulates blood flow and mucous production
- Works the opposite of banamine

- Questionable safety for human handling?

TREATMENT: SHORT TERM MANAGEMENT

- FORAGE
  - Increase overall amount
  - Slow feeders
  - Alfalfa
  - Hay prior to grain, prior to exercise
- Grain
  - Decrease overall amount
  - Small, frequent meals
  - Low starch is better
  - Add corn oil
- Turnout
  - Forage during turnout
  - Plenty of water
  - Reduce stress (the "friends")
  - Prevent boredom
- Pay attention to treatment times
  - Omeprazole on an empty stomach
  - +/- sucralfate/misoprostol

TREATMENT: SHORT TERM MANAGEMENT

- This is a wound
- You don't know if its finished healing unless you look at it
- Follow up gastroscopy is important

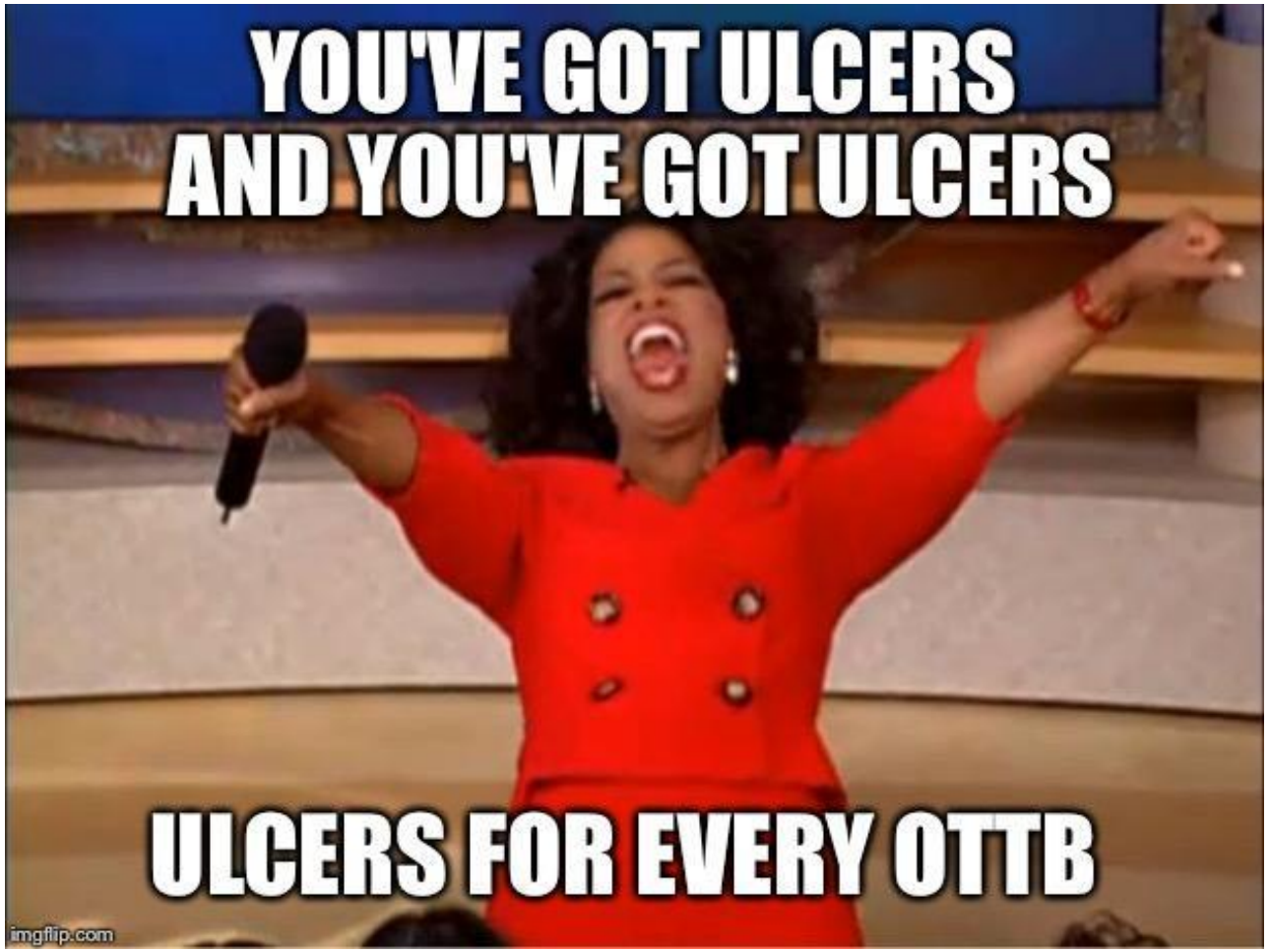
- Can we identify the cause?

PREVENTION (IF NECESSARY)

- Management recommendations!
- Pre-emptive use of omeprazole
  - Treating with a smaller dose for a few days before/during/after a stressful event
- Supplements
  - Smart Pak – Smart Gut Ultra
  - Aloe Vera Juice

TAKE HOME POINTS

- Ulcers are very common as humans have changed the natural environment and feeding habits of horses
- Gastroscopy should be performed to definitively diagnose and get specifics
- Treatment should be done with FDA approved products only per veterinary recommendations
- Prevention and long term management are key to success


YOU'VE GOT ULCERS
AND YOU'VE GOT ULCERS
ULCERS FOR EVERY OTTB
imgflip.com

Conley Koontz

Equine Hospital

EXERCISE INDUCED PULMONARY HEMORRHAGE

“BLEEDERS”

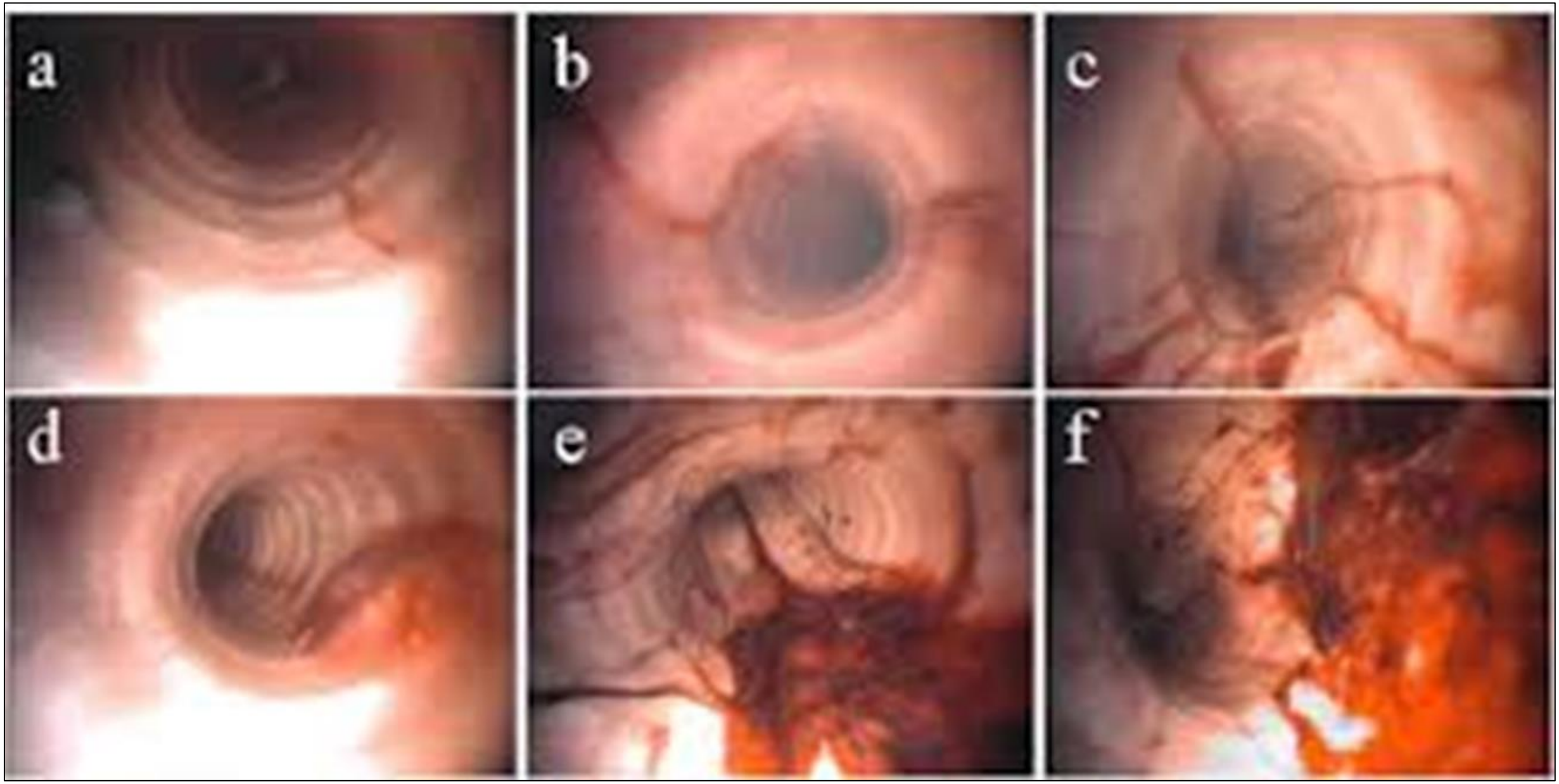
- >50% of racing Thoroughbreds
- 26% of racing Standardbreds
- 62% of racing Quarter Horses
- 40% in three day eventers
- Barrels, polo, steeplechase....

CLINICAL SIGNS

- Nose bleeds (epistaxis) after racing (<10%)
- Blood in larynx/trachea on post race endoscopy
- Bronchoalveolar lavage looking for red blood cells after racing***

- Poor performance, cough

"An occupational hazard of high-speed exercise"
(W. Bayly 2021)


a
b
c
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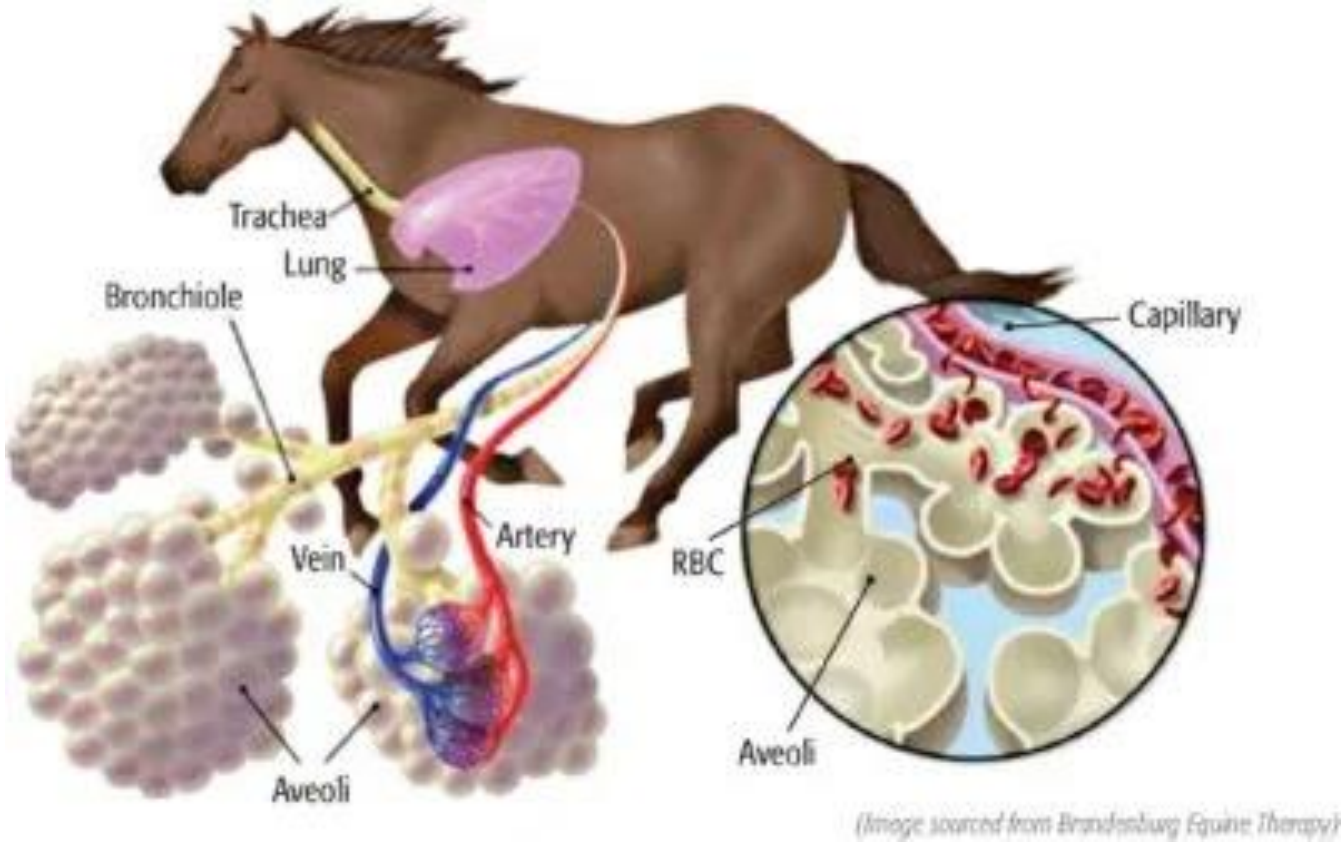
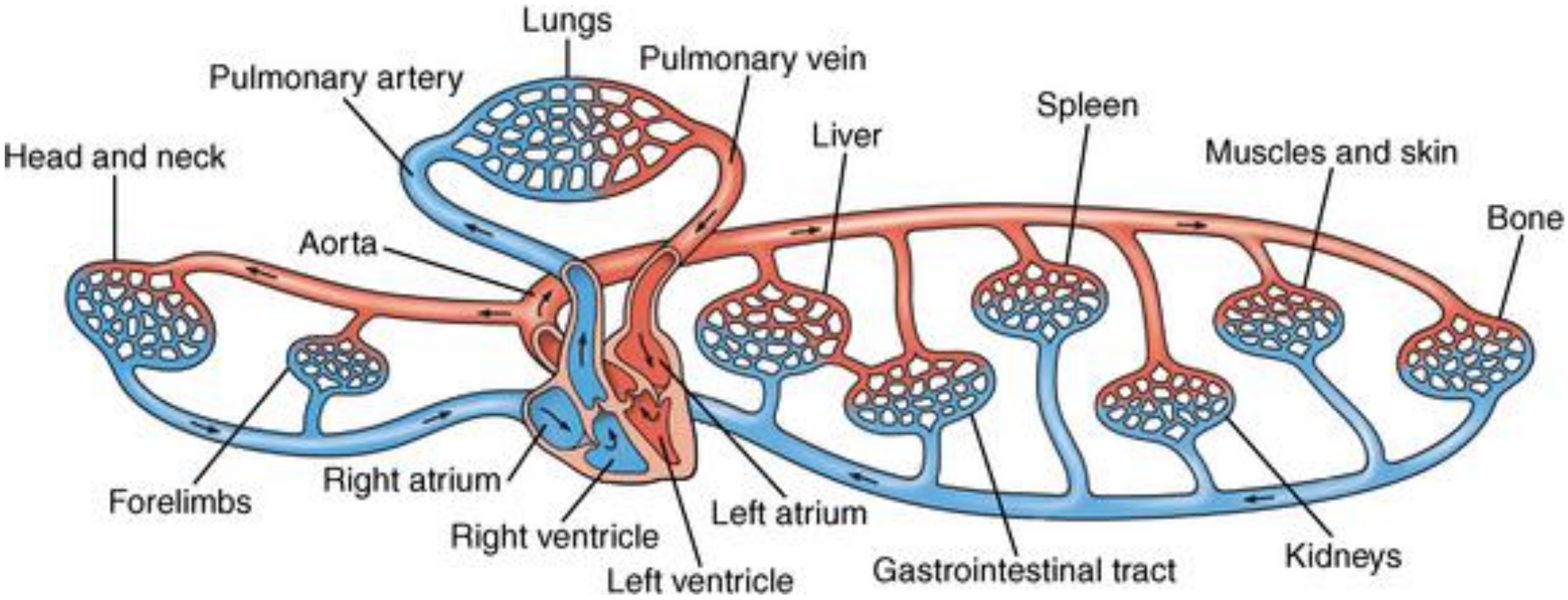
CAUSE

- Physiologic NOT pathologic (most cases)
  - Which means we can't treat it
  - The cause is being a racehorse
- Inflammatory Airway Disease?
  - Previously undetected



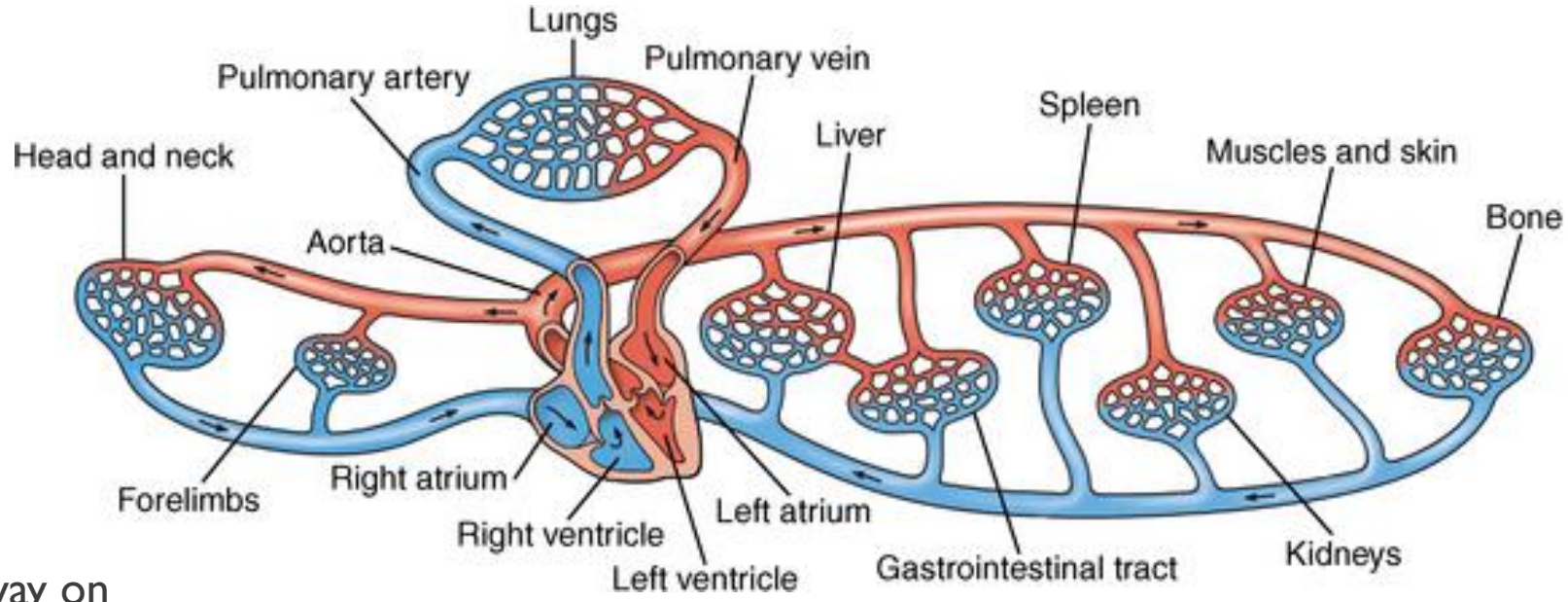
(Image sourced from Brandenburg Equine Therapy)

A BRANCHING HOSE



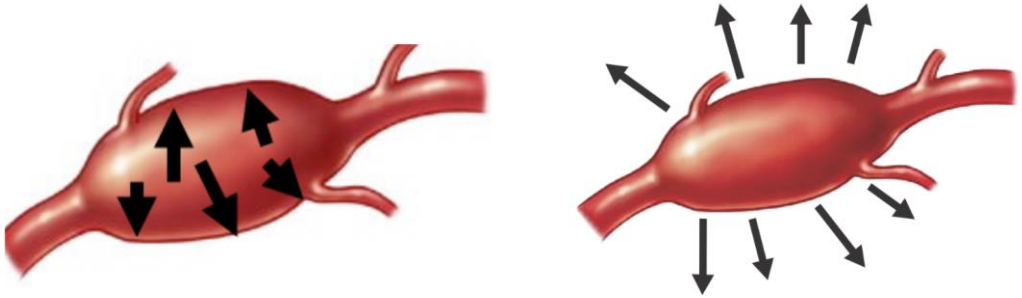
PHYSIOLOGIC RESPONSE TO EXERCISE

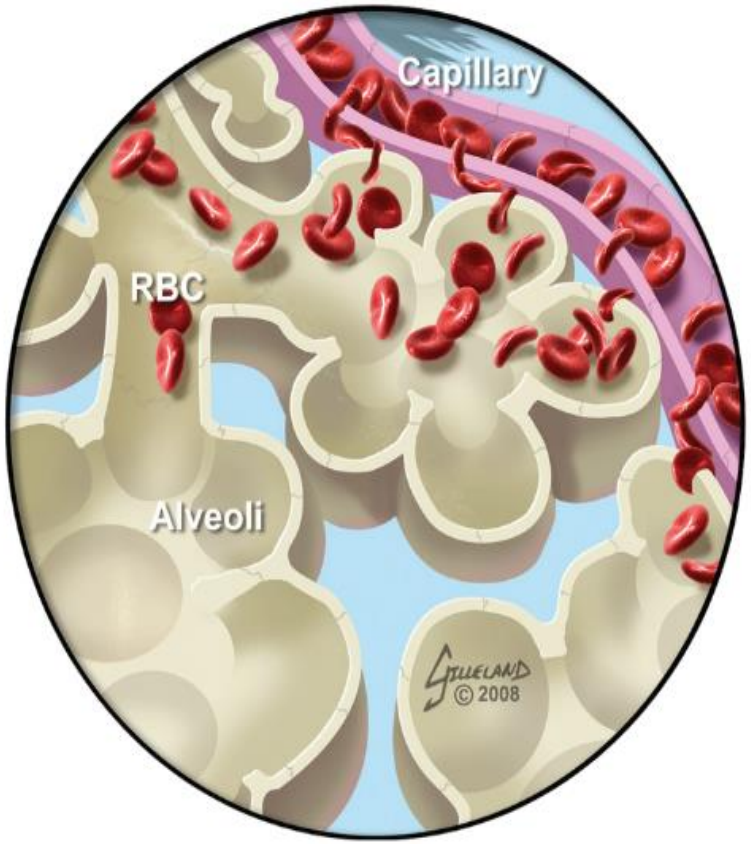
- Heart rate 200+ (normal = 40)
- Spleen contracts to release RBC
- Blood volume increases



- The trickling hose is turned all the way on
  - Increased pressure from the heart
  - Increased volume from the spleen

CAPILLARY RUPTURE




Capillary
RBC
Alveoli
© 2008

PHYSIOLOGIC BECOMING PATHOLOGIC

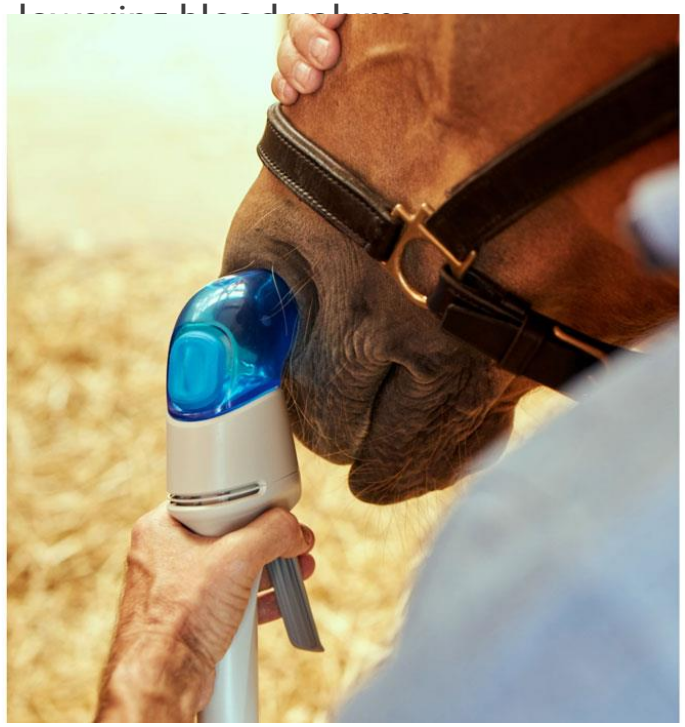
- Initially not caused by a disease, but…
- Blood is a great broth for bacterial growth → pneumonia
- Repetitive rupture may cause long term damage of the lungs
  - Bleeders tend to have shorter careers

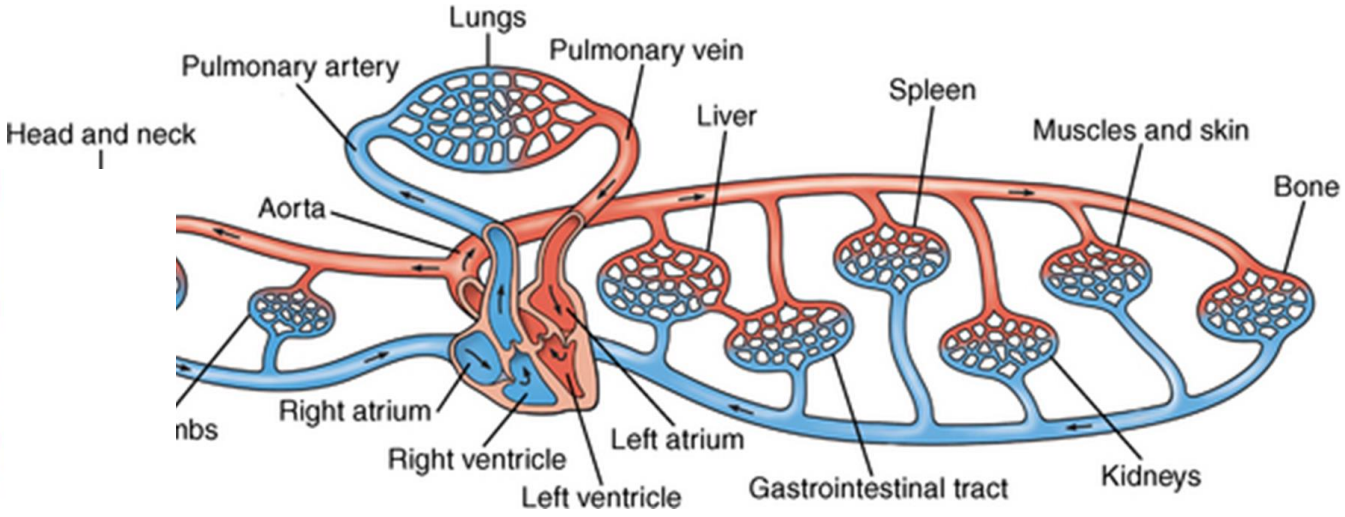
TREATMENT

- A new career
- +/- antibiotics in really bad bleeders (need to scope)

PREVENTION

- Furosemide (Lasix) IV 4hr prior to racing
  - Diuretic - lowering blood volume
  - I
    (
- Inha





PREVENTION

- Inhaled corticosteroids?

TAKE HOME POINTS

- EIPH is very common, but our knowledge of it is still very limited
- A horse with poor performance should be scoped to rule out "subclinical" bleeding
- We know that bleeding is a result of pushing normal physiology to the brink of failure
- There is no treatment
- Prevention focuses on manipulating the circulatory system

- Stay tuned….

- I'm sorry ☹

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