

Cardiac Diseases

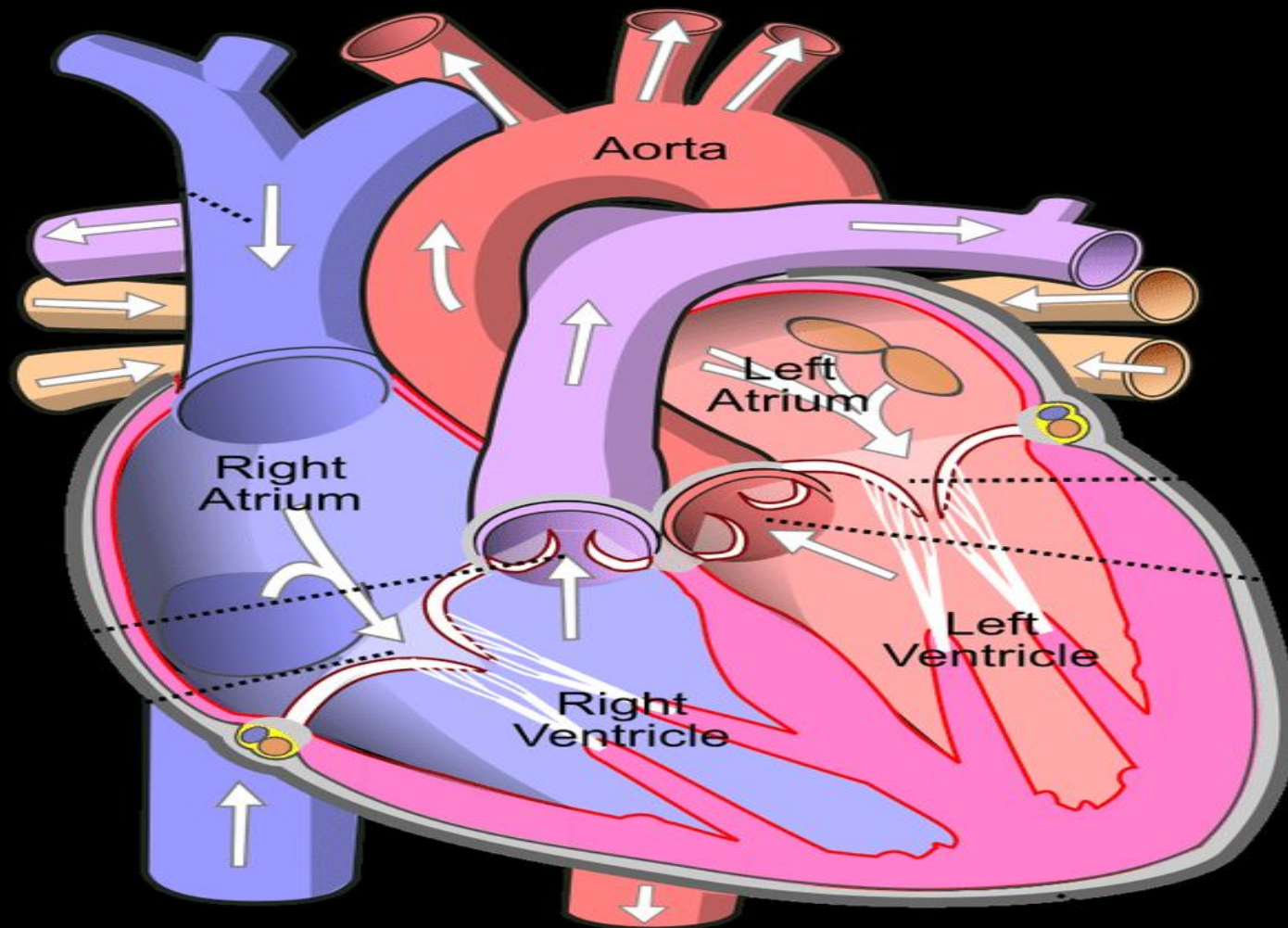


KEVIN CONRAD, DVM, CCRP

Cardiac Diseases

- Heart disease... #1 disease for humans in the United States
- Due to life style, poor diets, lack of exercise, high blood pressure
- Heart disease makes up 11% in canines...most acquired
- Congenital diseases make up only 5% of this population.
- By selecting dogs that do not exhibit these problems as breeders, **You impact this population** more than anyone else!

Anatomy



Common Cardiac Diseases

- **#1 Atrioventricular Valve disease** (Mitral valve dysplasia)

small breeds: Cavalier King Charles, Toy Poodles, Schnauzers, Lhasa Apso, Yorkshire Terriers, etc.

- **#2 Dilated Cardiomyopathy**

larger breeds: German Shepherds, Dobermans, Boxers, Great Danes

Causes include: Hypothyroidism, infectious endocarditis, age

- **#3 Congestive Heart Failure**

lots of causes...congenital diseases

VSD, or Tetralogy of Fallot

include SAS, PDA,

Symptoms

Coughing

Fatigue and weakness

Dyspnea (difficult
breathing)

Syncope (fainting)

Rapid or Irregular heart
rhythm

Distended abdomen

Diagnosis



Diagnostic Method
Physical exam and clinical signs
Cardiac auscultation
ECG
Echocardiogram, gold standard
Genetic testing, NT-proBNP (Embark)

Physical exam and clinical signs

Cardiac auscultation

ECG

Echocardiogram, gold standard

Genetic testing, NT-proBNP (Embark)

Treatment

Diet	Diet adjustment, low salt, low fat diets
Exercise	Limit exercise and try to prevent strenuous work
Diuretics	Decrease Preload... furosemide (Lasix) or spironolactone
Vasodilator	Decrease Afterload... ACE inhibitors (enalapril, benazepril), Norvasc (amlodipine), hydralazine
Positive Inotropes	Increase force... pimobenden, digitalis

Heritable Cardiac Conditions

- Patent Ductus Arteriosus
- Pulmonic Stenosis
- Subaortic Stenosis
- Tricuspid Valve Dysplasia

Patent Ductus Arteriosus

Most common Congenital disease

German shepherds (Maltese, Poodles, Pomeranians, Keeshound, Bichon Friese, Chihuahua)

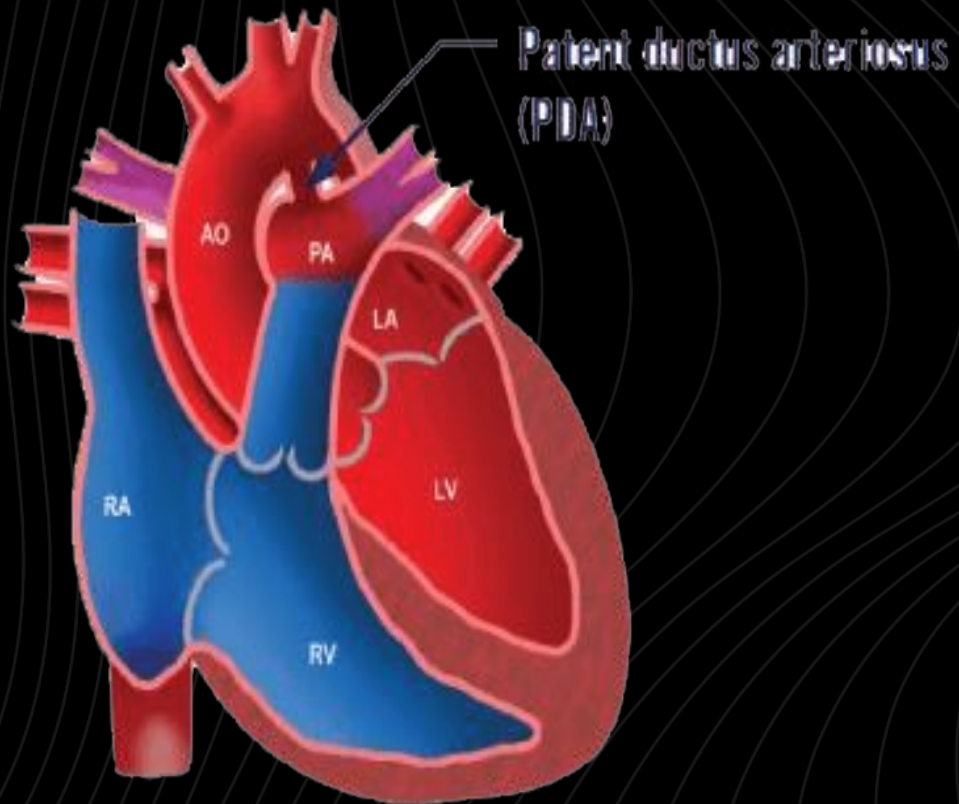
Large passage between the Aorta and Pulmonary Artery didn't close properly

More common in females, 50% mortality by 1 year of age

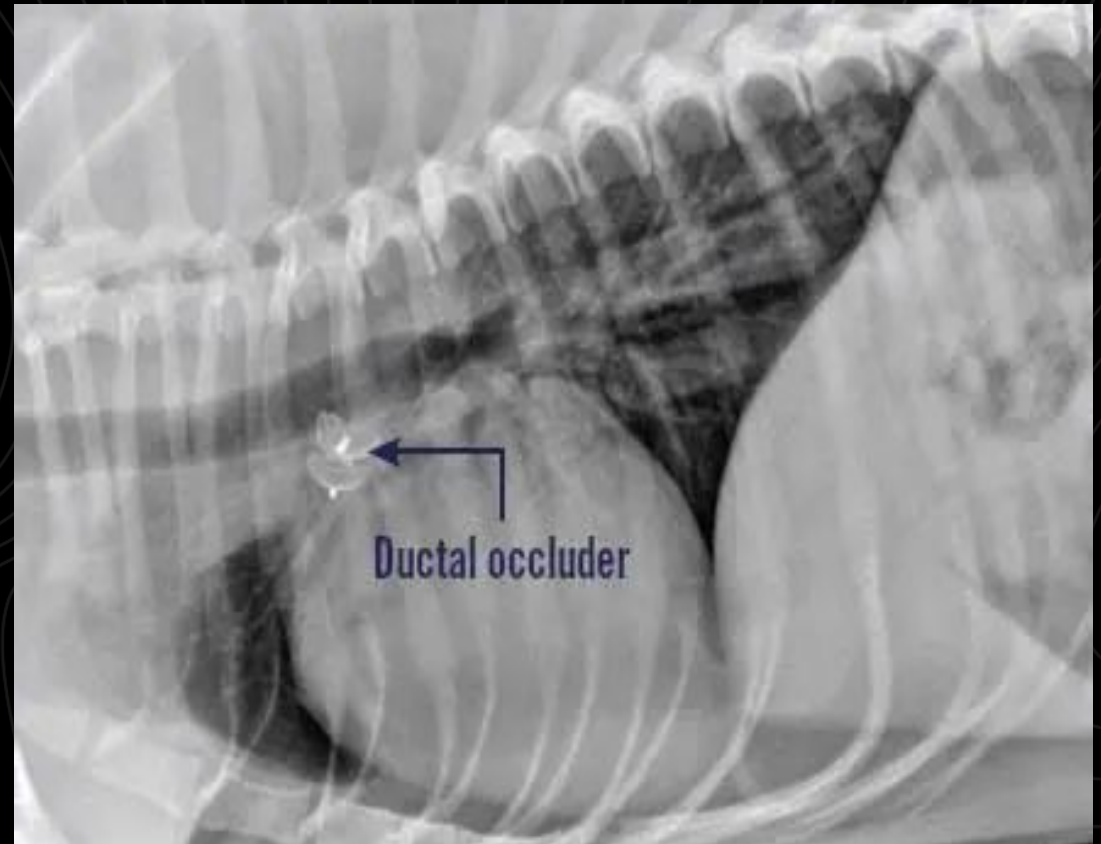
Treatment is Surgical ligation or Transvenous catheterizations

Patent Ductus Arteriosus

ANATOMY



TRANSVENOUS CATHETER



Pulmonic Stenosis

Second most common
Congenital Disease

Labrador Retriever
(Boxer, Newfoundland, West
Highland Terriers, Chihuwas,
Beagles, English Bulldogs)

A defect of the pulmonic
valve in the right ventricle
increasing resistance of
blood flow to the lungs

Leads to right sided
congestive heart Failure and
poor oxygenation of the
blood.

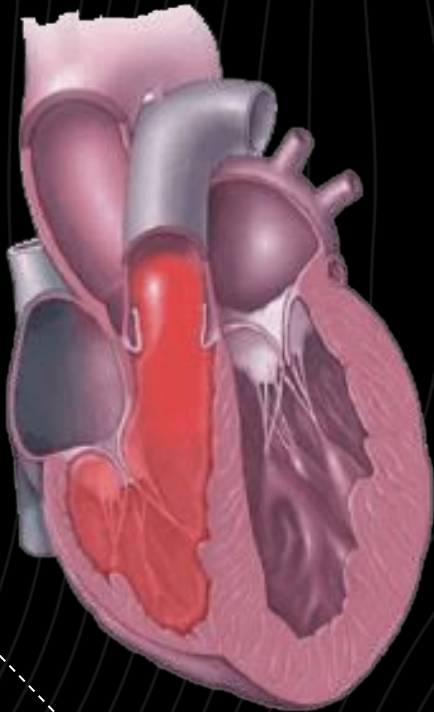
Echocardiogram is the gold
standard

Treatment: Meds for CHF,
Severe cases benefit from
Balloon Valvoplasty

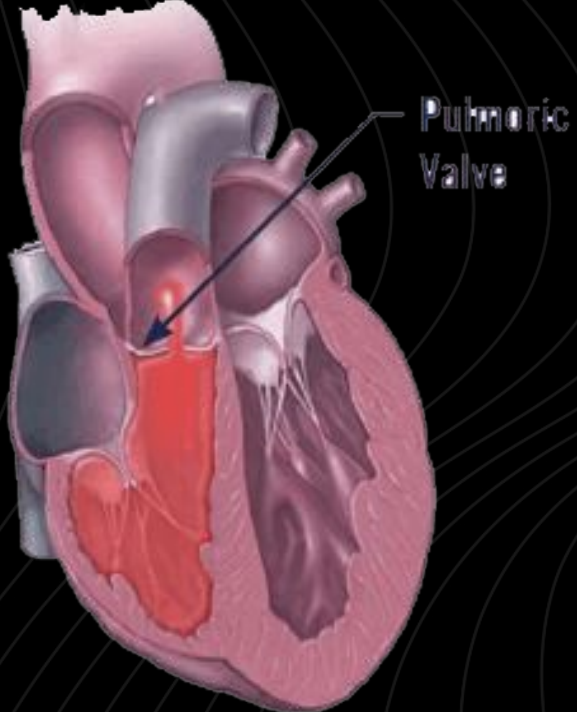
Pulmonary Stenosis

ANATOMY

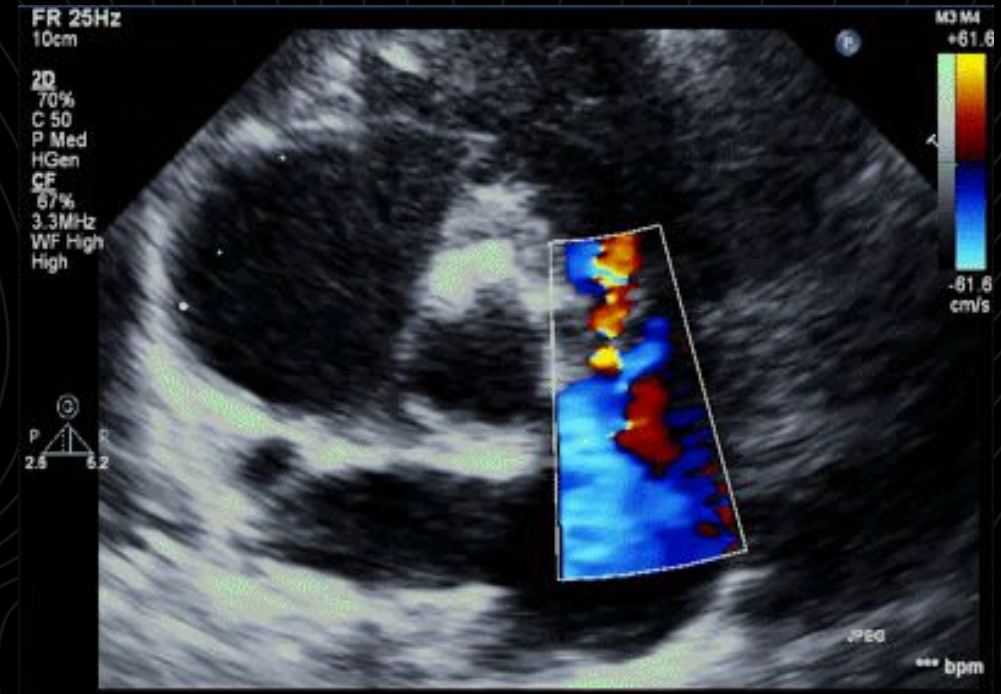
Normal Heart



Pulmonic Stenosis



ECHOCARDIOGRAM OF STENOSIS



Subaortic Stenosis

Golden Retrievers and German
Shepherds
(Newfoundland, Boxer, Rottweiler, E.
Bulldog, Great Dane, German
Shorthair Pointer)

Buildup of tissue below the aortic
valve, obstructs flow out to the rest of
the body... congestive heart
failure

Diagnosis: Echocardiogram;
murmurs may develop later New
genetic test from N.C. State studying
Newfoundlands

Prognosis is normal to sudden death.
Tends to progress rapidly early in
disease

Manage disease with antibiotics,
limited exercise, and Beta blockers
(atenolol, acebutylol, carvediol)

Subaortic Stenosis



Tricuspid Valve Dysplasia

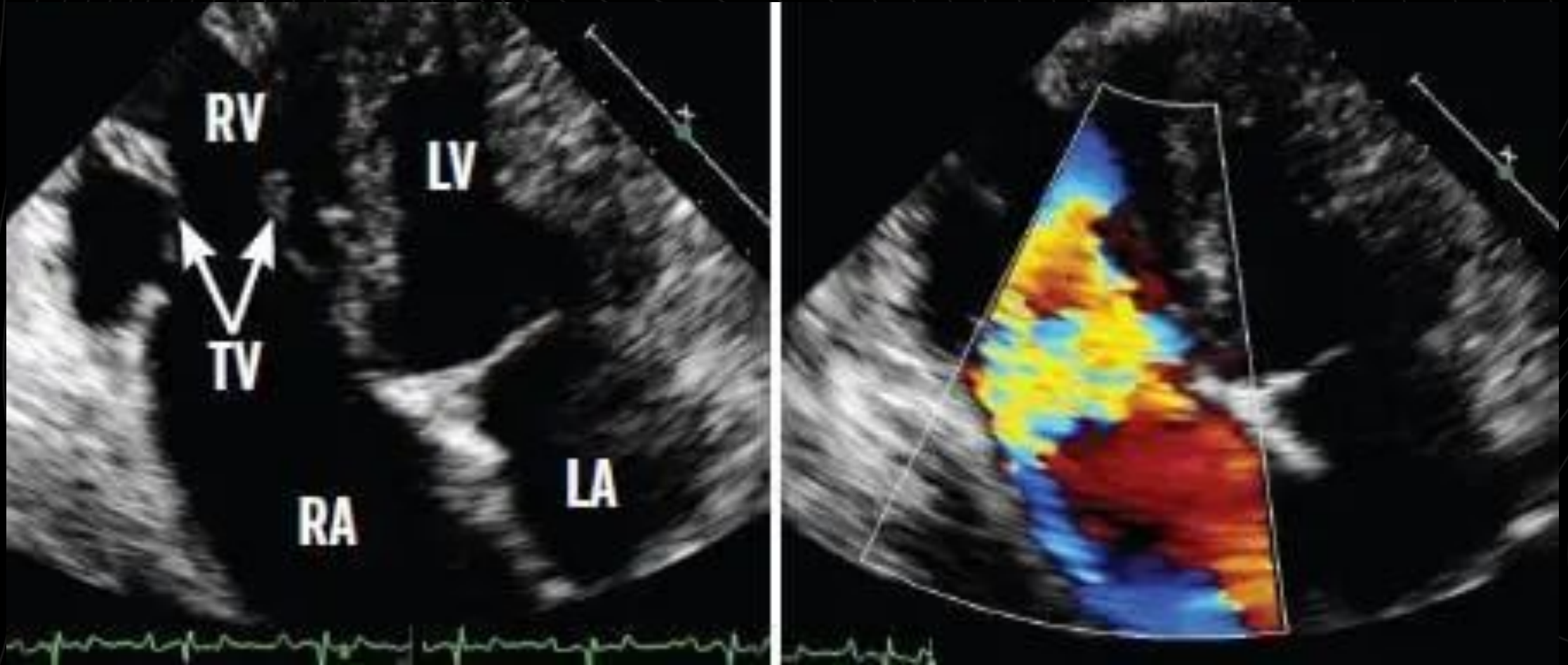
Uncommon Congenital disease (7%) but Labrador Retrievers make up 25% (also German Shepherds, Irish Setters, Great Danes)

Malformation of the valves of the right side of the heart causing dilation of the heart, poor circulation, and a distended abdomen.

Diagnosis: may be able to auscult a murmur, echocardiogram is the gold standard

Treatment is meds for congestive heart failure. Many are normal, but if severe, progression happens in first couple years.

Tricuspid Valve Dysplasia



Cardiac Diseases

- Golden Retriever: Subaortic Stenosis
- Labrador Retriever: Pulmonic Stenosis

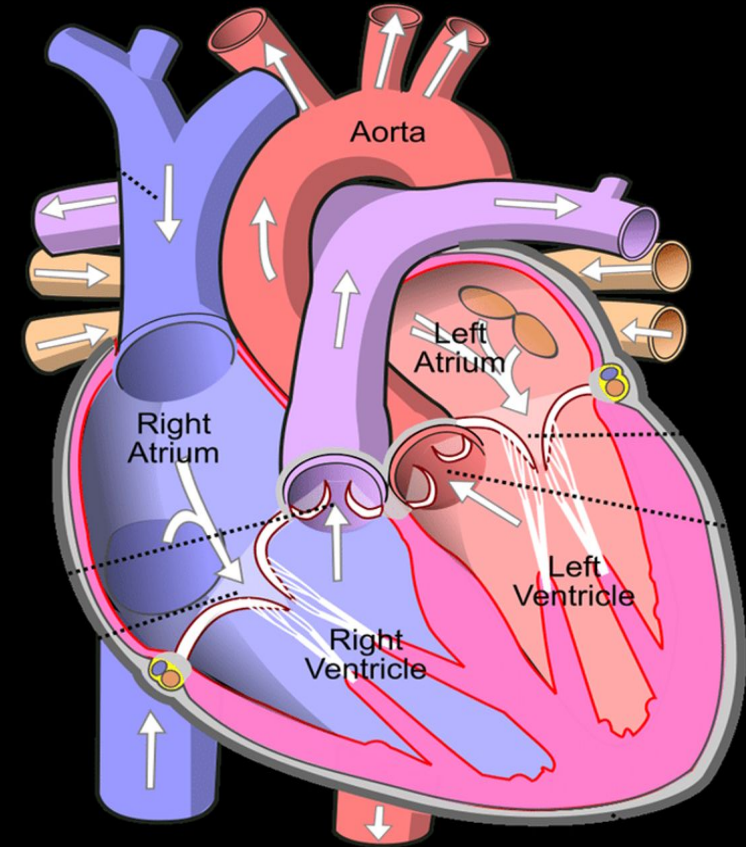
Tricuspid Valve Dysplasia

- German Shepherd: PDA

Pulmonic Stenosis

Subaortic Stenosis

Tricuspid Valve Dysplasia



Cardiac Diseases

ANY QUESTIONS?