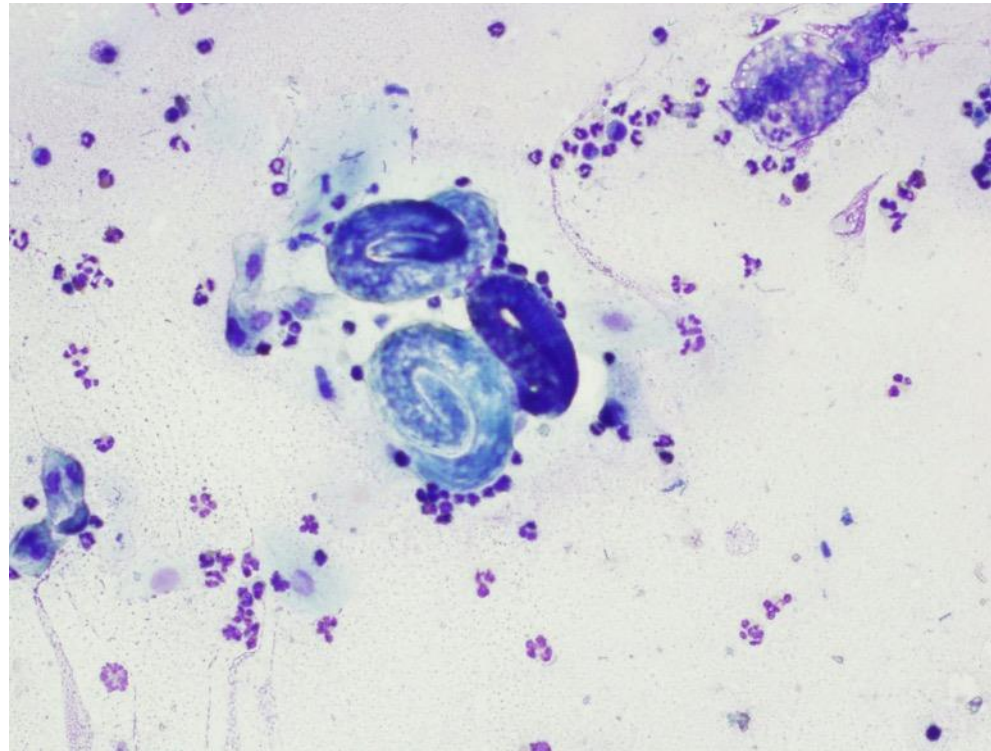


Lungworm

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Lungworms

- *Angiostrongylus vasorum*
 - French heartworm
- *Crenosoma vulpis*
 - Fox lungworm
- *Aelurostrongylus abstrusus*
 - Cat lungworm



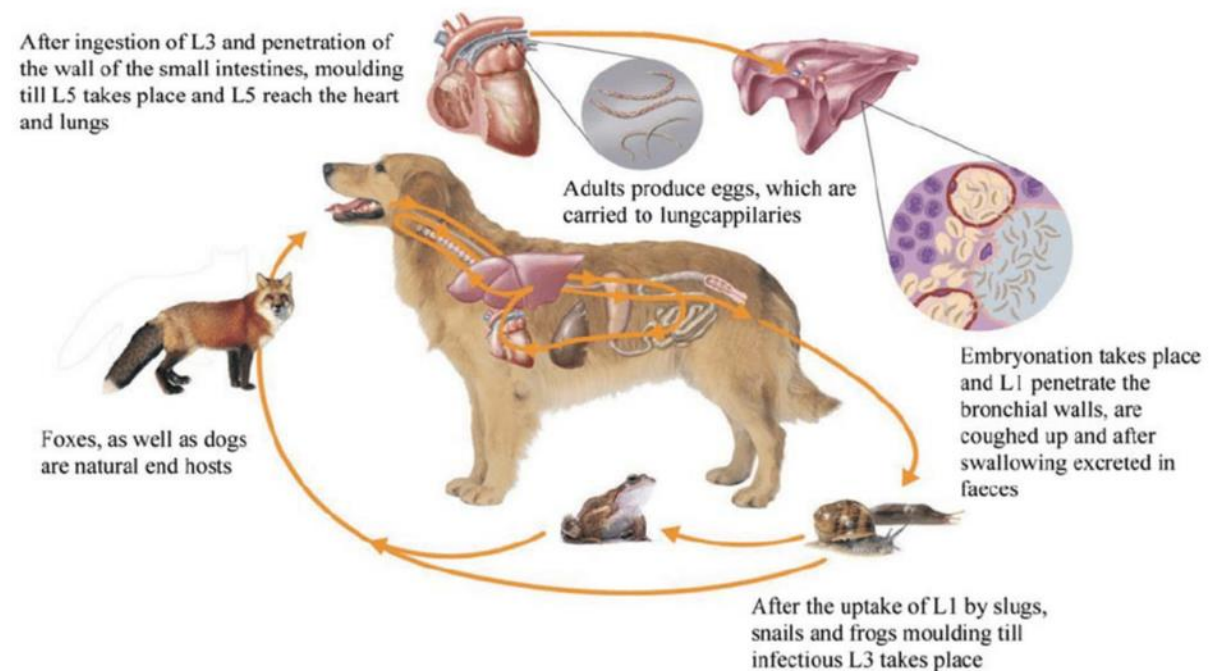
Angiostrongylus Pathogenesis

- Lungworm
- Metastrongylid (roundworm)
- Snail or slug is intermediate host
- Dogs infected by eating L3 larvae in IMH
- Worms live in pulmonary artery



Lifecycle

- Dogs ingest IMH (snail or slug) or paratenic host (frog)
- L3 released into intestine & migrate to pulmonary vasculature
- Mature to adults & lay eggs
- L1 migrate to alveoli
 - Coughed up & swallowed
 - Excreted in faeces



From Bayer Animal Health

Signalment

- Mostly young dogs <2yrs
- SBT and CKCSp over represented
 - Defect in local immunity?
- Greyhounds?
- Urban or suburban



Clinical Signs

- Cardiorespiratory
- Coagulopathic
- Neurologic



Cardiorespiratory Signs

- Coughing
- Dyspnoea
- Syncope
- Haemoptysis
- Tachypnoea
- Exercise intolerance
- Ascites
- Pulmonary hypertension



Coagulopathic Signs

- Haemothorax
- Subconjunctival haemorrhage
- Cutaneous
- Retroperitoneal
- Abdominal
- Mediastinal
- Oral
- Gastrointestinal



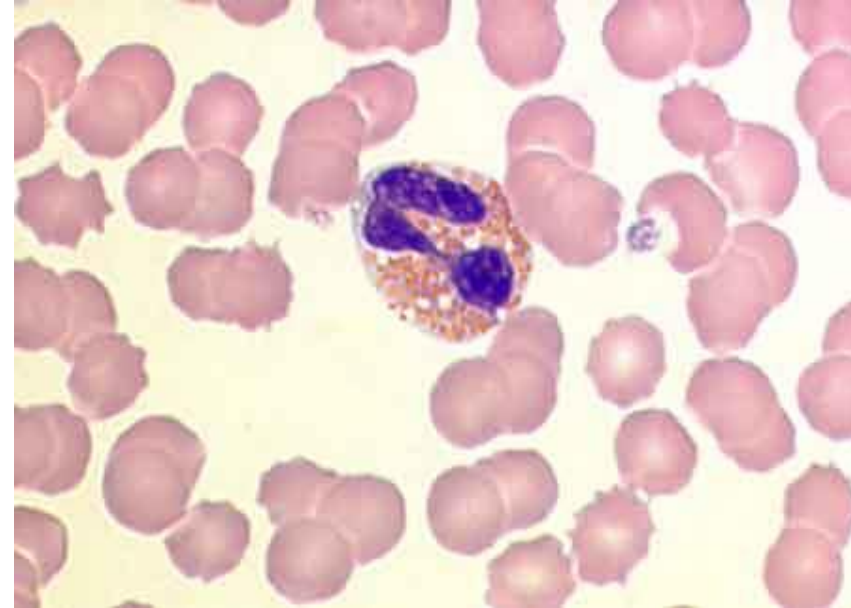
Neurological Signs

- Hindlimb paresis/paralysis
- Hypermetria
- Ataxia
- Circling
- Seizure
- Depression
- Nystagmus
- Strabismus



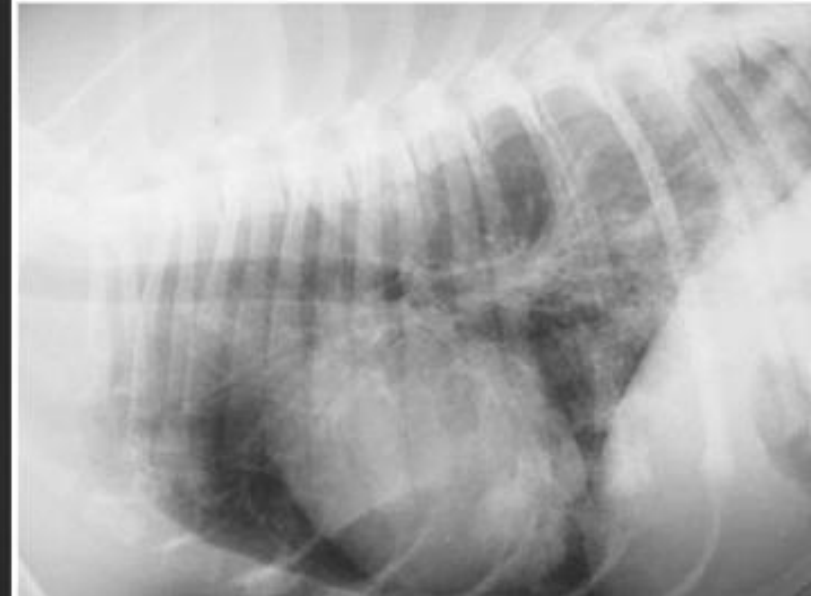
Clin Path findings

- Anaemia
- Thrombocytopenia
- Eosinophilia
- Coagulopathy
 - Prolonged PT
 - Prolonged APTT
- Hypercalcaemia

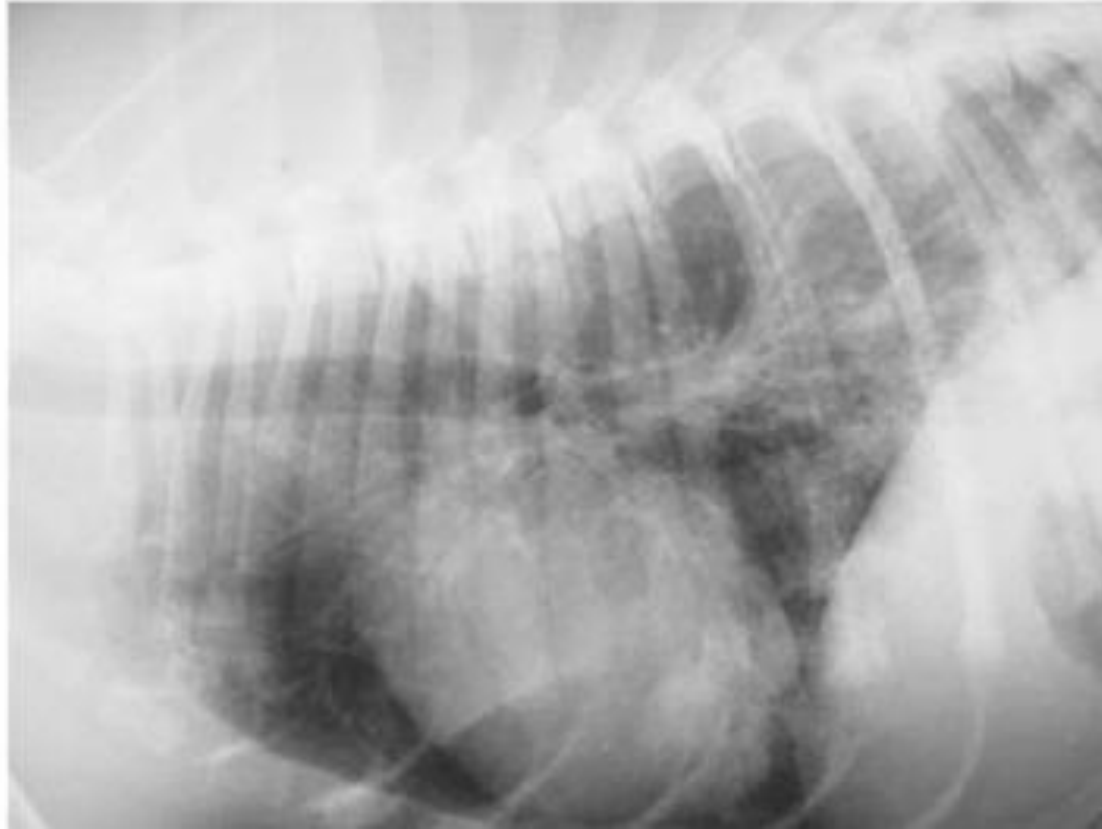


Thoracic radiographs

- Bronchointerstitial pattern
- Dorsocaudal distribution
- Right sided cardiac enlargement

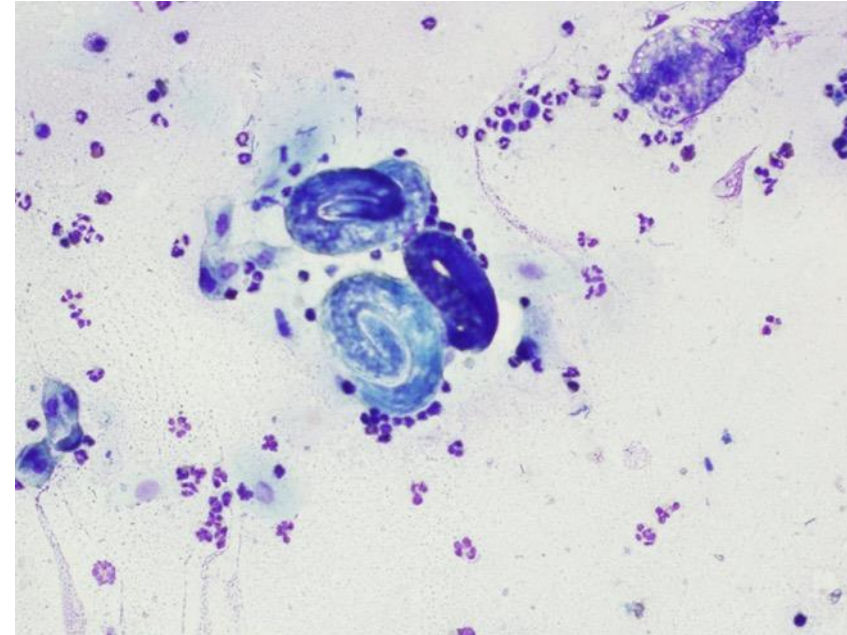


Angiostrongylus



Bronchoscopy

- Bronchial haemorrhage
- BAL should be performed



Diagnosis- Angiostrongylus

- Angiodetect
 - High sensitivity
- Fresh faecal smear
 - Low sensitivity
- Baermann's
 - 3 faecal samples
 - L1 larvae
 - 24-48hr test
- BAL



Angiodetect

- Serum or plasma
- Doesn't cross react with other nematodes e.g. Crenosoma
- 98.1% sensitive
- 99.4% specific
- Takes 80 days to become positive



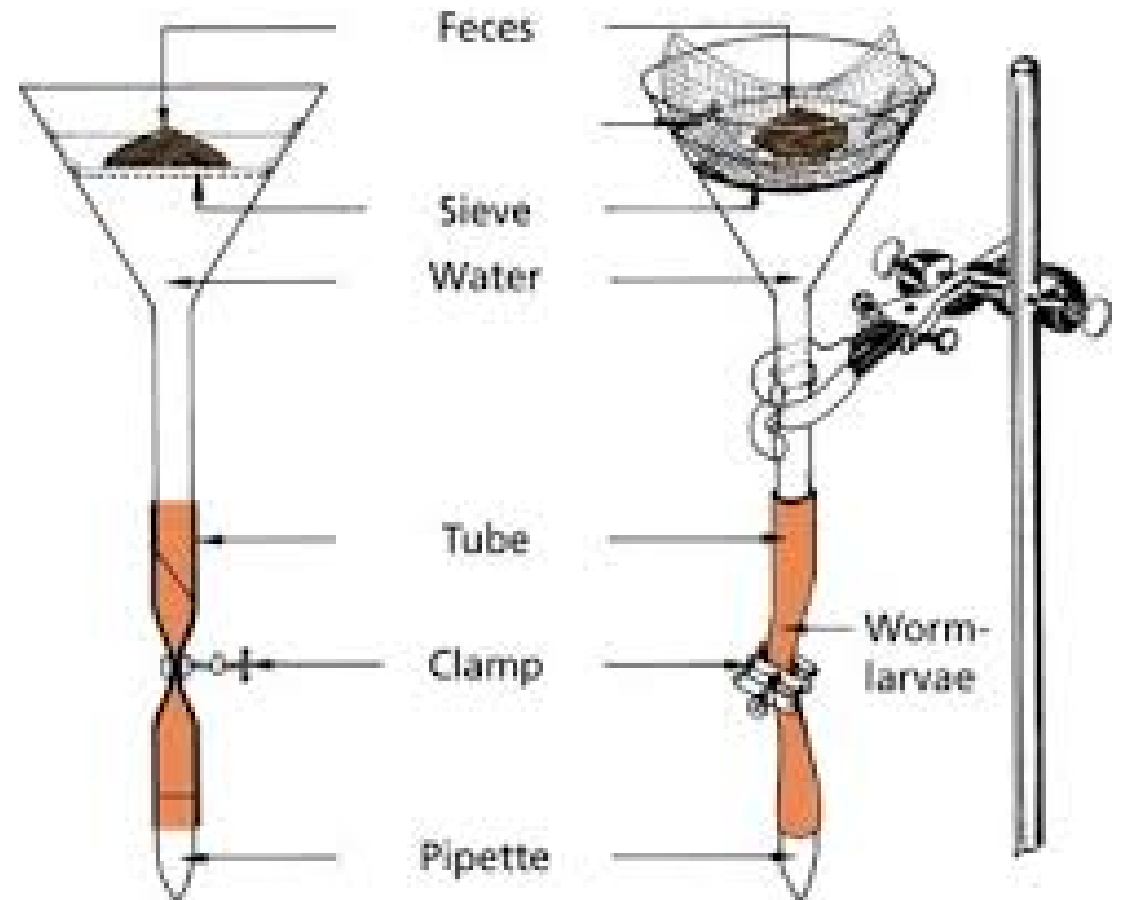
Fresh faecal smear

- Small amount faeces mixed with tiny volume of water
- No coverslip
- Examine under microscope
 - x20



Baermanns

- Fresh sample
 - Faeces suspended in water
 - Larvae move into water
 - Sink to bottom and identified
-
- Will identify:
 - Angiostrongylus
 - Crenosoma Vulpis
 - (Strongyloides)



Lungworm Larvae

S-shaped curve in tail
Dorsal spine

Angiostrongylus vasorum



C-shaped
Slight deflection to tail but no kink or spine

Crenosoma vulpis



Treatment Options

- Angiostrongylus
 - Imidacloprid & moxidectin
 - Repeat Tx 1 month later
- Fenbendazole (unlicensed)
 - 50mg/kg PO q24h for 10-21 days
- Milbemycin
 - Weekly for 4 weeks



Comparison of Tx

Imidacloprid/moxidectin

- Apply and repeat 4 weeks later
- Repeat angiodetect at 6wks
- 85.2% effective
- 100% efficacy with second dose

Fenbendazole

- 50mg/kg PO daily for 7 days
- Repeat Tx may be necessary
- 91.3% effective

Supportive Care

- Oxygen therapy
- FFP
 - If risk of life threatening haemorrhage



Prognosis

- Should be good in most cases
- Poorer prognosis if CNS signs e.g. seizures or coma



Prevention

- Advocate
 - Monthly application
- Milbemax
 - Monthly



