

Radiologia del polmone

Massimo Vignoli

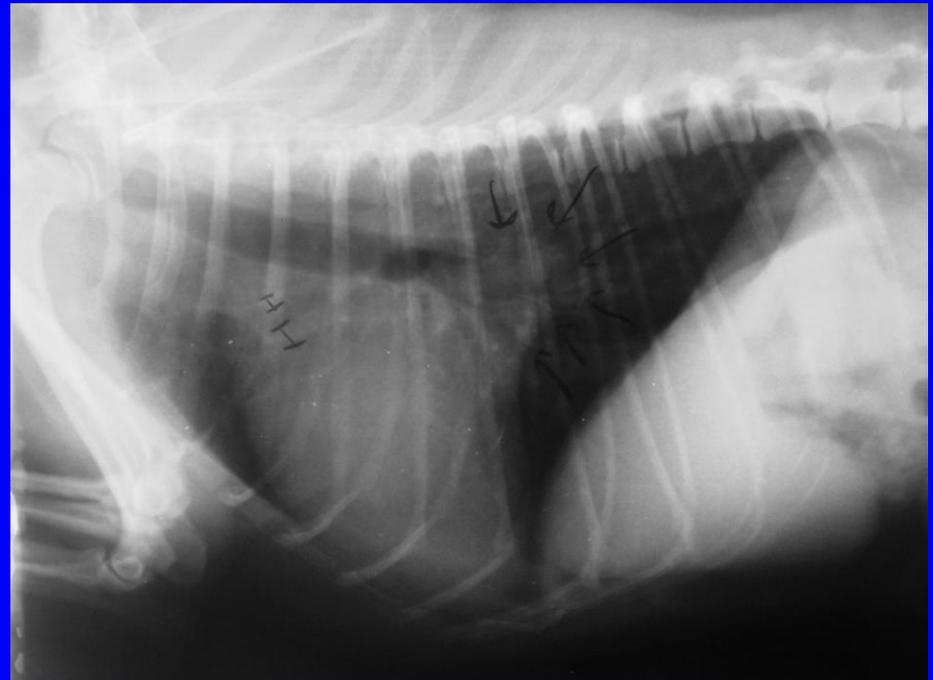
Do you remember?

Patterns

- Vascolare
- Bronchiale
- Interstiziale
- Alveolare
- Misto

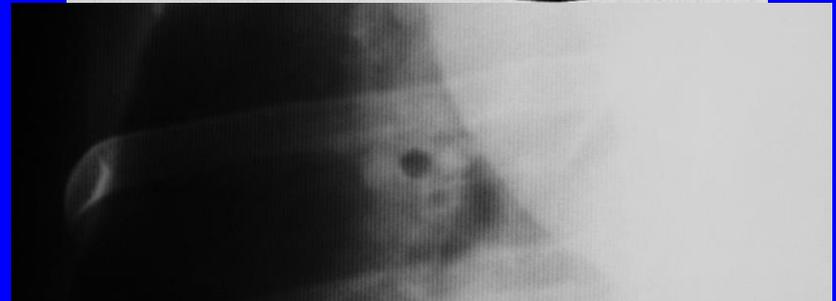
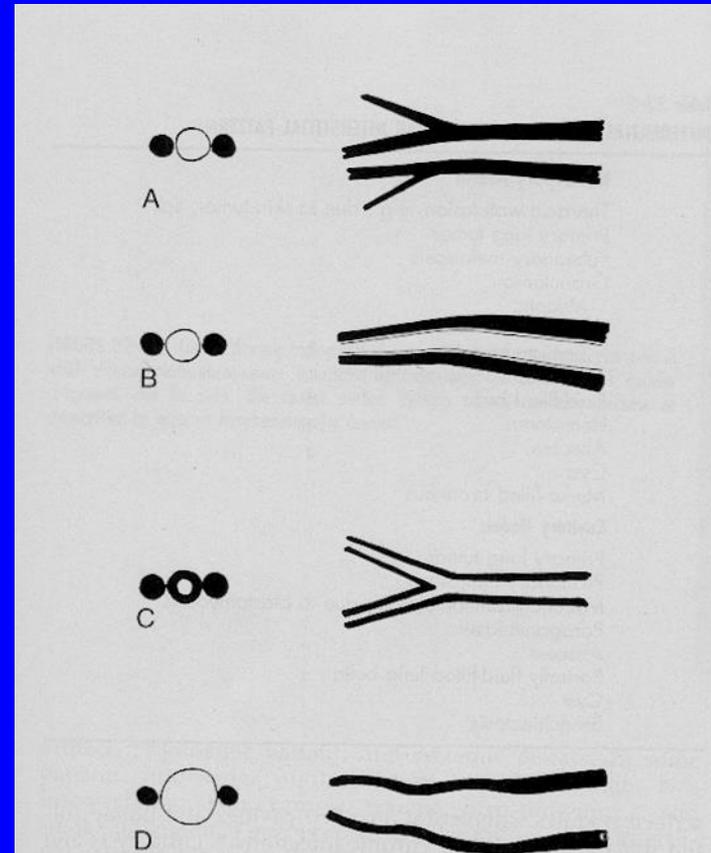
Pattern vascolare

- Modificazioni di dimensioni, forma, numero delle arterie/vene polmonari.
- Confronto con strutture scheletriche
- Confronto componente arteriosa/venosa



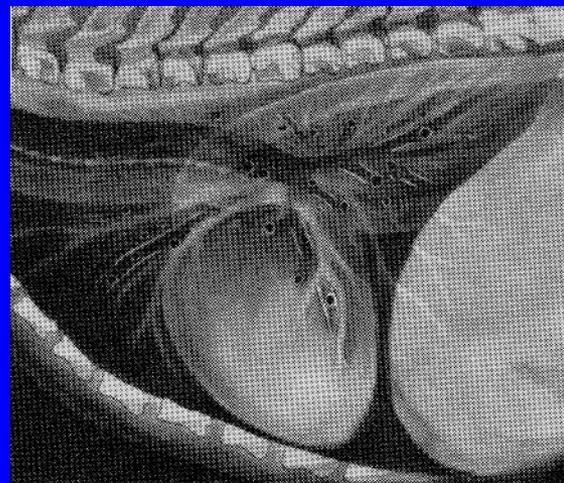
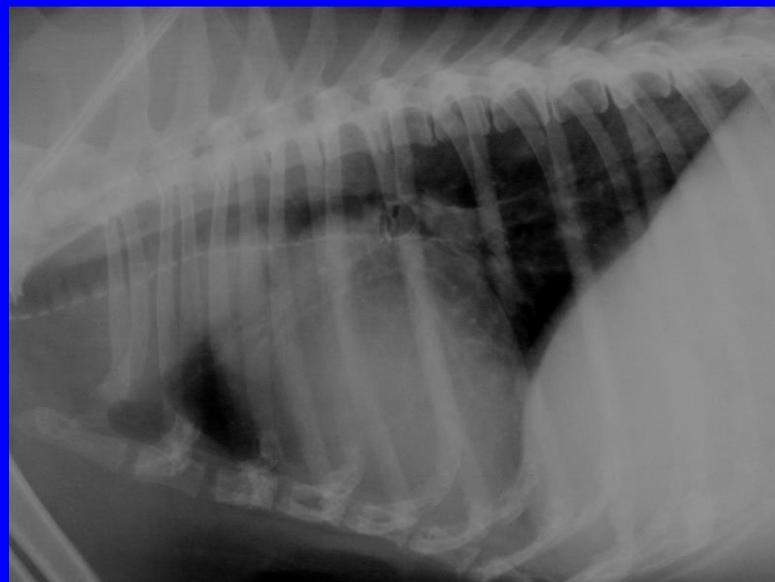
Pattern bronchiale

- Materiale liquido o cellulare a livello delle pareti bronchiali, del tessuto connettivo peribronchiale e perivascolare.
- Immagini a binario convergenti o di tipo rotondeggiante causate dall'ispessimento della parete bronchiale, più facili da identificare nei bronchi colpiti trasversalmente
- Dilatazioni dei bronchi (bronchiectasia tubulare o sacciforme)
- Reperto comune nei cani anziani e privo di significato clinico.



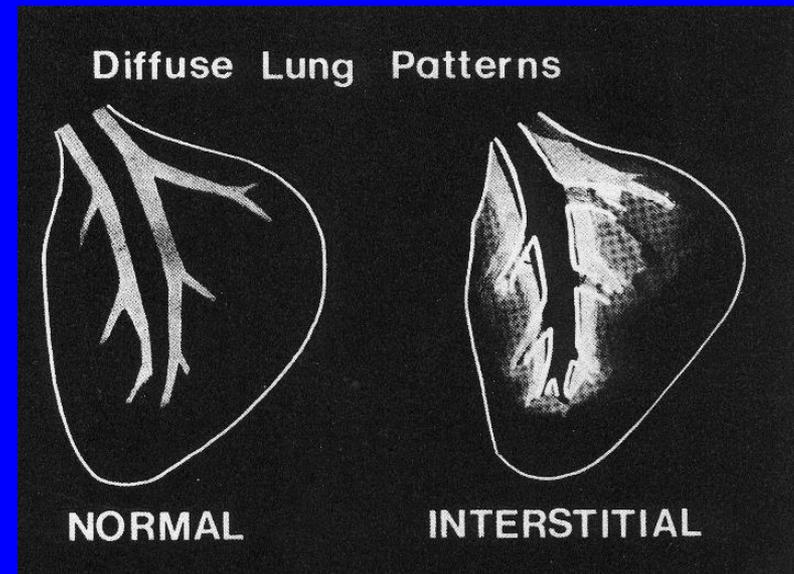
Pattern bronchiale

- Bronchite cronica (virale, allergica, batterica)
- Infiltrato peribronchiale (edema o broncopolmonite)
- Calcificazione bronchiale
- Bronchiectasia

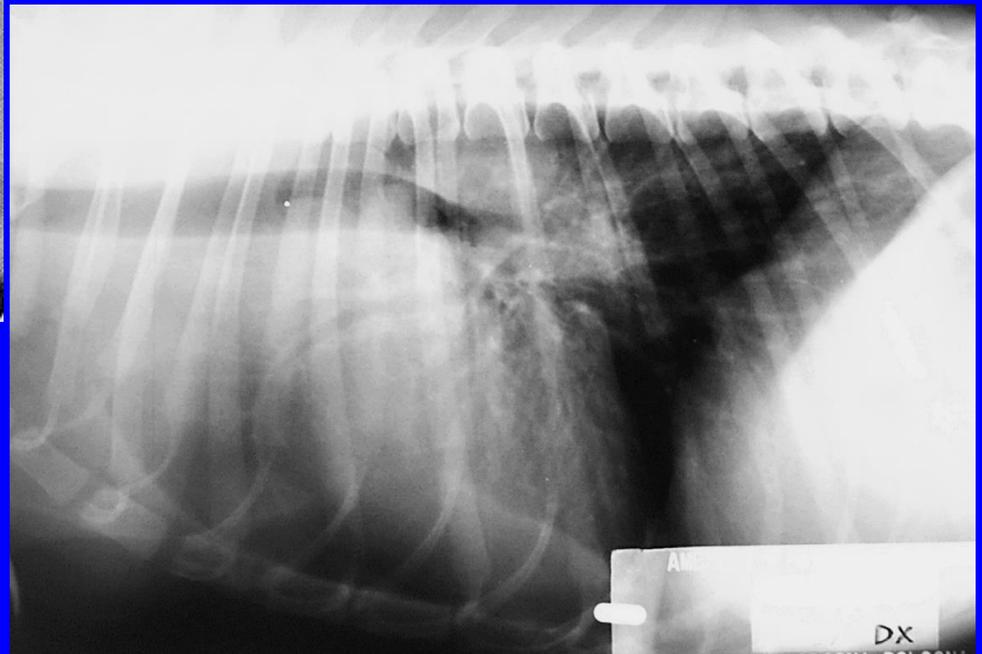
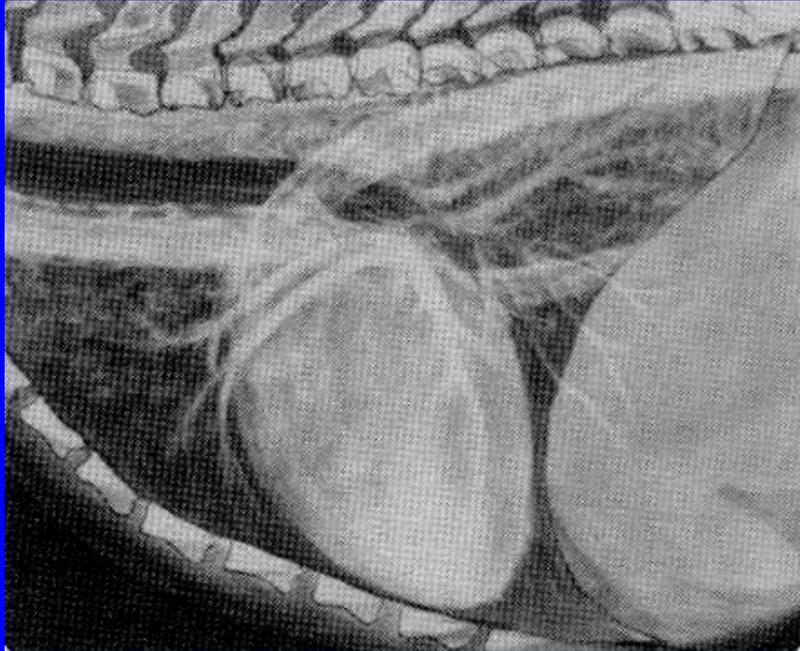


Pattern interstiziale

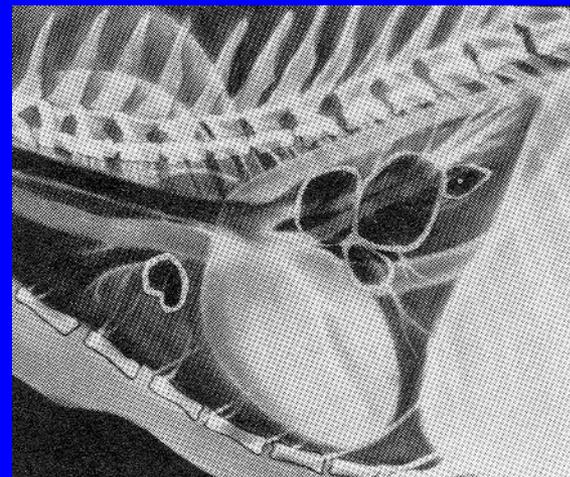
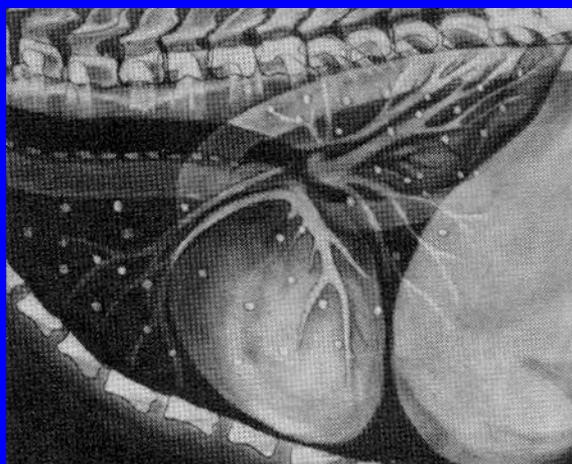
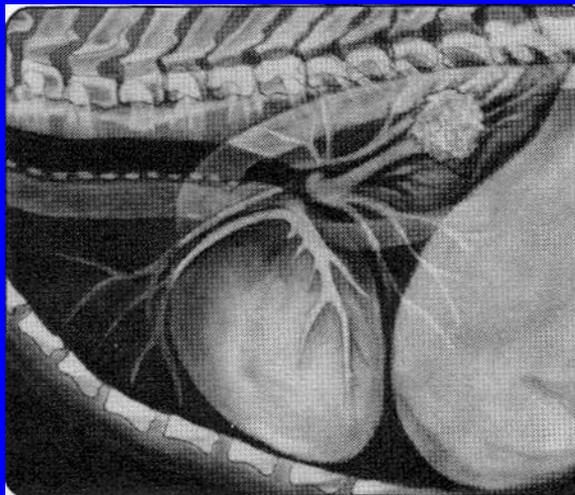
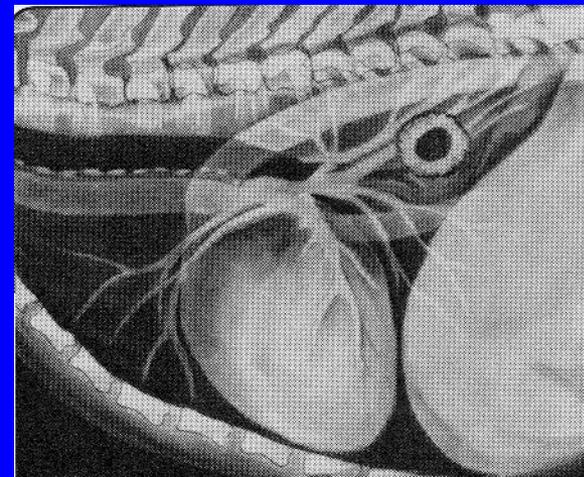
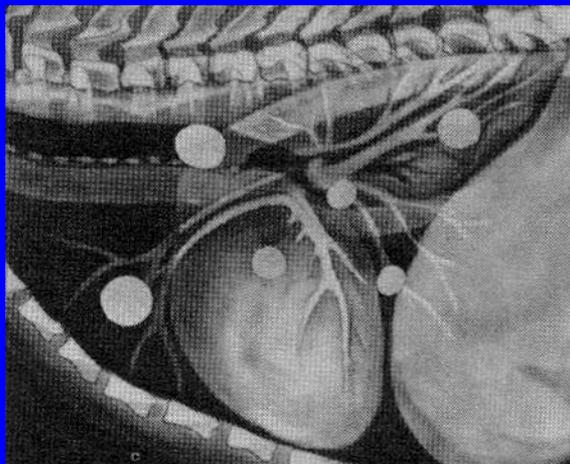
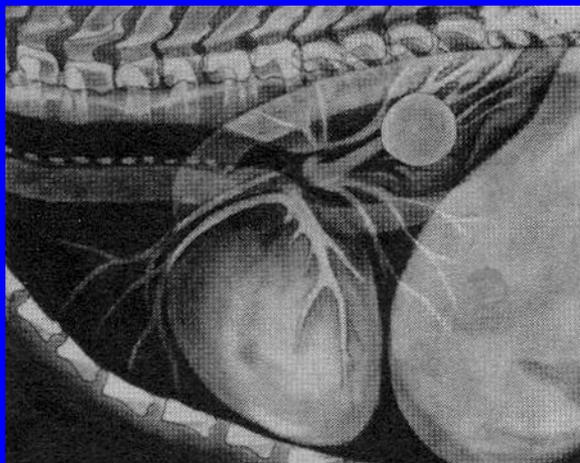
- Liquido o materiale cellulare nell'interstizio
- Strutturato lineare/reticolare
- Non strutturato "hazy"
- Nodulare



Pattern interstiziale



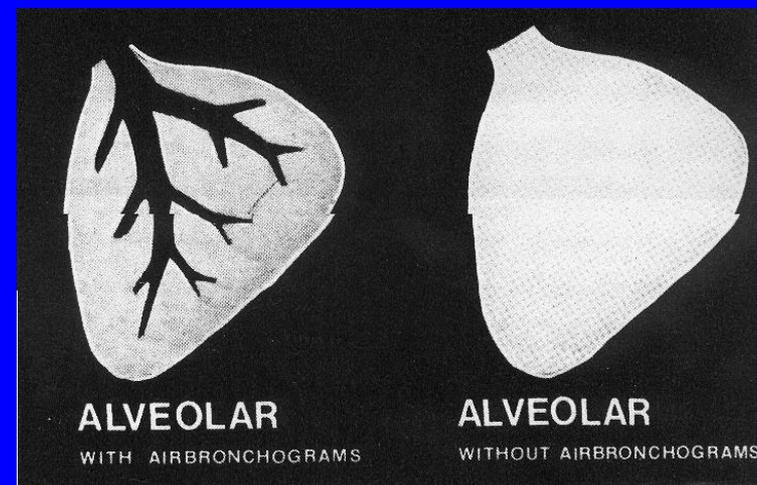
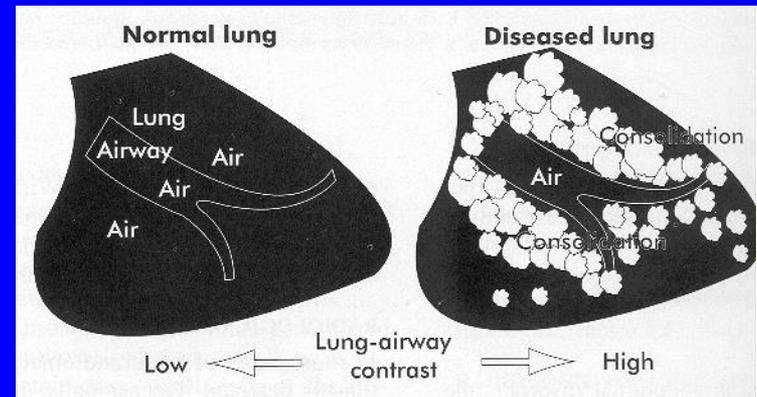
Pattern interstiziale



Pattern alveolare

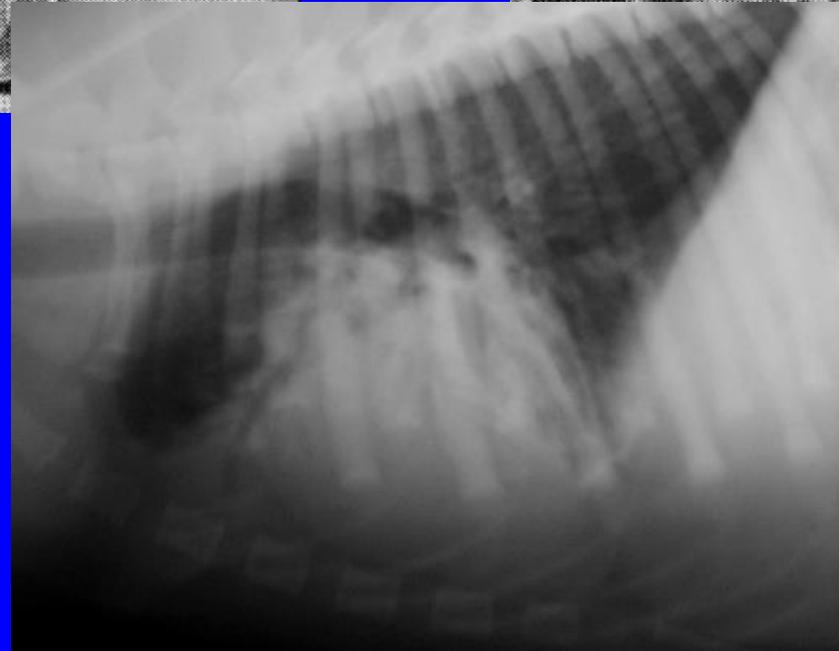
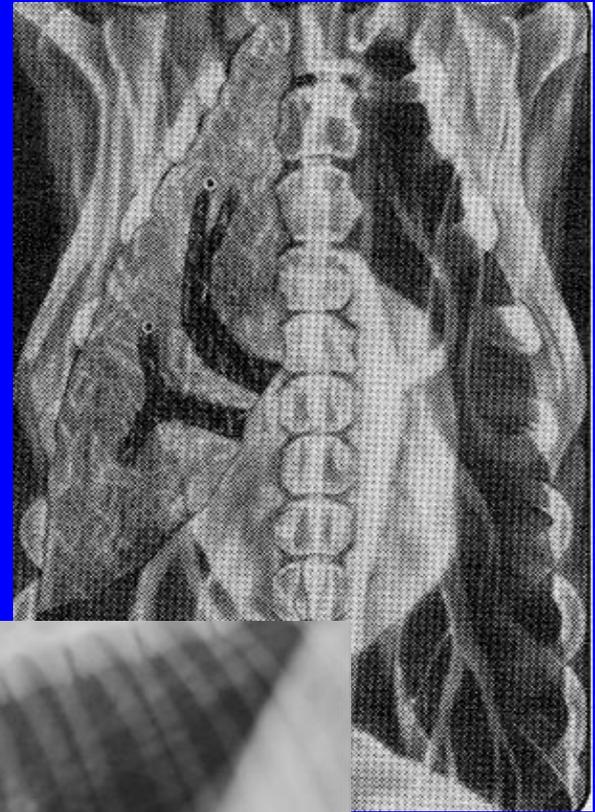
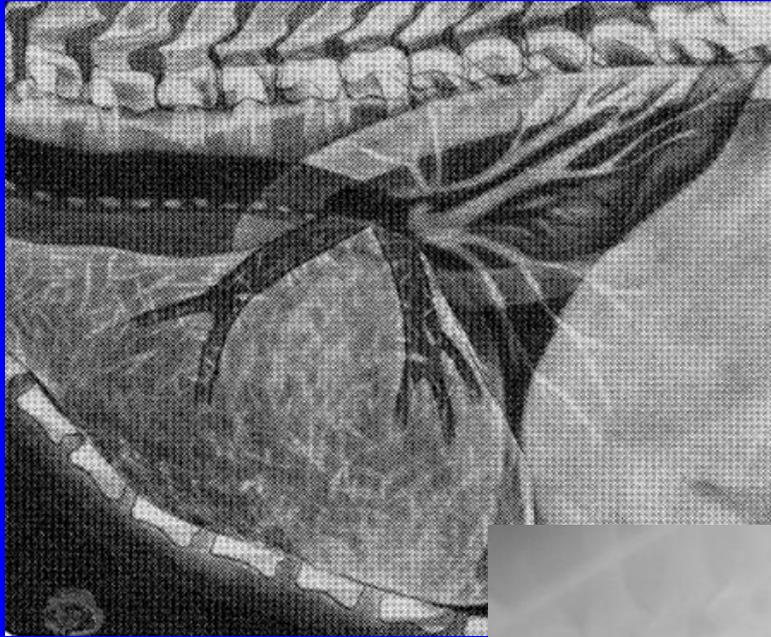
- Riempimento degli acini polmonari con materiale liquido (trasudato, sangue, pus) o cellulare
- Radioopacità a margini sfumati, cotonosi; a margine netto se interessato tutto il lobo polmonare.
- Broncogrammi aerei

Da Farrow, "Radiology of the cat"



Da Suter "Thoracic radiography"

Pattern alveolare



Distribuzione delle patologie

- Edema cardiogenico
 - cane periilare
 - gatto lobi caudali (> ventralmente)
- Edema non cardiogenico lobi caudali

Distribuzione delle patologie

- Emorragia asimmetrica
- ARDS diffusa a tutti i campi polmonari
- Linfoma disseminato simmetrico
- Polmonite batterica cranioventrale
- Polmonite da aspirazione ventrale, lobo medio dx
- Polmonite micotica perilare
- PIE + filariosi > lobi caudali
- Tromboembolismo asimmetrico, periferico, lobi caudali

Distribuzione delle patologie

- Carcinoma broncoalveolare lobi caudali, asimmetrico
- Metastasi linfangitiche o settali alveolari simmetriche, lobi caudali
- Patologie immunomediate lobi caudali, simmetriche
- Torsione di un lobo > medio dx e craniale sn

Patologie vie aeree inferiori non ostruttive

- Patologie virali acute + event compl batterica
- Tosse dei canili
- Patologie parassitarie
- Allergie
- Irritanti
- Corpi estranei

Patologie vie aeree inferiori ostruttive

- **Ostruzione morfologica:**
 - completa → atelectasia/collasso
 - incompleta → air trapping
- **Ostruzione funzionale:**
 - spasmo piccole vie aeree (asma, allergia, ipossia)
- **Ostruzione dinamica**
 - < rigidità parete trachea e bronchi principali → collasso tracheale espiratorio
 - < stabilità parete piccoli bronchi e perdita di trazione del parenchima per tenere aperte le vie aeree → collasso espiratorio, air trapping (bronchiectasia) → enfisema
- **Combinazione delle varie ostruzioni**

Patologie vie aeree inferiori

Ostruzione morfologica

- Aumento radiopacità e diminuzione Vol (complete)
- Aumento radiotrasparenza (se c'è ventilazione collaterale o se incomplete) → air trapping per collasso in espirazione

Patologie vie aeree inferiori

Ostruzione funzionale

- Aumento radiotrasparenza e aumento Vol (“barrel chest”)
- Bronco costrizione

Patologie vie aeree inferiori

Ostruzione dinamica

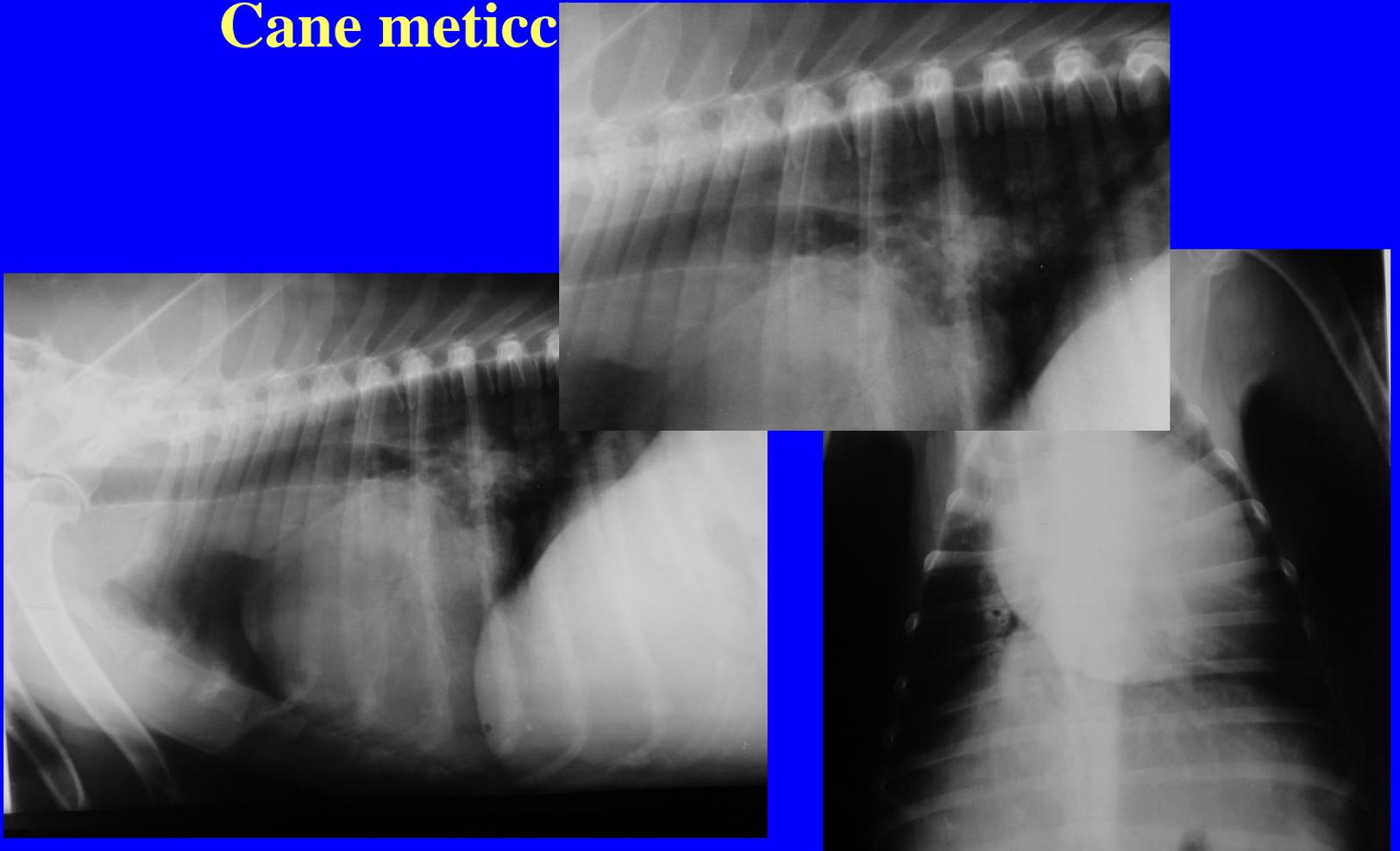
- Collasso trachea e bronchi principali:
- Bordi irregolari in espirazione, normali in inspirazione

- Collasso vie aeree periferiche:
- Normale radiopacità o aumento di radiotrasparenza e aumento focale di radiopacità (se si collassano zone di vie aeree)

Circolazione collaterale

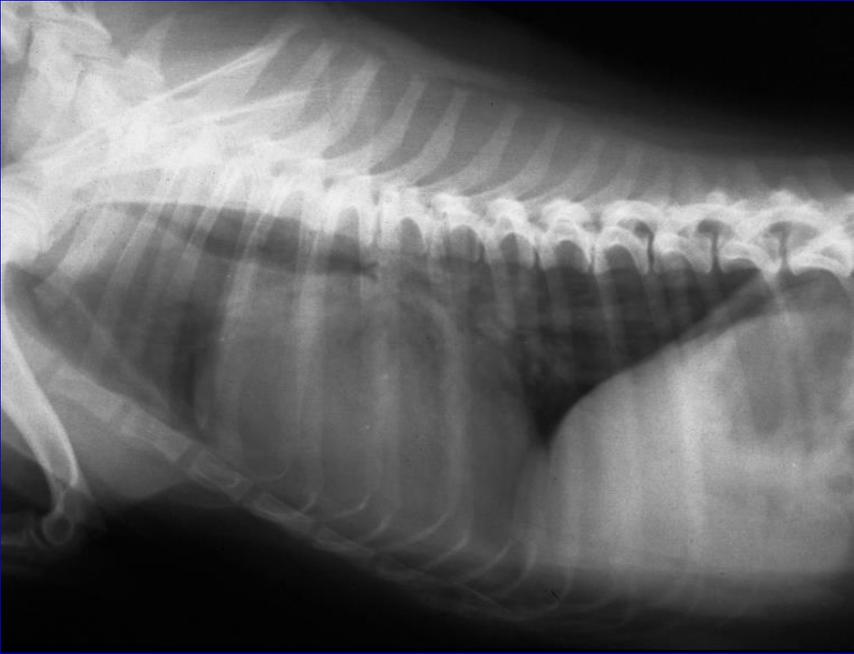
- Permessi dai pori di Kohn, canali di Lambert e solo nel cane anastomosi tra piccole vie aeree
- Previene collasso lobare
- Fino al 10% dell'aria può essere scambiata attraverso questo meccanismo
- Meccanismo attivo solo in inspirazione no in espirazione (nell'iperventilazione)
- Sindrome del lobo medio elevato rapporto sup pleur:V lob area di contatto intersegmentale minore e quindi ventilazione collaterale minore rispetto ad altri lobi

Cane meticc

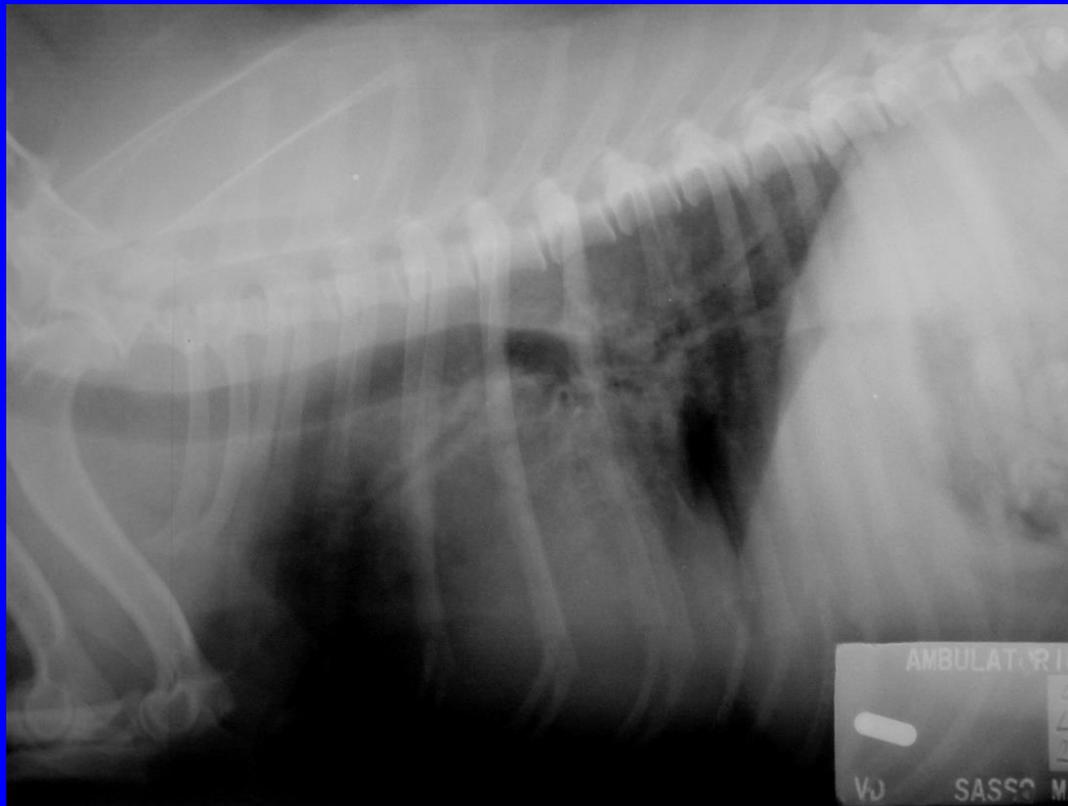


Ins. cardiaca e congestione polmonare

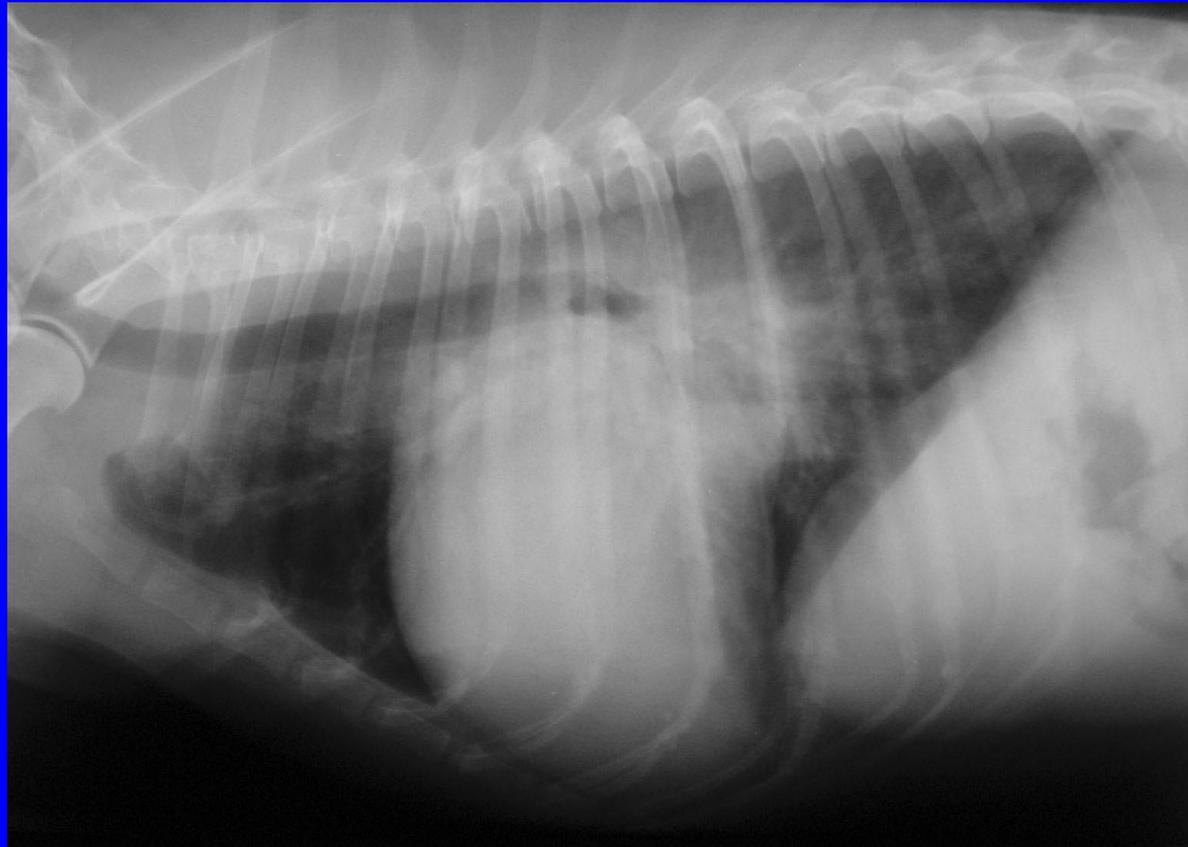
Cane edema polmonare



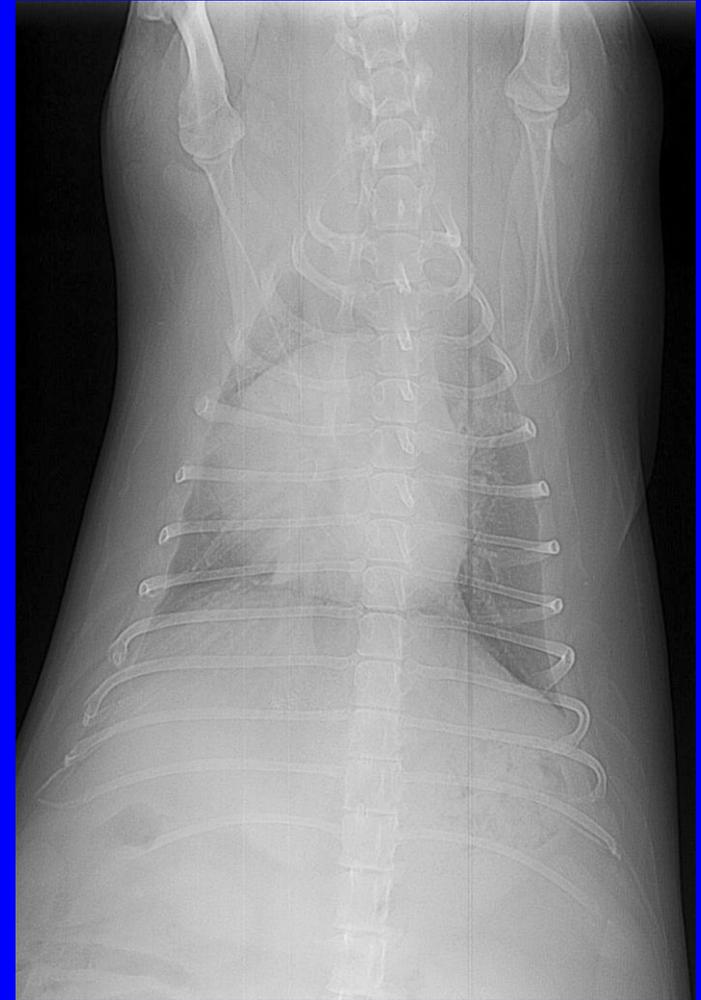
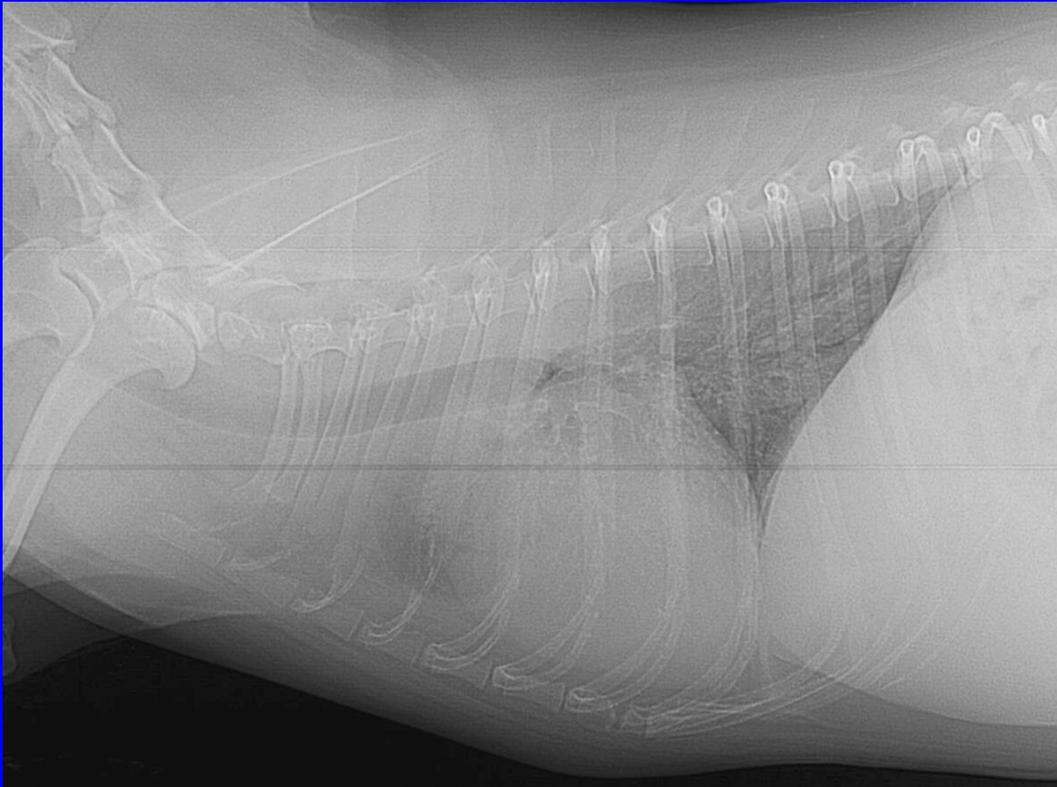
Cane edema polmonare



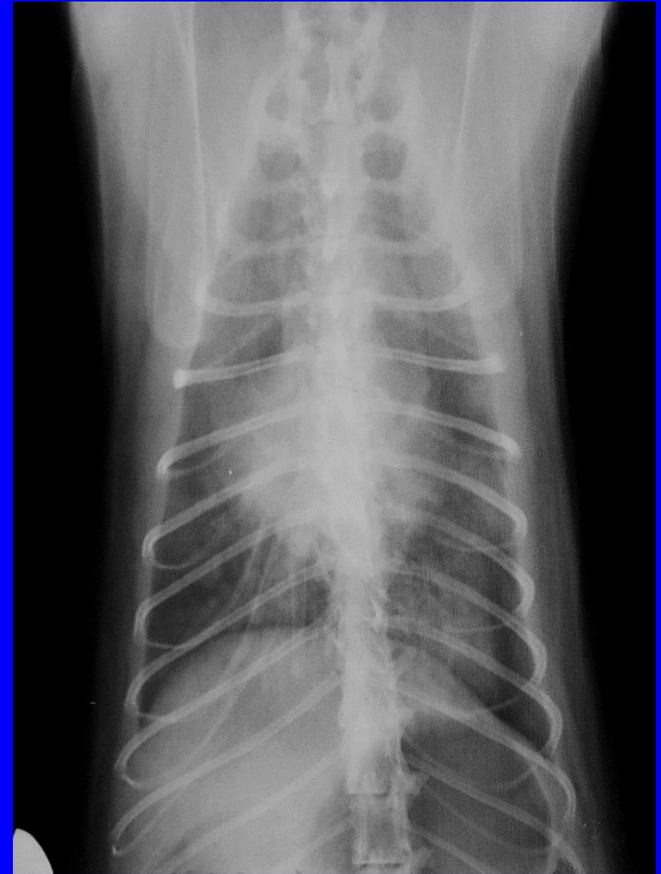
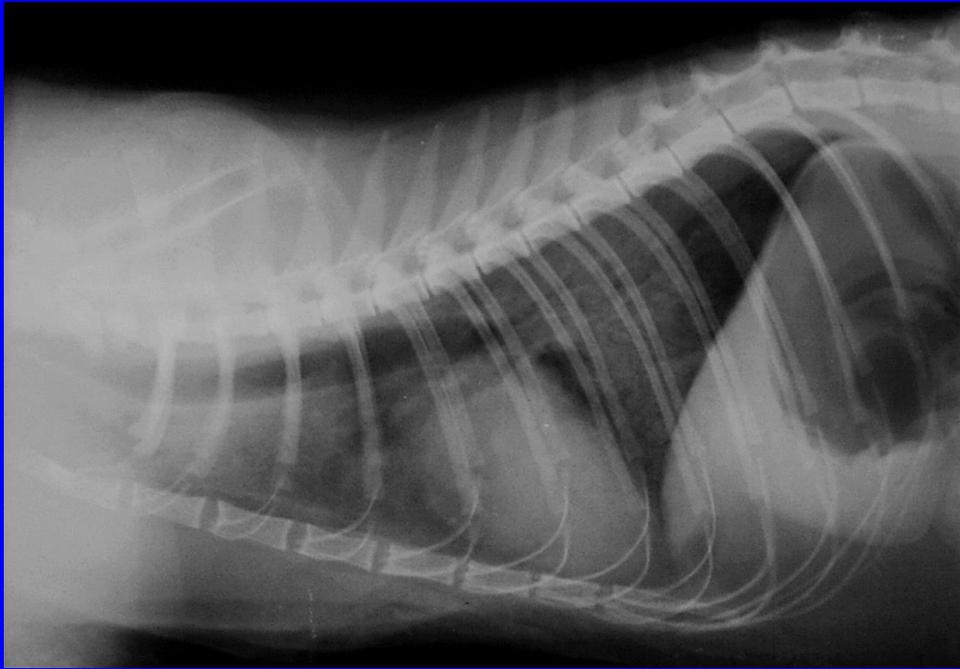
Edema polmonare



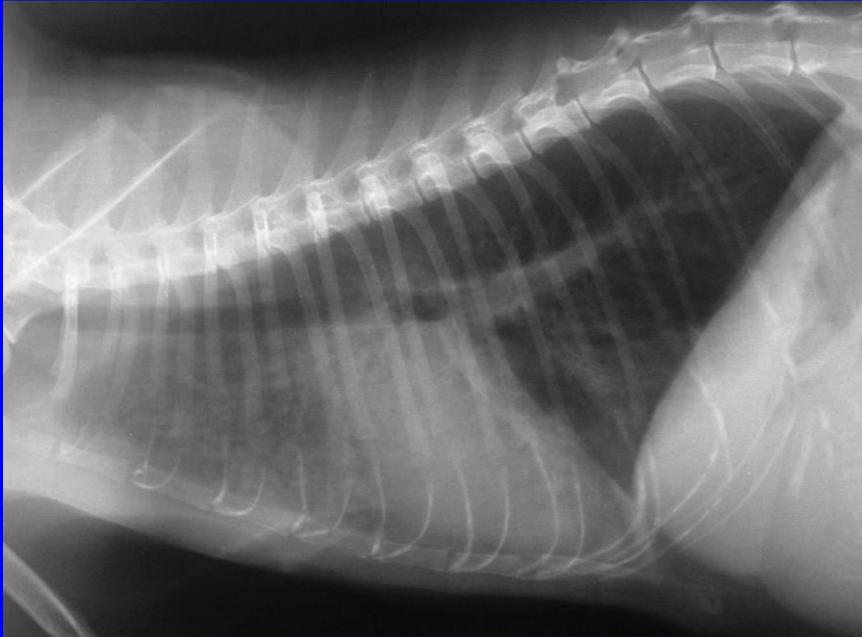
Barboncino f 10 a



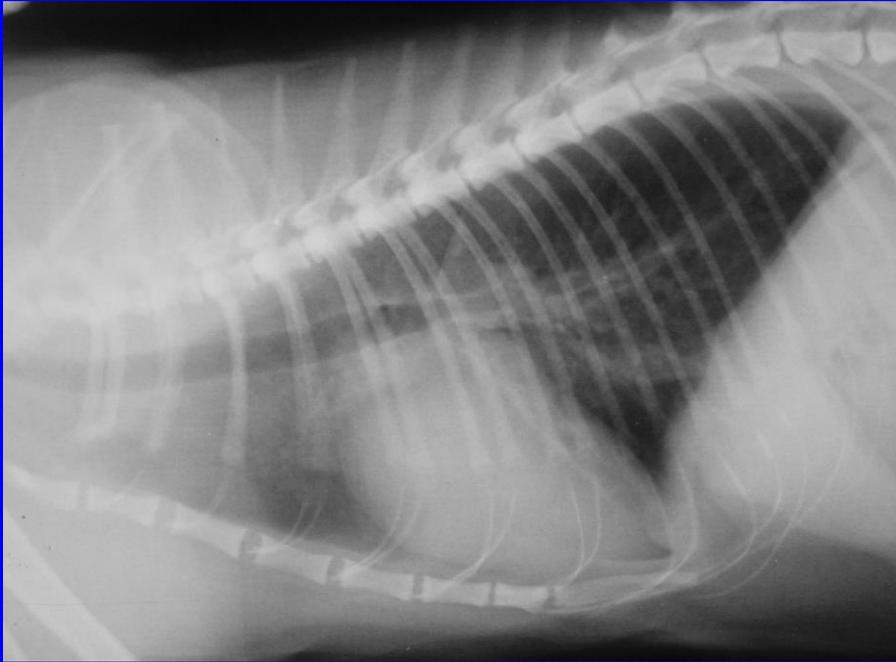
gatto



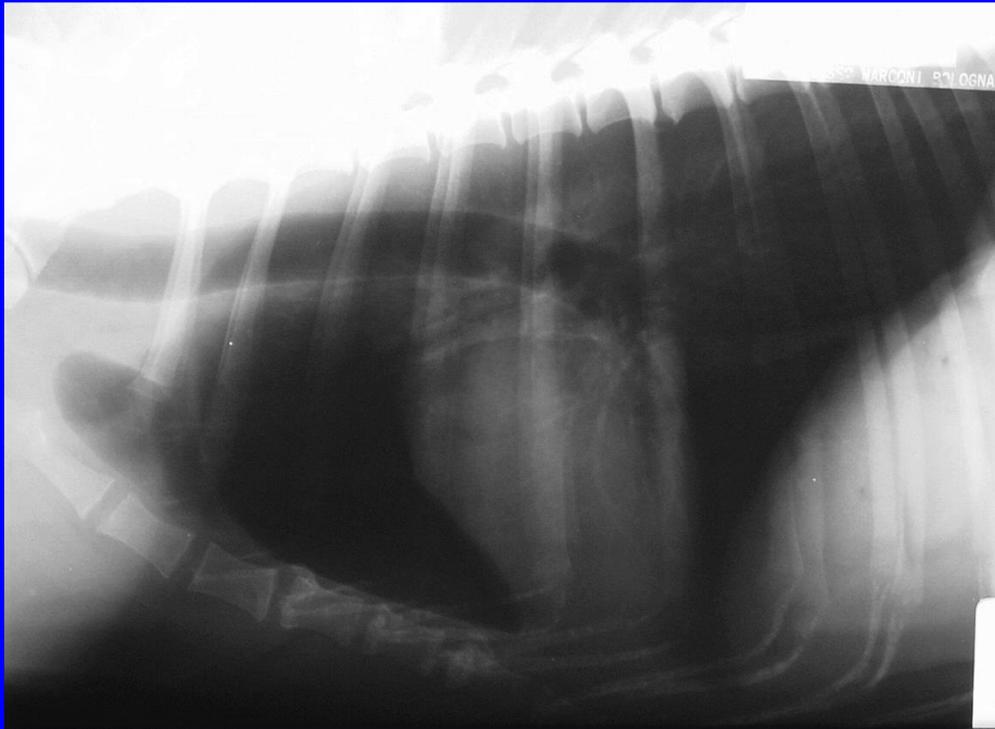
gatto



gatto



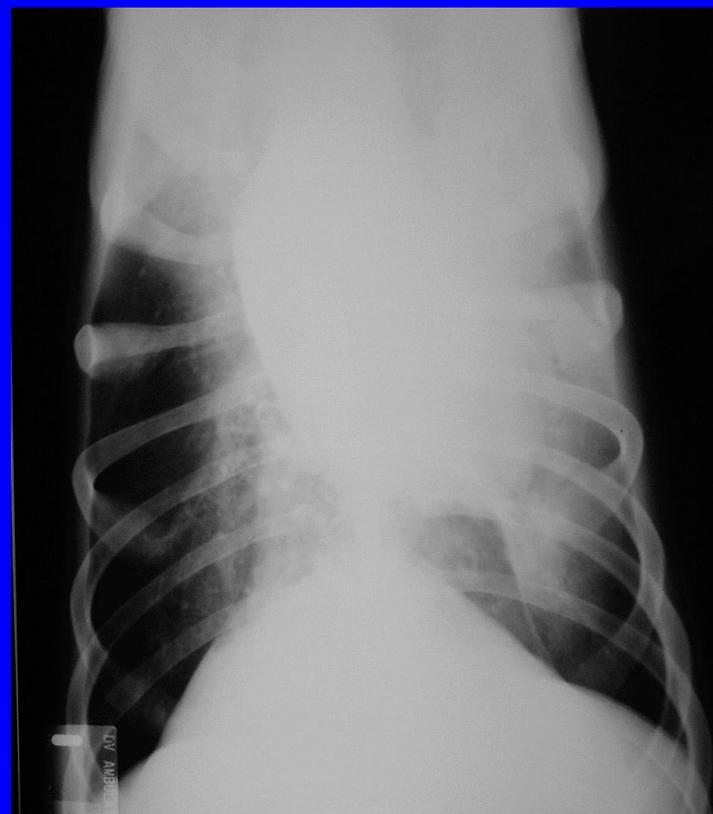
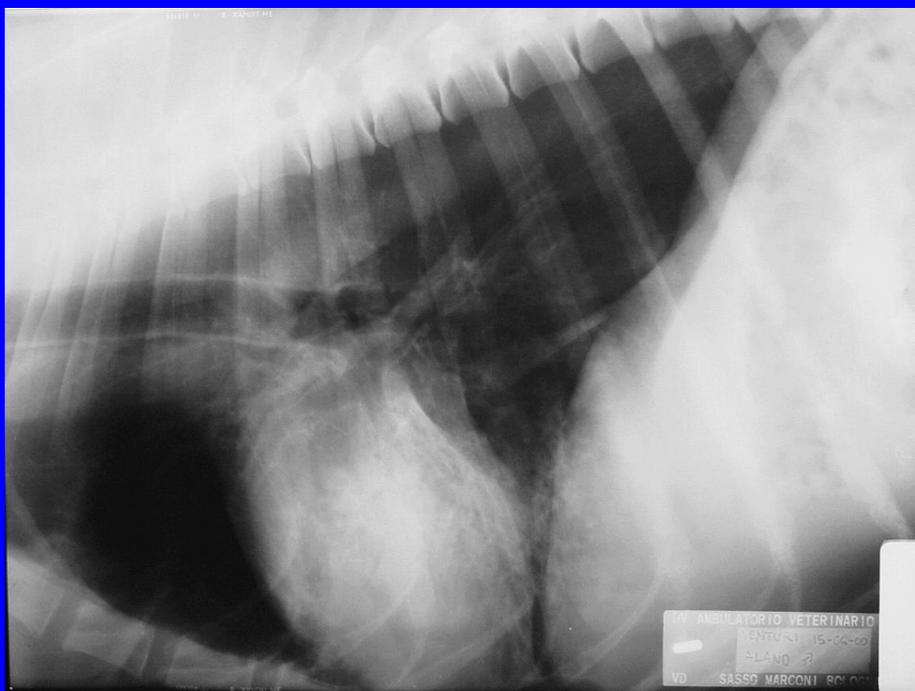
Cane PT, femmina, anni 7



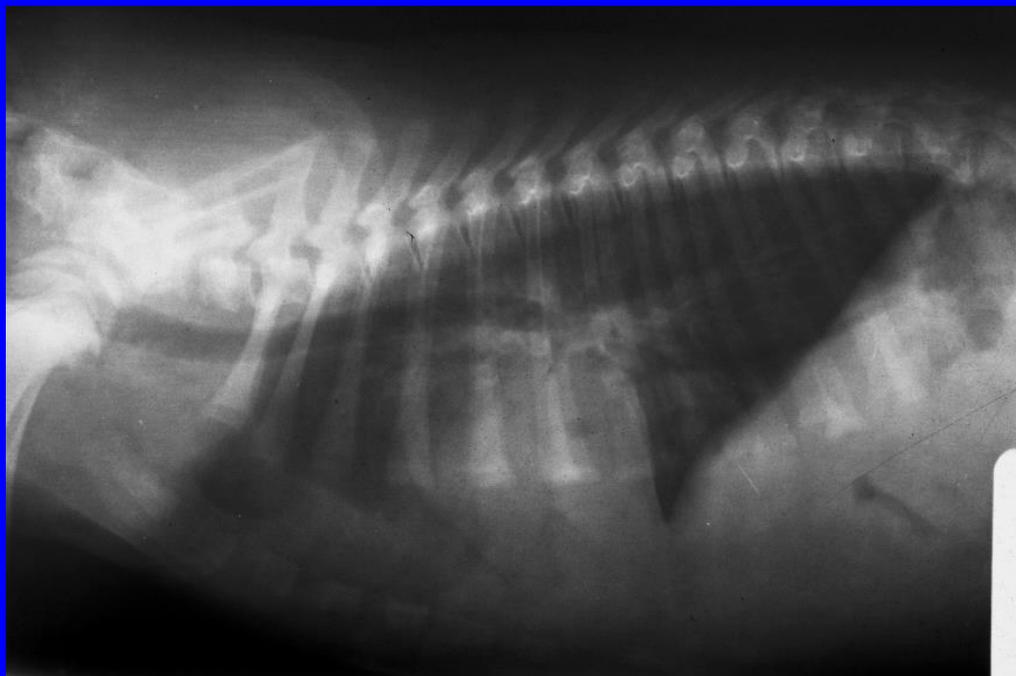
*Shock
ipovolemico/Addison*



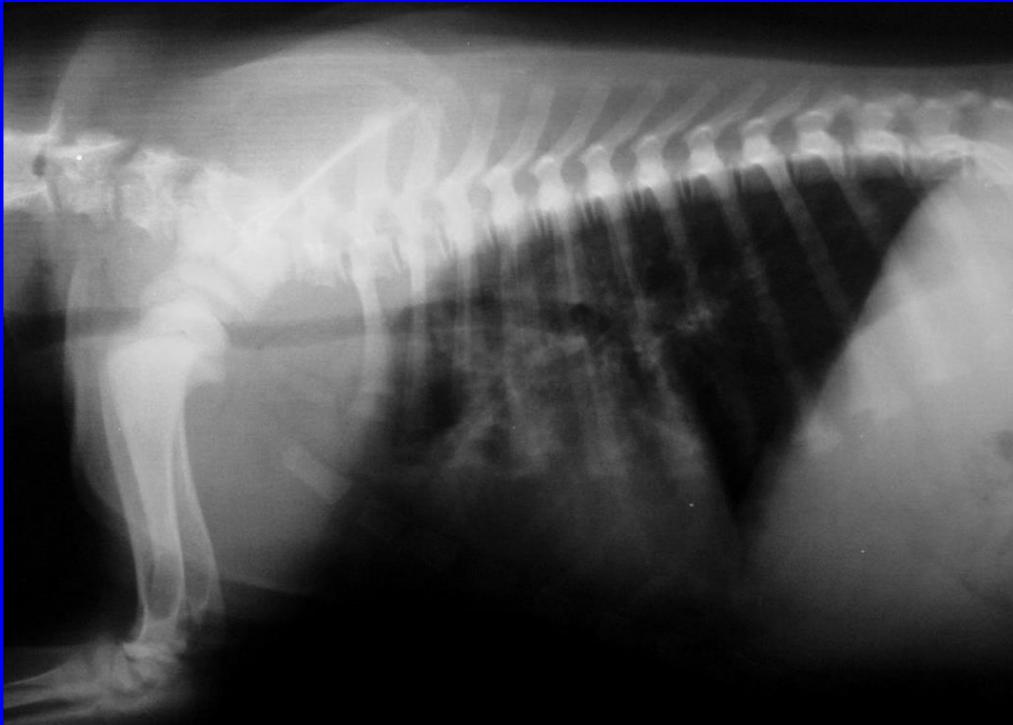
Polmonite da aspirazione



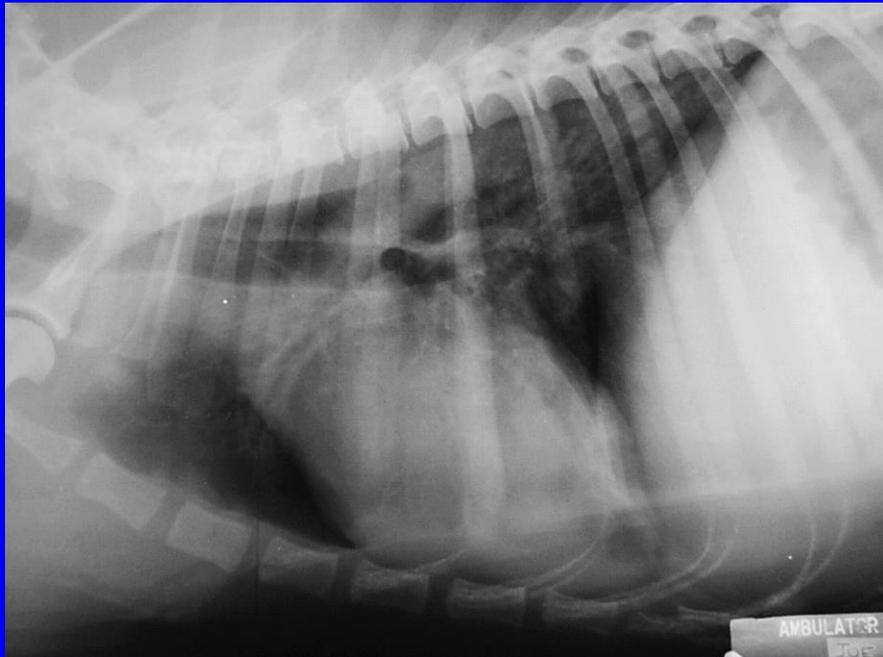
Cane PT di 2 mesi polmonite



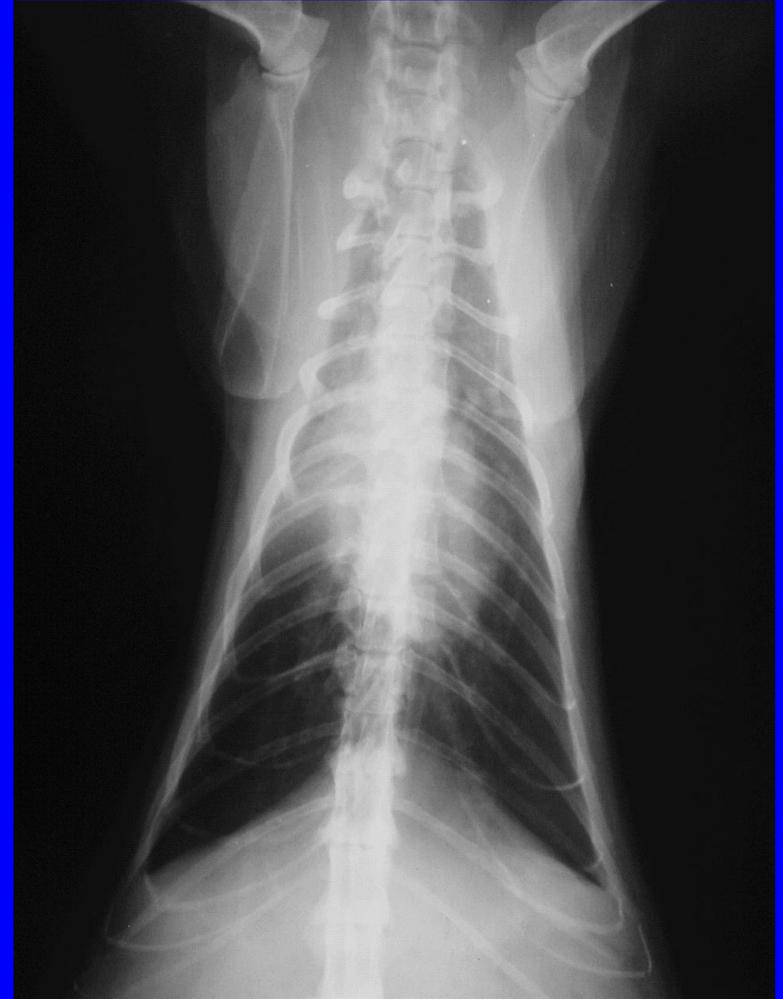
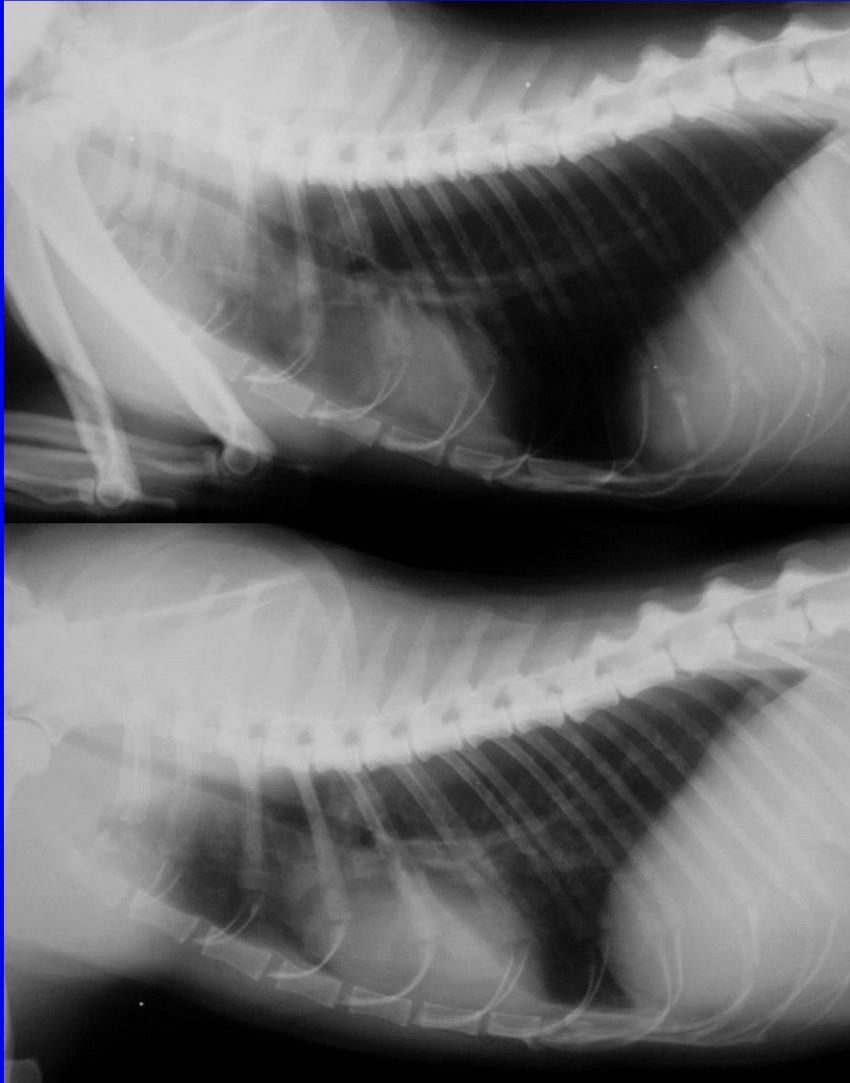
Polmonite



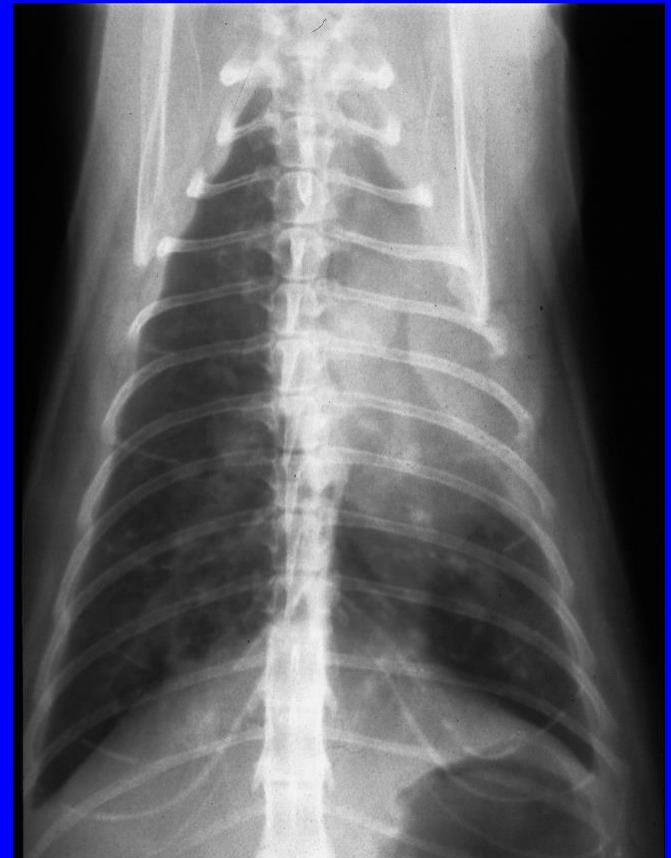
broncopolmonite



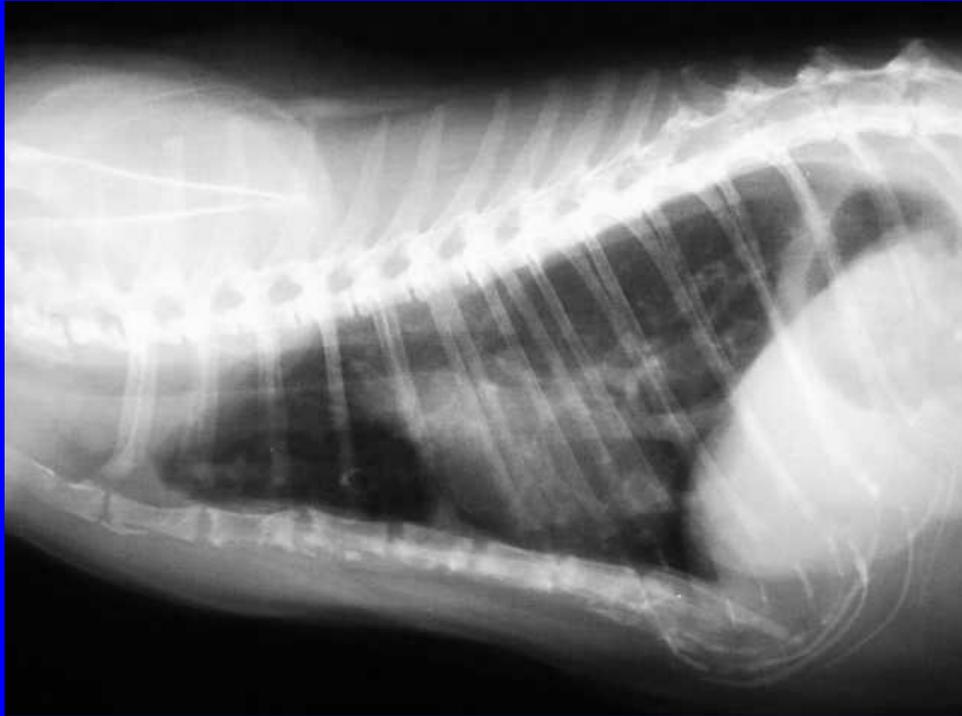
Gatto Europeo, maschio, anni 10
bronchite cronica-asma + atelectasia lobo medio dx



Gatto eu 10 a bronchite cronica + atelectasia lobo p.

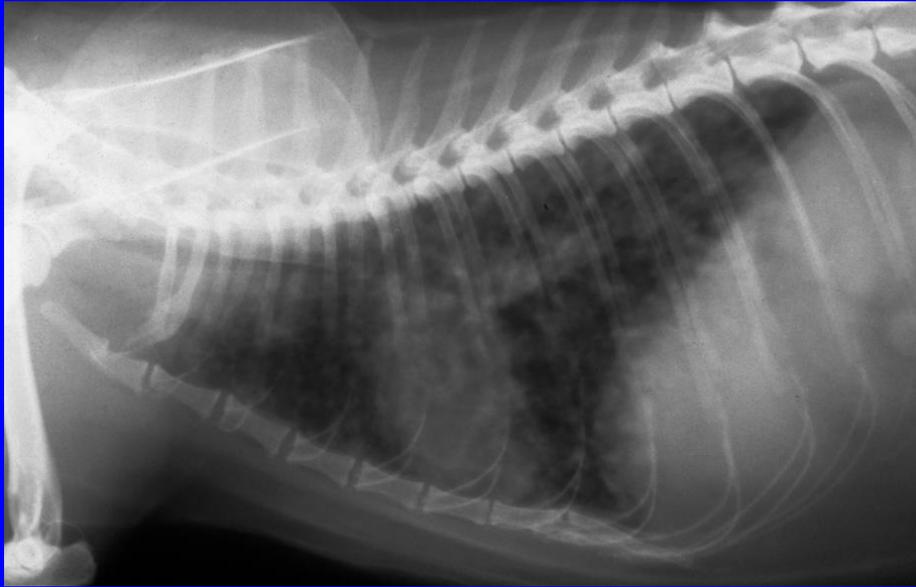


Gatto Europeo, maschio, anni 12



*Patologia polmonare cronica +
Bronchiectasia*

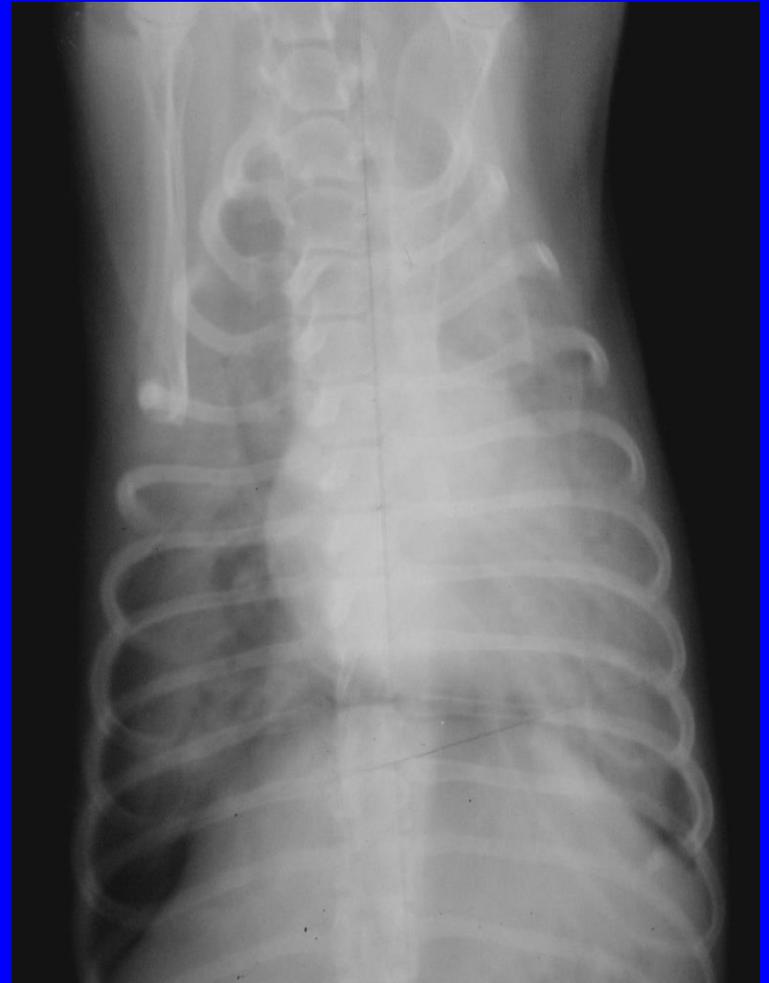
Gatto Europeo, femmina, 12 anni



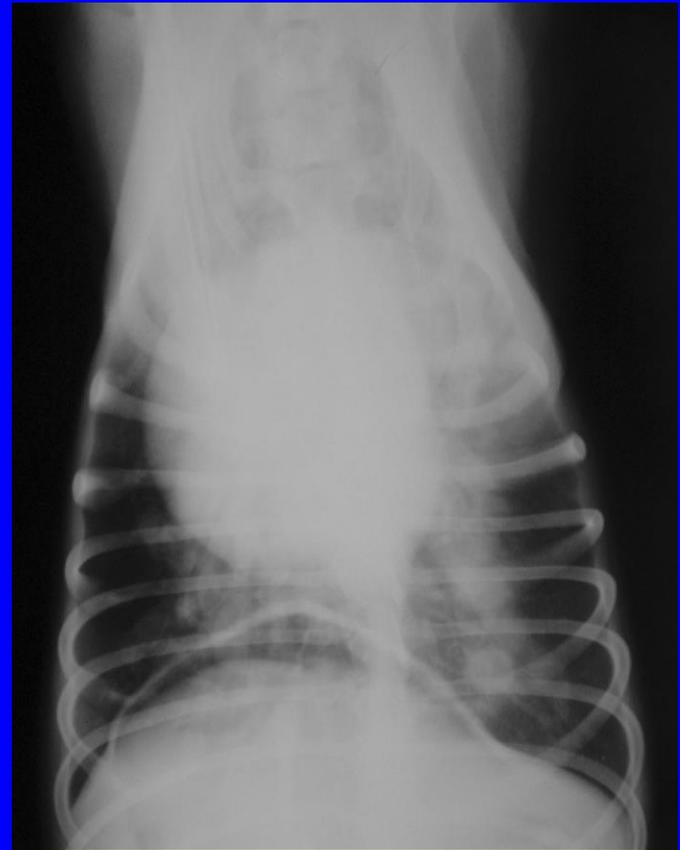
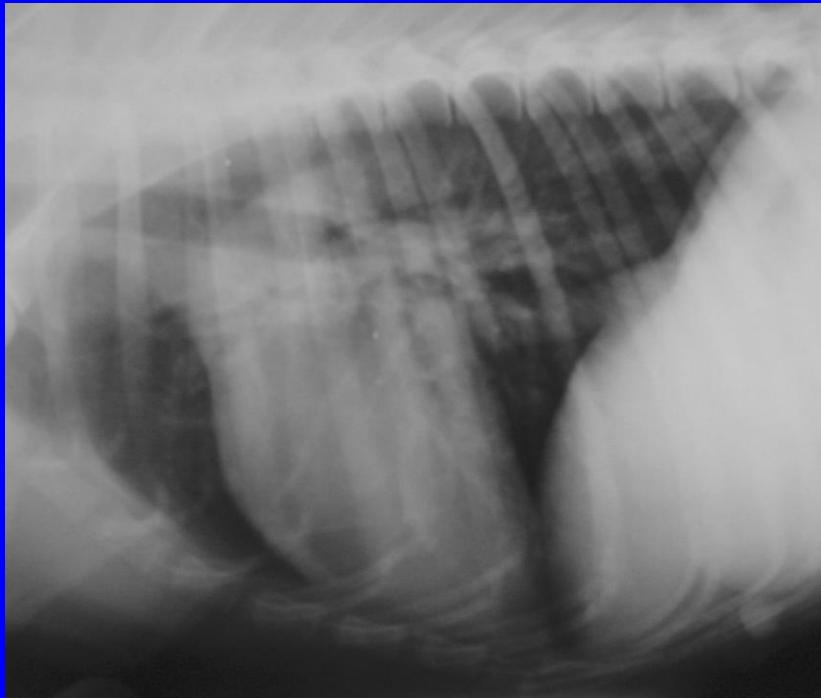
Pattern intestiziale diffuso



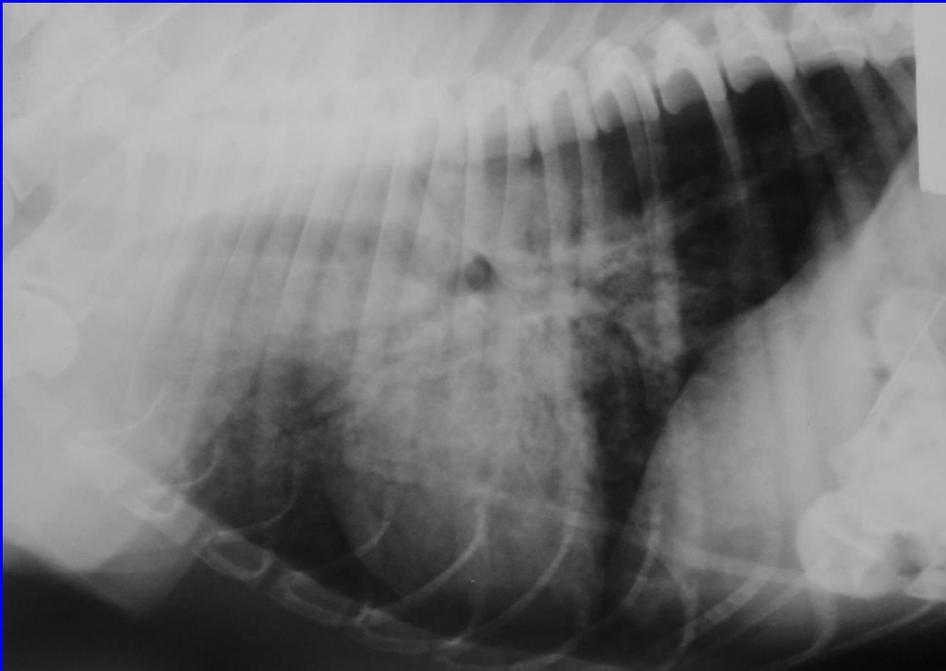
Dirofilariosi



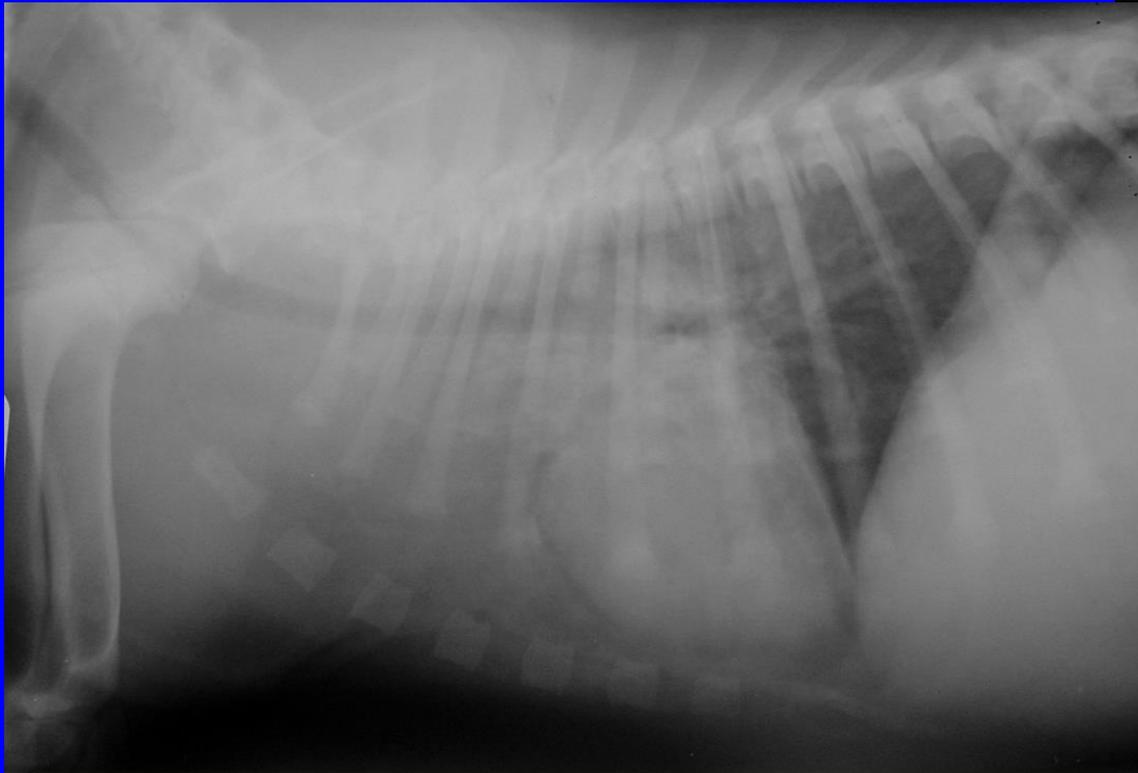
Dirofilariosi



Emorragia



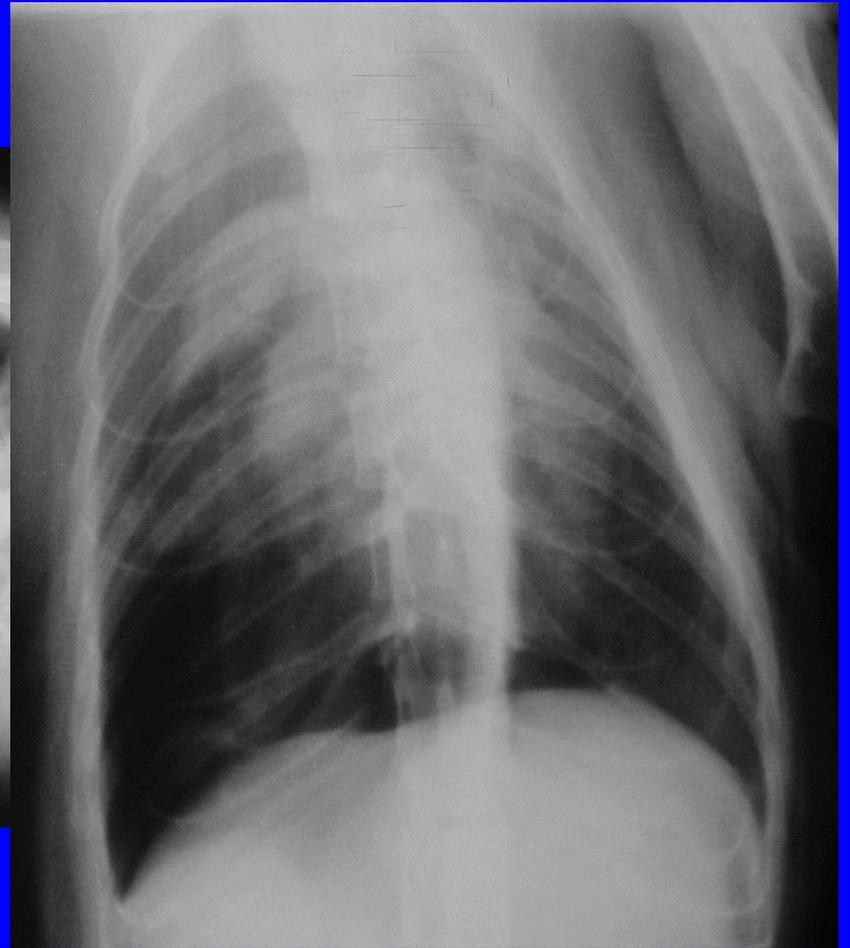
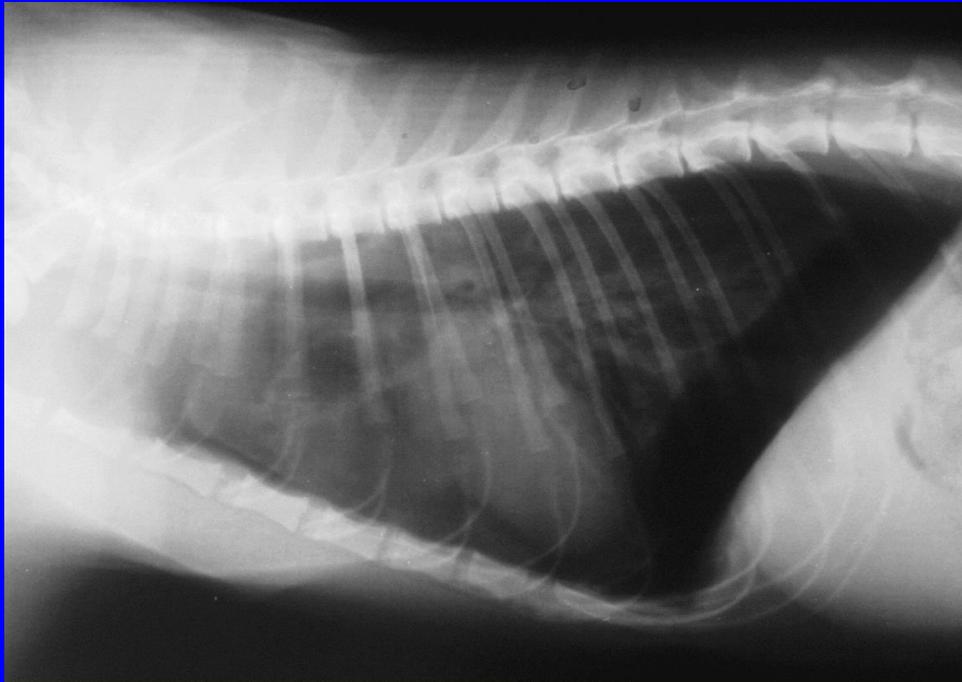
Emorragia



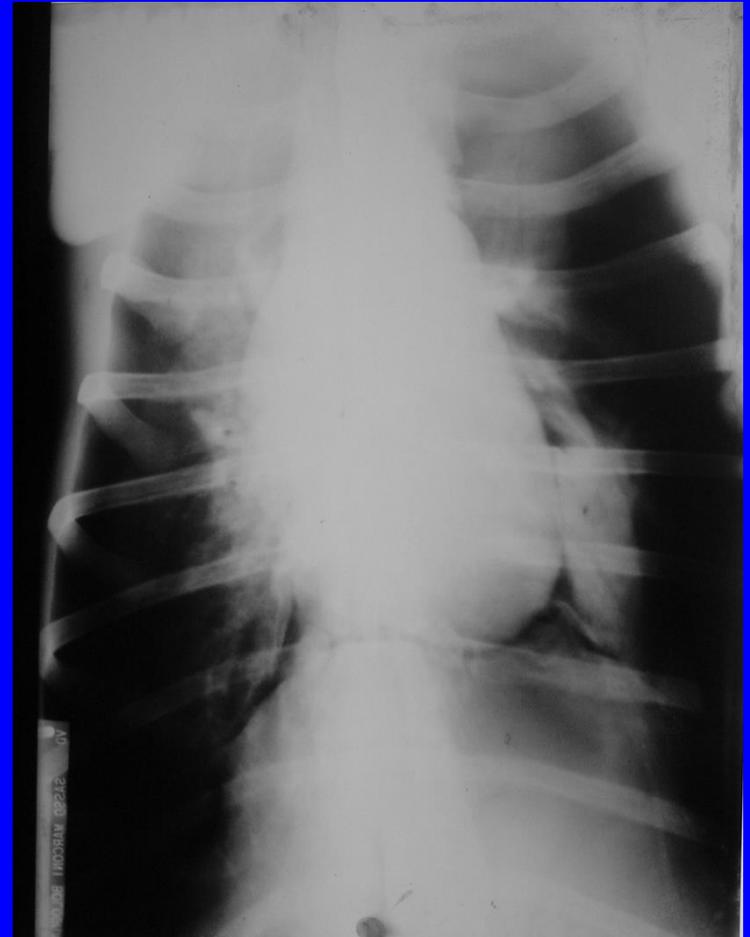
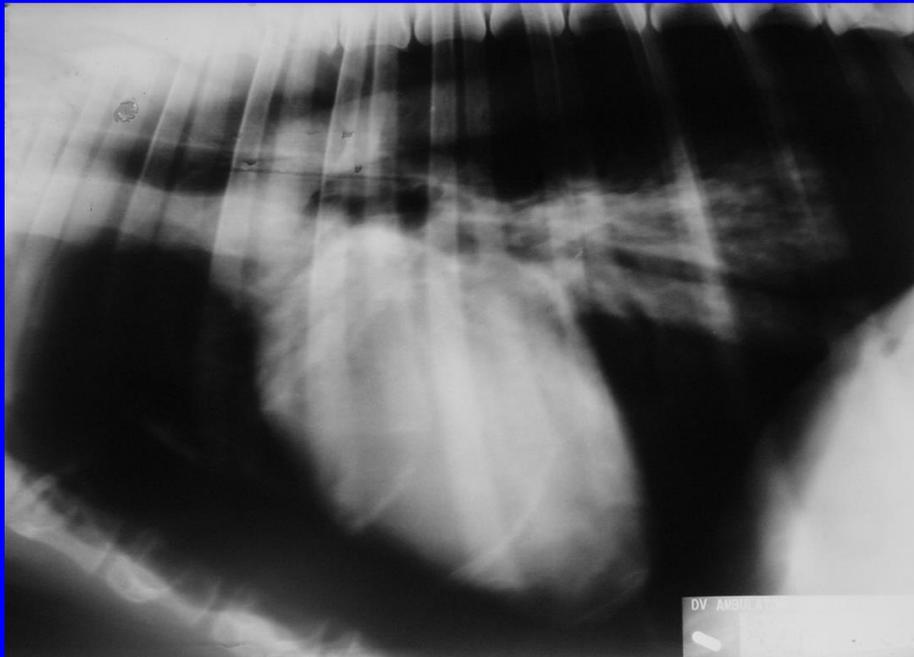
Emorragia



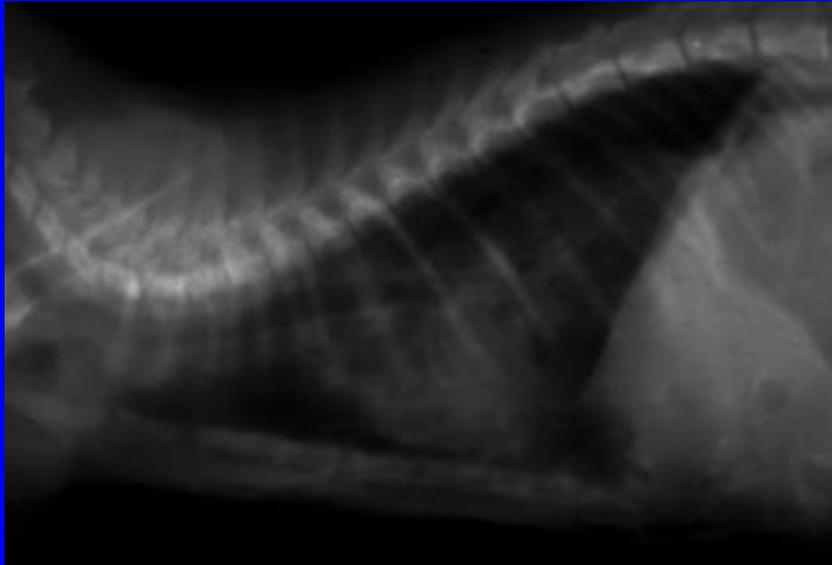
Trauma



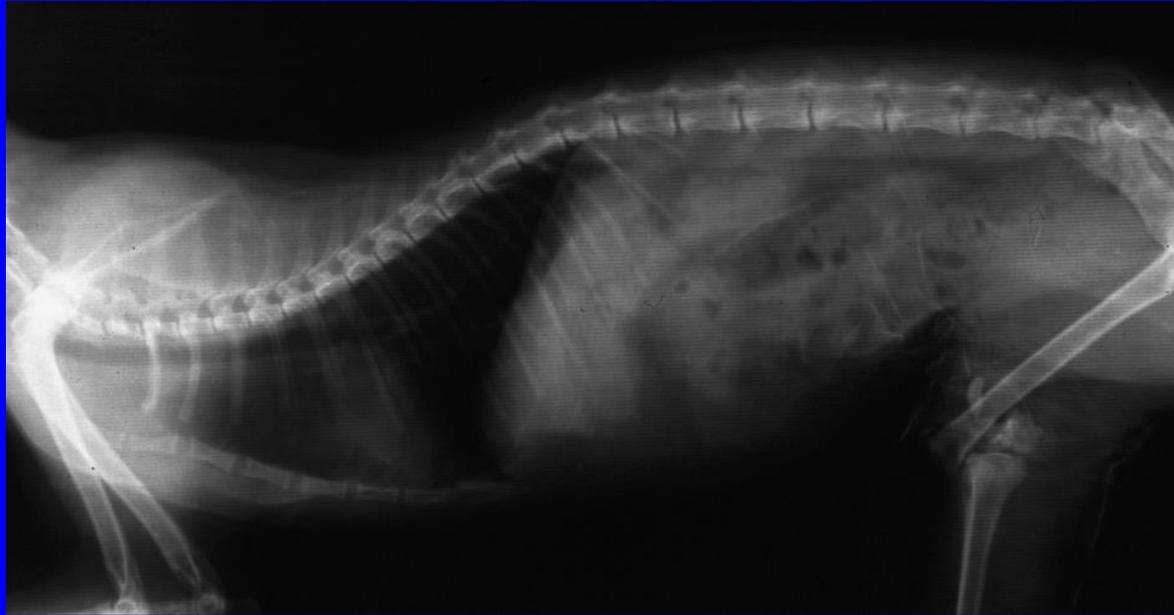
Trauma



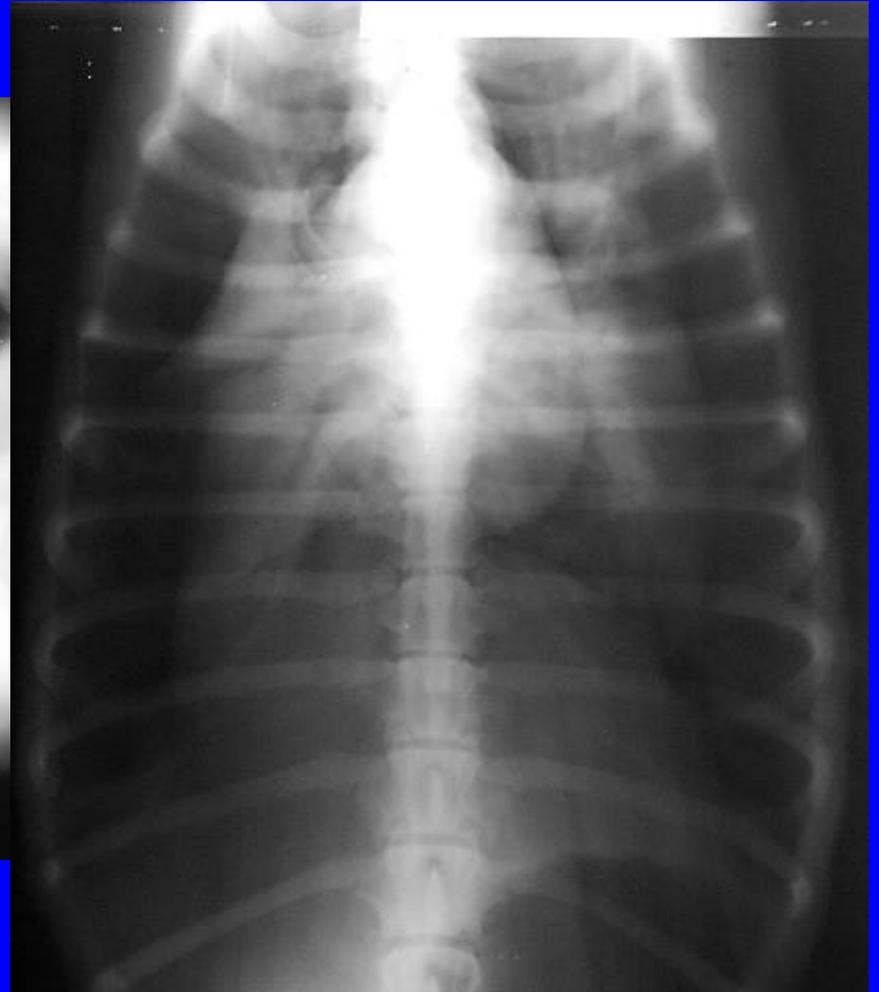
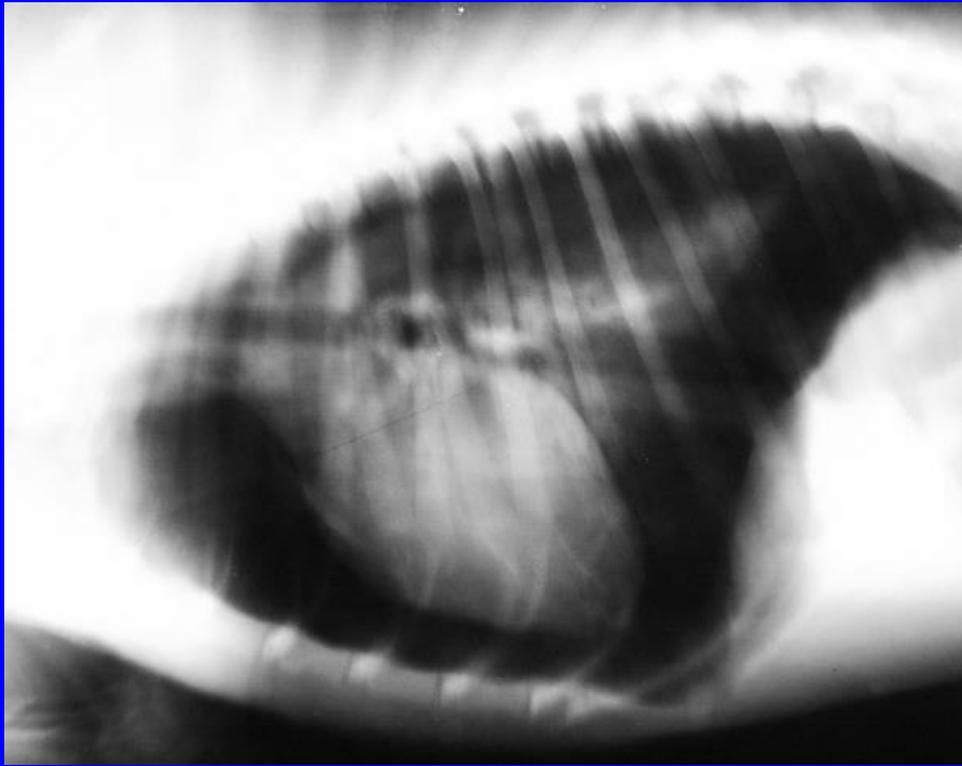
Trauma

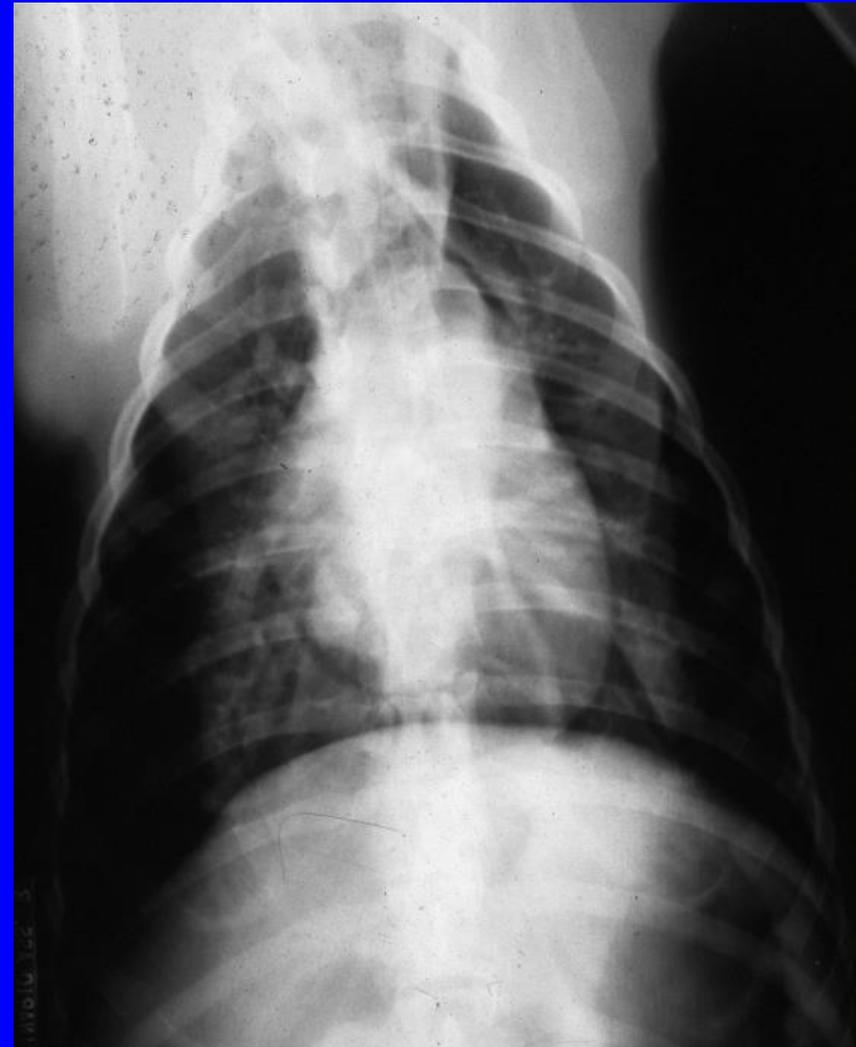
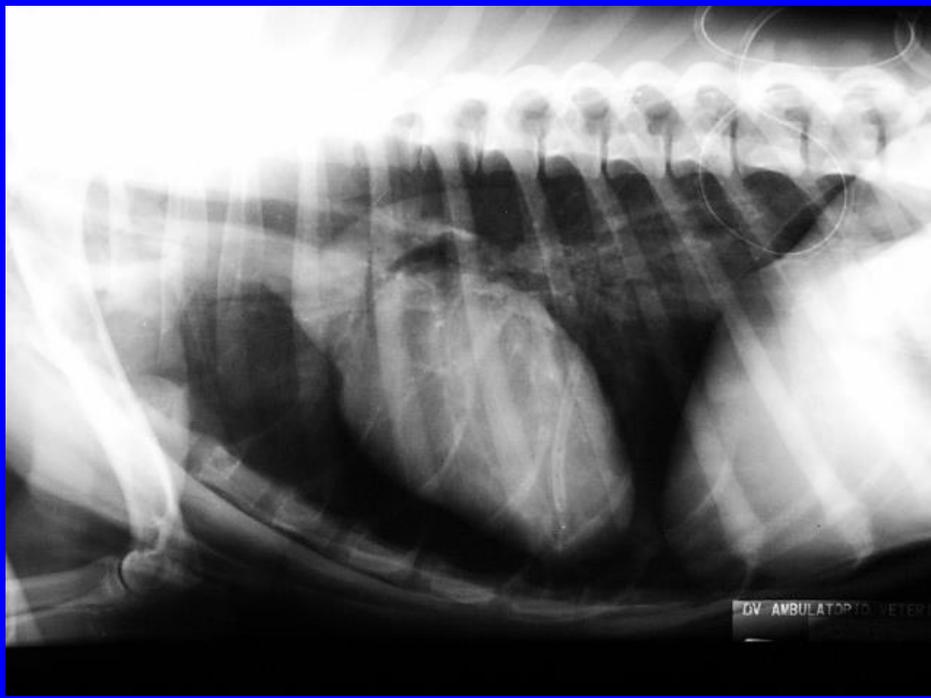


Trauma



Trauma



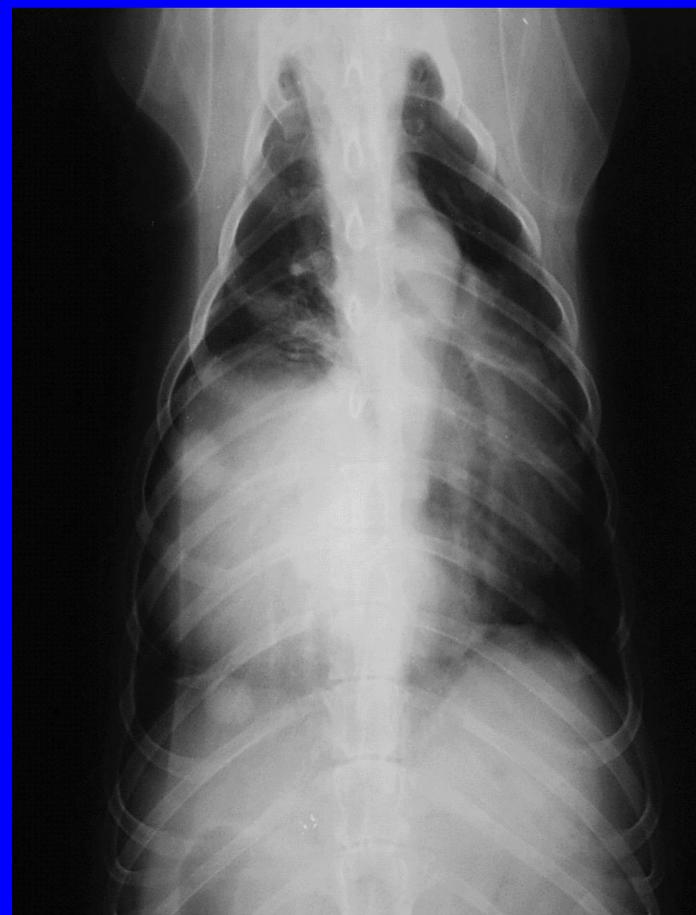
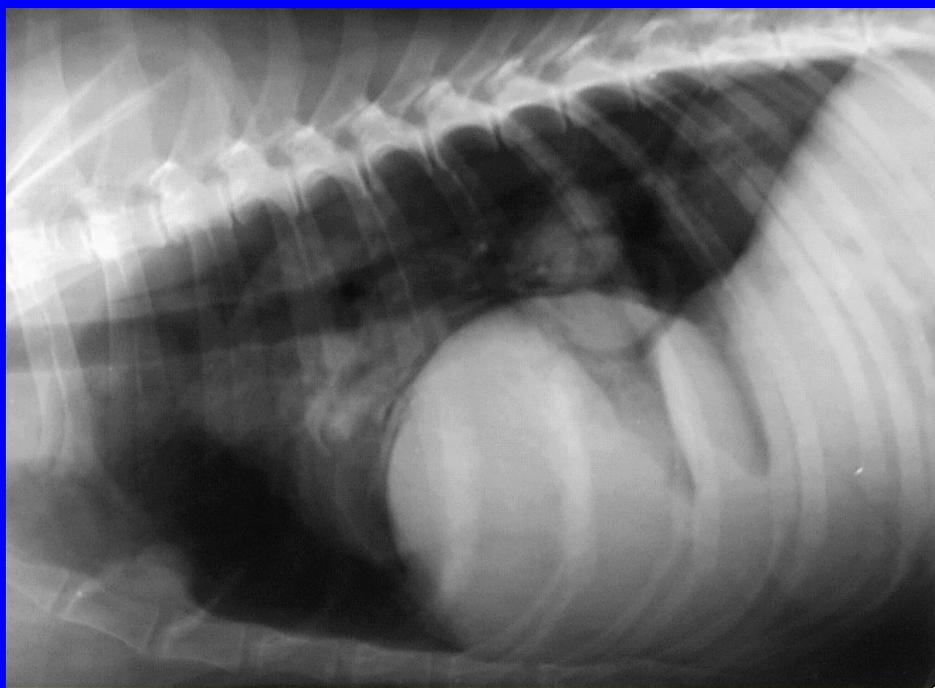


P.T., m, 6 anni Torsione lobo polmonare



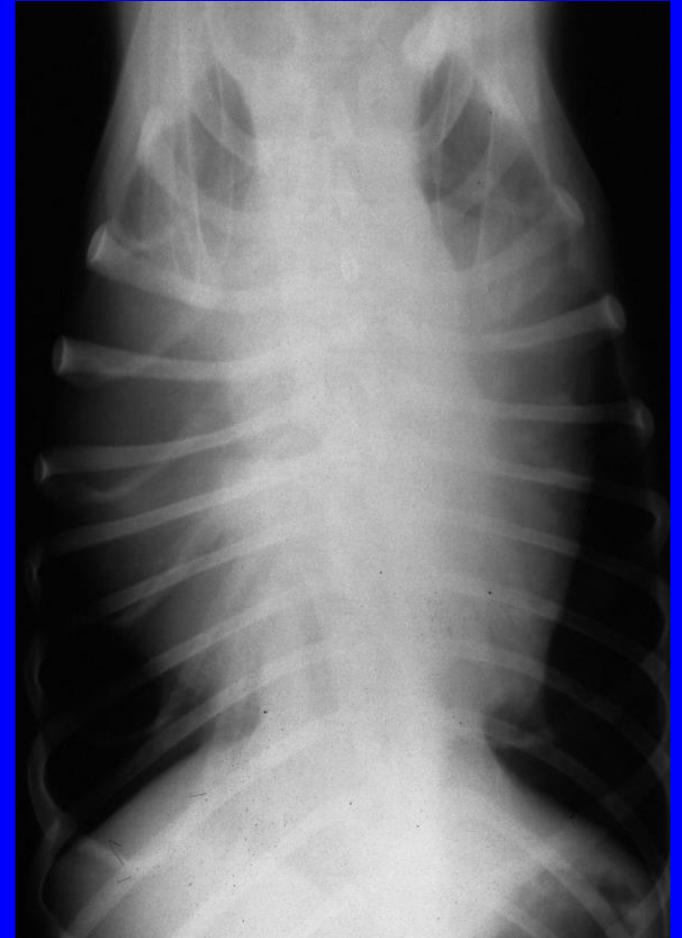
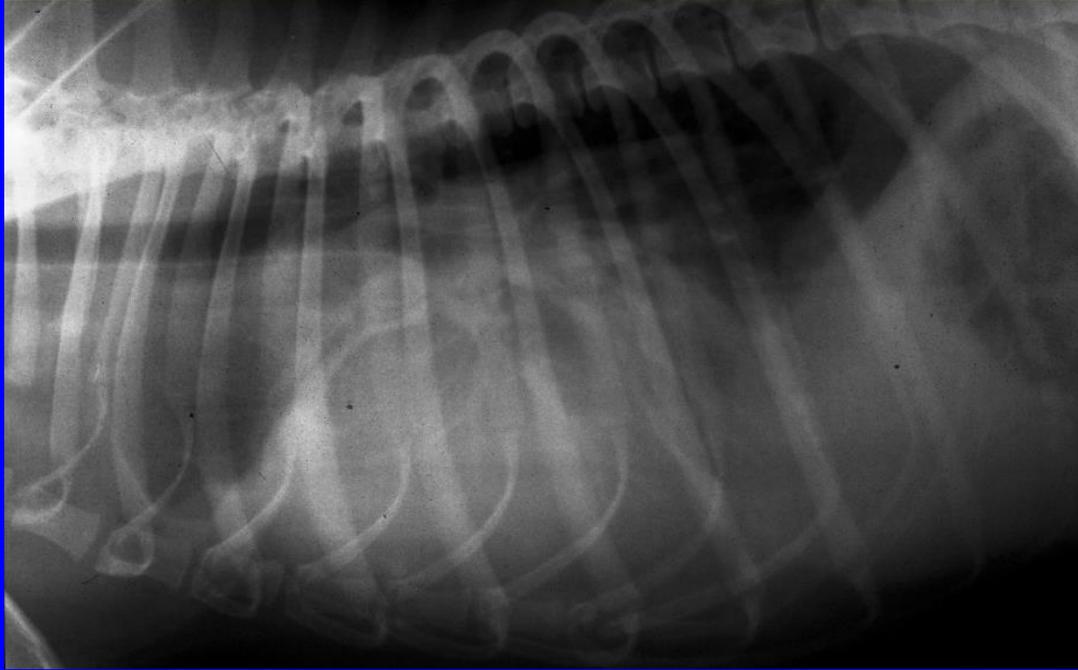
Università di Dublino

Cane Chow-chow, maschio, anni 8

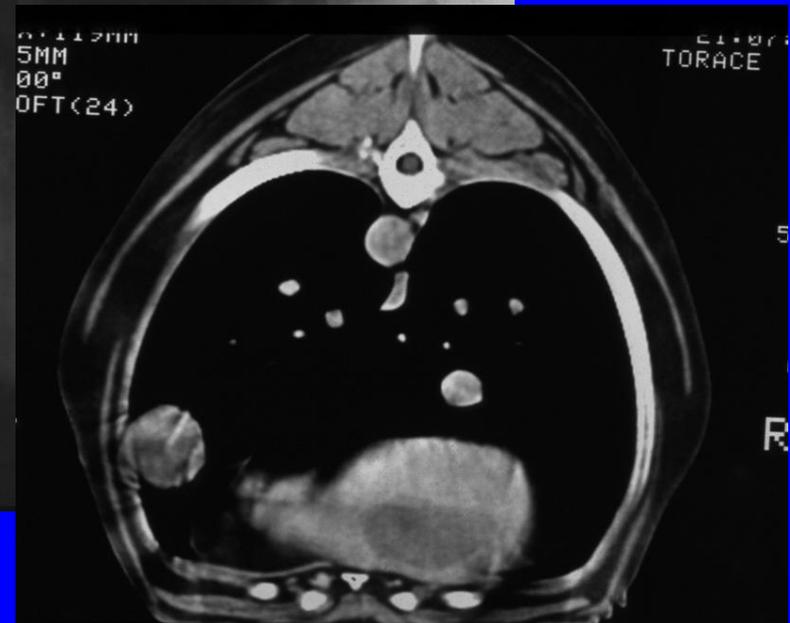
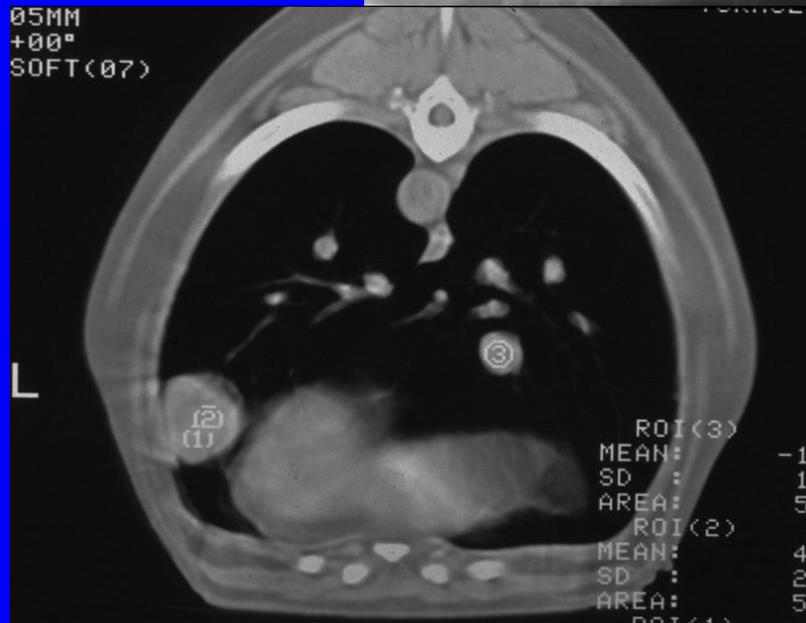


Carcinoma polmonare con metastasi

Pattern interstiziale ?

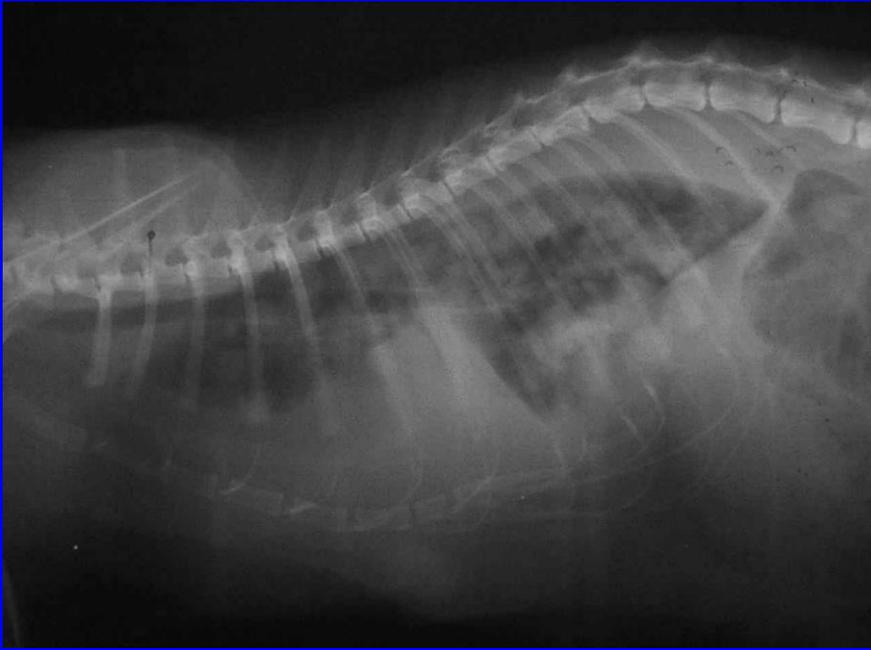
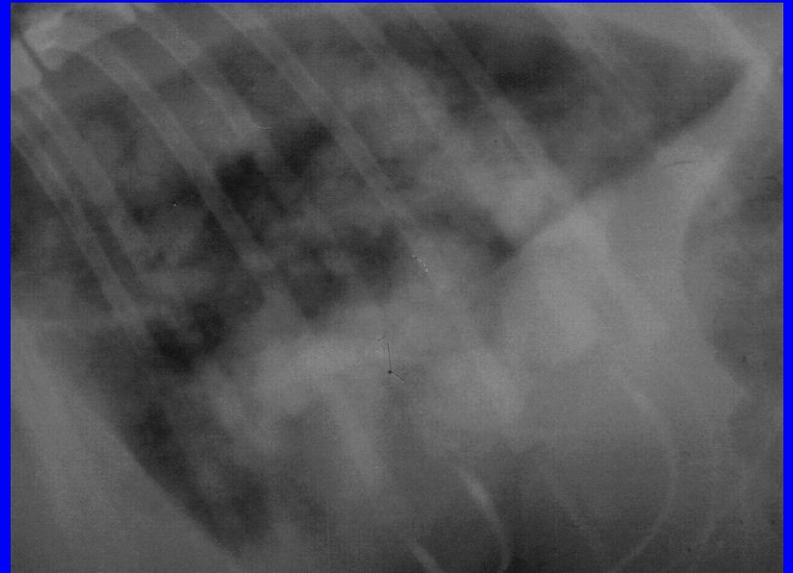


Cane PT, femmina, di anni 7

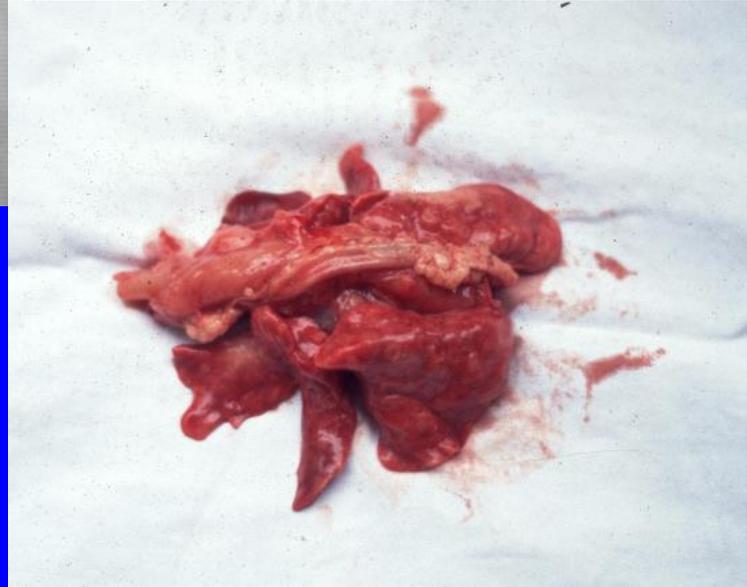


DD: metastasi; granuloma; cisti; < neoplasia 1°

Meta Ca mammario
+ versamento pleurico



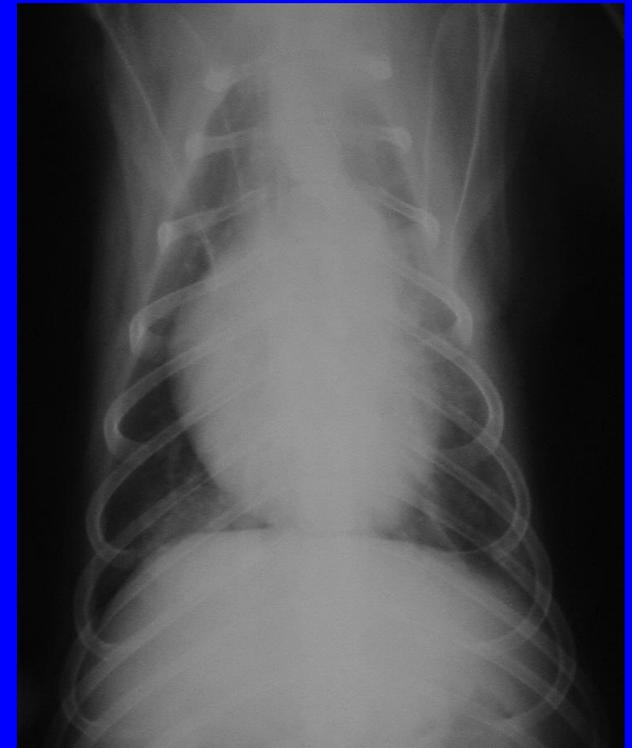
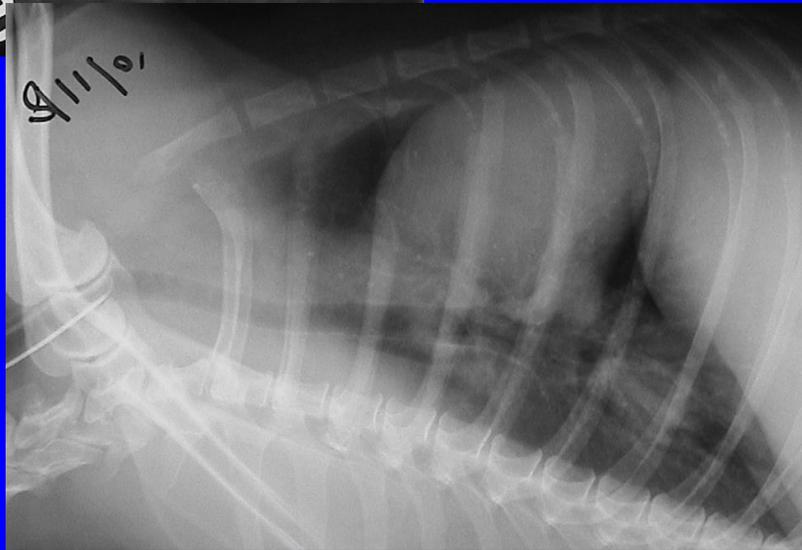
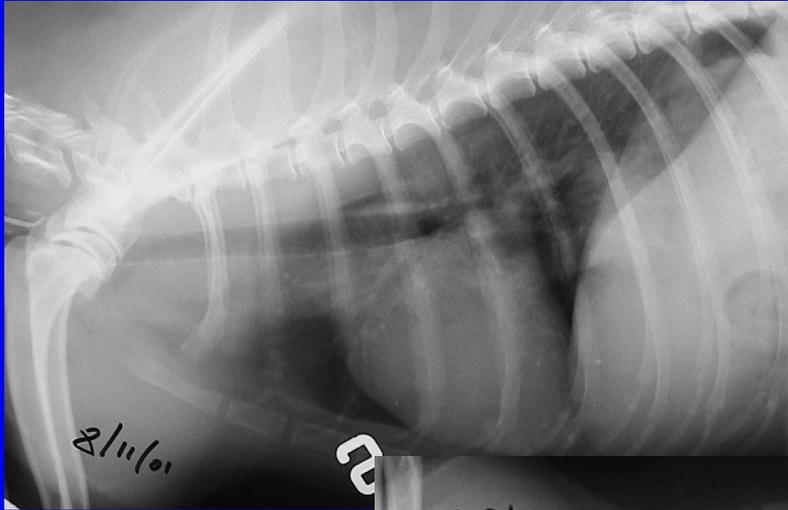
Meta Ca mammario



Ca polmonare

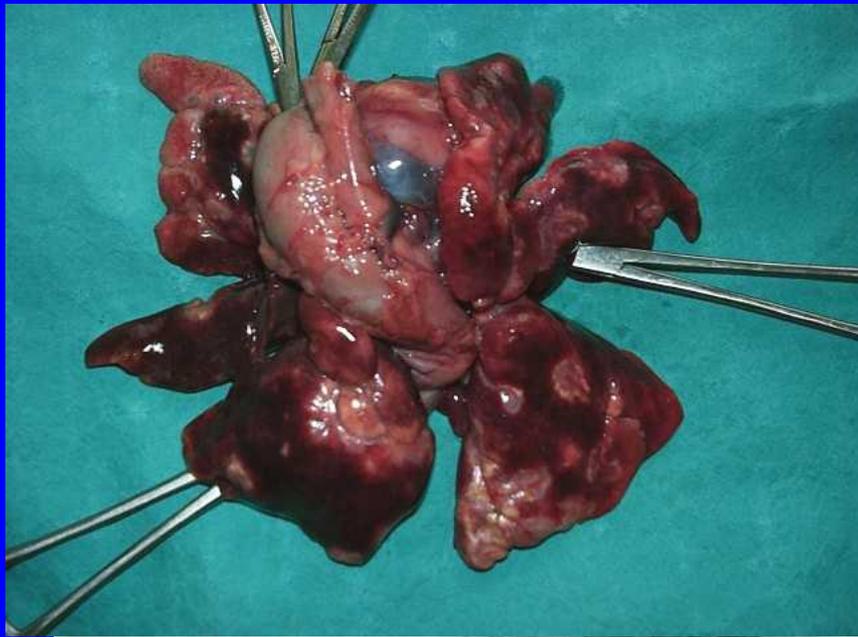


Ca polmonare

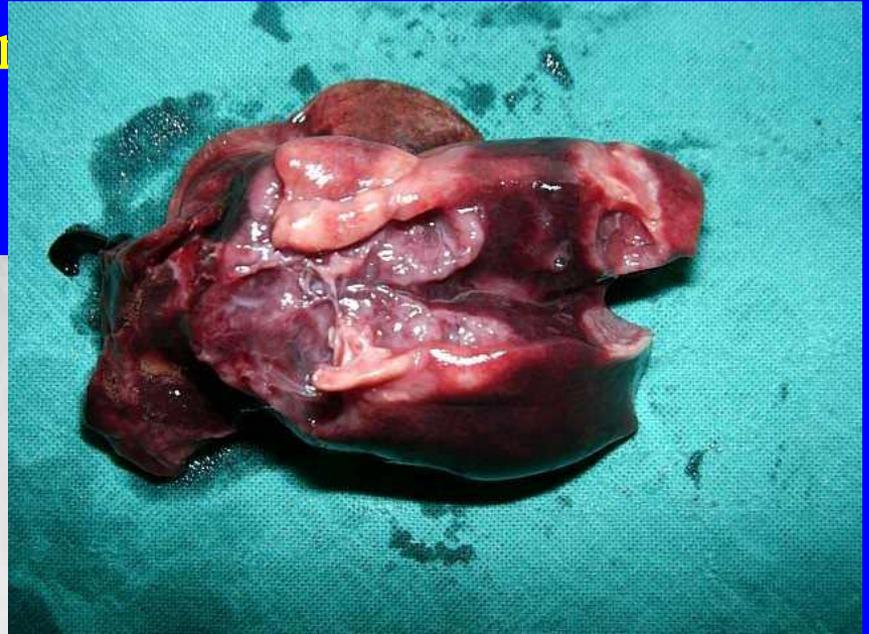


Ca polmonare gatto





oli

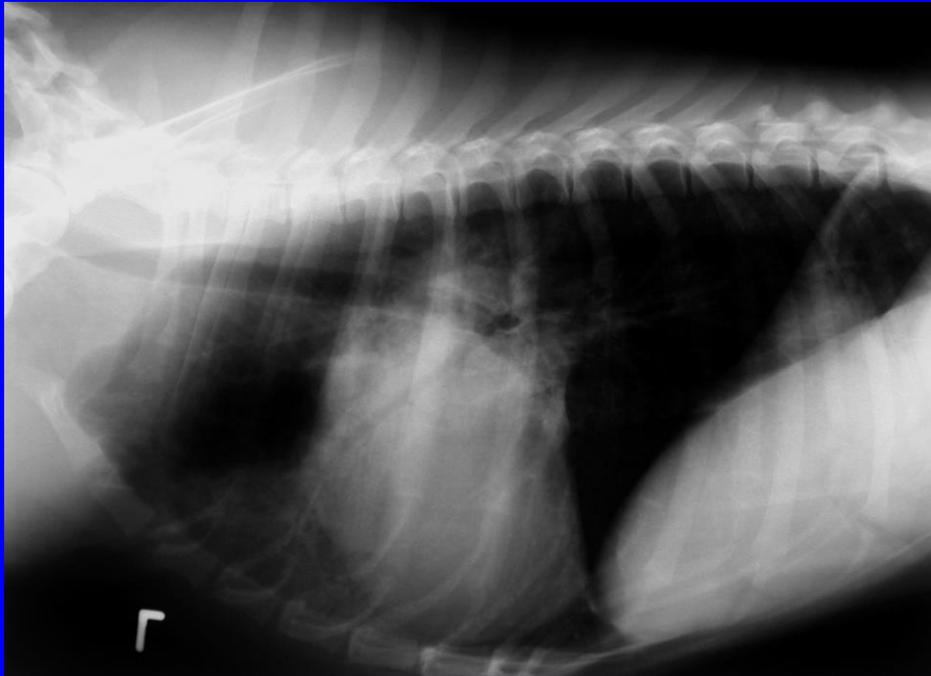


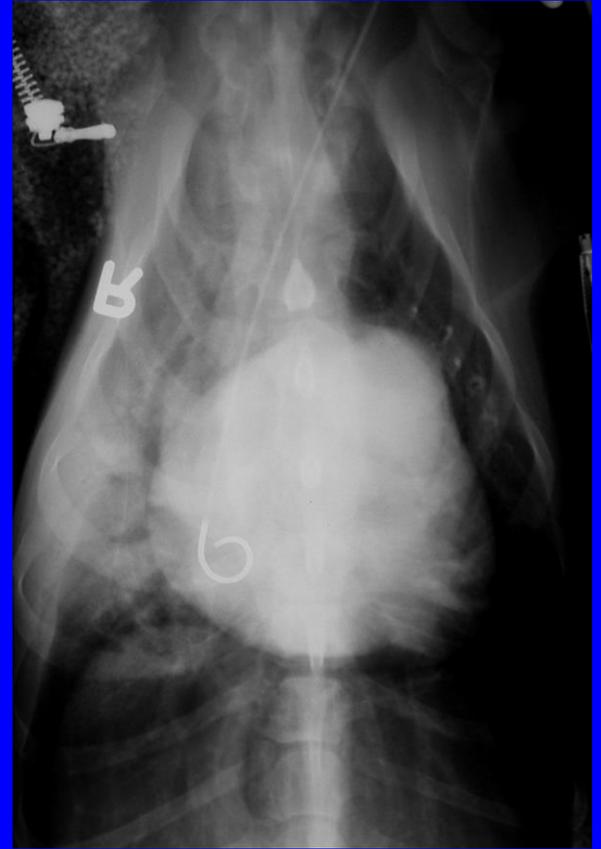
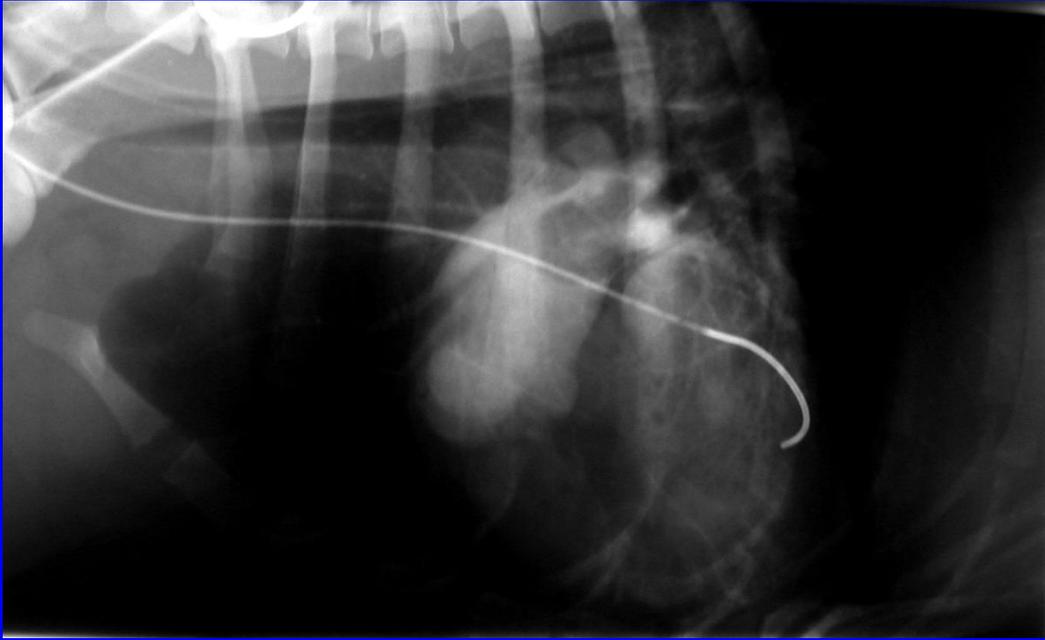
Rossi F, Vignoli M et al, JSAP, giugno 2003

Fistola broncoesofagea



Tromboembolismo





Ex:
08: 3 +0
L: 47.3

WCT carotid stenosis left 43
F 62 AW208966210.828.1103553539
Dec 17 2004

DFOV 9.4cm
STND

A
4
7

P
4
7

Clr Carotid 2
71.2/Vol.Render.
kv 120
mA 354
Rot 0.40s/HE 20.6mm/rot
0.6mm 0.516:1/0.6sp
Tilt: 0.0
05:40:54 PM
W = 4095 L = 2048

