

Respiratory Emergencies: The First 60 Seconds

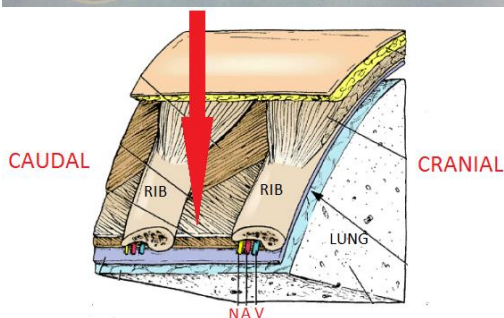
Breed	Common Aetiology	Notes
Cavalier King Charles Spaniel	Congestive Heart Failure	Usually mitral valve disease
Yorkshire Terrier, Pomeranian	Tracheal collapse	Benefit from sedative
Irish Wolfhounds	Congestive Heart Failure, Aspiration pneumonia	CHF usually due to Dilated cardiomyopathy (DCM)
Pug, Bulldog	Brachycephalic Upper Airway Syndrome (BUAS)	Check temperature, often hyperthermic & require cooling
Doberman Pinscher, Boxer, Great Dane	Congestive Heart Failure	Usually DCM. Risk of sudden cardiac death
Young cats	Infection (pyothorax?), Congestive heart failure	Check temperature: may be fever with infection
Older cats	Congestive heart failure, neoplasia	Often pleural effusion – needle thoracentesis.
Oriental cats (eg Siamese, Bengal)	Allergic Airway Disease	Expiratory effort. Often cough.

Table 1: Cardiorespiratory breed predispositions encountered in the authors' experience.

Disease Localisation	Breathing Observation	Examples	Comments
Upper Respiratory	Noisy (Stridor and stertor)	Laryngeal paralysis, BUAS	Often hyperthermic – require cooling
Lung Parenchyma	Rapid and shallow.	Pulmonary oedema, pneumonia, contusions	Crackles or wheezes on auscultation?
Small airway	Expiratory wheeze	Allergic airway disease	Oriental cats predisposed
Pleural space	Paradoxical Breathing	Pleural effusion, pneumothorax, diaphragmatic hernia	Heart and lungs inaudible/muffled on auscultation

Table 2: Localisation of respiratory pathology. More than one disease process may be present concurrently, making interpretation using this method difficult.

Needle Thoracocentesis



Equipment:

60ml syringe (or similar)
3-way tap
Butterfly needle (or 'over the needle' catheter & extension tubing)

Technique: Local anaesthesia is not required. In emergency situations, aseptic preparation may be detrimental and the skin simply prepped with an alcohol solution.

The site of insertion is selected: 8-11th intercostal space. Avoid the caudal aspect of the rib, to avoid the intercostal neurovascular bundle.

If pneumothorax is suspected, insert in the dorsal third of the thorax. If Blood (or other fluid) is suspected, insert the needle in the ventral third of the thorax.

The needle should be carefully advanced, whilst the syringe plunger is simultaneously withdrawn, inducing a negative pressure. As soon as the thoracic cavity is entered, the negative pressure is lost, and the pleural contents start to become aspirated.

To reduce the risk of pulmonary trauma, the needle should be promptly oriented parallel with the thoracic wall.

Emergency Tracheotomy (Reproduced with permission from Ed Cooper)

Patient must be unconscious or anaesthetised. Only effective if tracheotomy distal to obstruction.



	Approximate inhaled O ₂ (%)
Oxygen cage	21-60
Flow By Oxygen	24-45
Face Mask	35-45
Unilateral Nasal Catheter	30-50
Bilateral Nasal Catheter	30-70%
GA & Intubation	21-100

Table 3: Approximate inhaled oxygen concentration (FiO₂) with different methods of oxygen delivery.

Nasal Oxygen Catheter



- Equipment:**
- 2% Lignocaine (without adrenaline)
 - KY Jelly
 - Flexible catheter (Nasal catheter, urinary catheter, other soft tubing)
- Technique:**
- Measure from nostril to lateral canthus of eye
 - Instill lignocaine into nostril (5mls Dogs, 1ml Cats)
 - Lubricate Catheter with KY jelly
 - Insert catheter in ventro-medial direction
 - Secure in place with butterfly strips (superglue or skin stapler)
 - Connect to Oxygen (Humidified?)
 - Bilateral catheters can be placed to increase inspired oxygen concentration.