

Anesthesia for the Dog with Mitral Valve Disease

History/Physical examination/Diagnostic tests: (see page 3-2)

- Chest x-rays within the past 6 months or more recently if clinical signs have changed
- Cardiac ultrasound if history of:
 - Coughing, or change in coughing pattern
 - Decreased exercise tolerance
 - Prior episodes of congestive heart failure
- Renal function evaluation within the past year if condition is stable
- Electrolyte measurement within past 24 hours if patient is ill

Dogs currently showing evidence of congestive heart failure should be stabilized before anesthesia.

Patients recently started on cardiac medication should wait at least 10 days before anesthesia. All prescribed medication should be administered as scheduled on the day of anesthesia.

Anticipated problems: (see page 3-2)

- Cardiac arrhythmias
- Pronounced hypotension
- Cardiogenic pulmonary edema

Premedication: (see page 3-3)

Butorphanol 0.2 mg/kg IM + atropine 0.02 mg/kg IM (or glycopyrrolate 0.01 mg/kg IM).

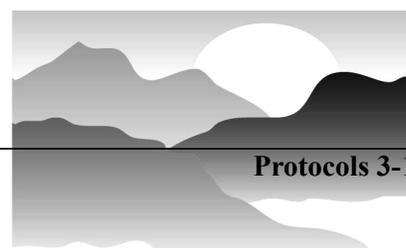
If patient is easily agitated, add midazolam 0.2 mg/kg IM.

Acepromazine at the low dose of 0.02 mg/kg can be added to the above for heavier sedation as long as the patient has no prior history of congestive failure and does not require a diuretic to control heart disease symptoms.

If an IV catheter can be placed without prior sedation, choose from among the following:

- Butorphanol 0.1 mg/kg + diazepam 0.1 mg/kg IV-give ½ of this dose and assess after 2 minutes and administer second ½ if additional sedation is required.
- Fentanyl 4 ug/kg IV
- Oxymorphone 0.025 mg/kg IV
- Hydromorphone 0.05 mg/kg IV

Add IM atropine 0.02 mg/kg **OR** glycopyrrolate 0.01 mg/kg.



Anesthesia for the Dog with Mitral Valve Disease (Cont'd)

Induction for patients with normal or high cardiac contractility on ultrasound:

Choose from among the following:

- IV propofol and ketamine (*see page 2-3*)
- IV propofol and diazepam (*see page 2-3*)
- IV ketamine and diazepam (*see page 2-4*)
- IV pentothal and diazepam (*see page 2-2*)

WARNING

These recommendations do not apply to patients showing evidence of decreased cardiac contractility and those with a history of congestive heart failure.

Choose from among the following for patients with reduced cardiac contractility or prior congestive episodes:

- IV fentanyl and diazepam (*see page 2-5*)
- IV etomidate 2 mg/kg + diazepam 0.2 mg/kg. *Follow titration steps as outlined for pentothal and diazepam on page 2-2*

Maintenance: (*see page 3-4*)

Deliver isoflurane or sevoflurane with or without nitrous oxide supplementation.

Inhalant anesthesia is poorly tolerated by patients with advanced cardiac disease. Use balanced anesthesia technique if hypotension develops (*see Balanced anesthesia page 2-16*).

Monitoring: (*see page 3-4*)

- Indirect BP measurement
- Direct BP measurement if cardiac arrhythmias, if dealing with advanced heart disease or invasive procedure with significant hemorrhage
- Continuous ECG lead 2

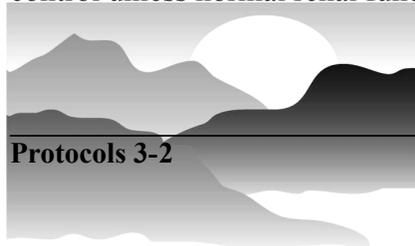
Support: (*see page 3-4*)

- IPPV if fentanyl induction
- IV fluids at 5 mls/kg/hour if no open body cavity, normal renal function and acceptable BP, otherwise 10 mls/kg/hour

Special Instructions:

Do not treat hypotension with aggressive fluid therapy unless you know that your patient has good cardiac function reserve.

Since renal and cardiac disease often co-exist, do not use NSAIDs for post operative pain control unless normal renal function is present.



Anesthesia for the Cat with Lower Airway Disease

Although different airway diseases are controlled with different medications, they are included in one category for the purpose of anesthesia management.

Patient history and evaluation: *(see page 3-2)*

Delay anesthesia until clinical signs of lower airway disease have been well controlled for at least 3 weeks. Anesthesia for transtracheal wash may be needed to assist with diagnosis before this can be accomplished *(see Anesthesia for feline broncho alveolar lavage page 3-139)*.

Pre operative chest x-rays within the past 6 months if symptoms are well controlled and have not changed.

Any currently administered medication such as bronchodilators or steroids should be continued as per usual on the day of anesthesia.

Anticipated Problems: *(see page 3-2)*

- Lower airway spasm during and after anesthesia
- Laryngospasm and upper airway obstruction at induction and recovery
- Exacerbation of the airway disease
- Hypoxemia in the presence of severe lung changes

Premedication: *(see page 3-3)*

Butorphanol 0.2 mg/kg + acepromazine 0.05 mg/kg + atropine 0.02 mg/kg (or glycopyrrolate 0.01 mg/kg).

If heavier chemical restraint is needed add IM ketamine 2 mg/kg (up to 10 mg per cat) + IM midazolam 0.2 mg/kg to the above protocol. Telazol 4 mg/kg can be substituted for ketamine and midazolam.

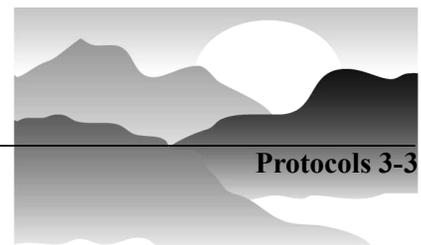
Avoid meperidine, morphine, xylazine and medetomidine.

Induction: *(see page 3-3)*

- Pre-oxygenation by face mask for 3 minutes
- IV ketamine + diazepam *(see Ketamine and diazepam induction page 2-4)*
- Mask induction is contraindicated because of the potential for laryngospasm and upper airway irritation *(see Mask induction page 2-15)*

Maintenance: *(see page 3-4)*

- Isoflurane or sevoflurane equally acceptable
- Nitrous oxide contraindicated if lung changes are moderate to severe



Anesthesia for the Cat Lower Airway Disease (Cont'd)

Support: *(see page 3-4)*

Always supplement with oxygen by face mask even if a brief procedure without intubation is planned.

Monitoring: *(see page 3-4)*

Observe the cat's breathing pattern. If lower airway spasm occurs, exhalation will become prolonged. This is unlikely since inhalant anesthetics relax the smooth muscles of the airways.

The capnographic waveform can identify lower airway spasm *(see Capnography page 1-23, 4-29)*.

Recovery:

Observe cat closely for dyspnoea or cyanosis during the first hour of recovery.

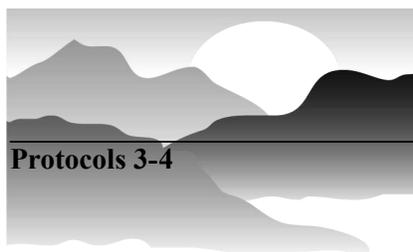
Provide oxygen by face mask after extubation until patient maintains sternal recumbency.

Special Instructions - Intubation:

It is essential to intubate with the least soft tissue trauma. A slightly deep plane of anesthesia, a laryngoscope and topical lidocaine help reduce the number of intubation attempts.

Allow 10 seconds after lidocaine application before attempting to intubate.

During this time, assess depth of anesthesia and administer further induction drug if necessary to ensure the patient is sufficiently unresponsive.



Anesthesia for the Healthy Pot Bellied Pig

Patient evaluation: (see page 3-2)

Physical examination is difficult to perform because most pigs object vocally to handling.

Rely on a thorough history to determine the need for diagnostic tests. Perform tests if history is unreliable or conflicts with physical findings.

Anticipated problems: (see page 3-2)

- Handling and restraint
- IV access
- Intubation: recessed larynx caudal to a narrow dental arcade
- Smaller tracheal diameter than for a dog of equal size
- Monitoring anesthetic depth
- Obesity causing pronounced hypoventilation

Premedication: (see page 3-3)

Generally heavy chemical restraint is indicated to allow handling, IV access and smooth mask induction. Choose from among the following:

- Fentanyl 10 ug/kg + acepromazine 0.05 mg/kg deep IM
- Acepromazine 0.05 mg/kg + oxymorphone 0.1 mg/kg IM
- Midazolam 0.5 mg/kg can be added to the above drugs for heavier chemical restraint
- Telazol 4 mg/kg IM

To all of the protocols above add atropine 0.02 mg/kg or glycopyrrolate 0.01 mg/kg IM.

HINT → Administer injections into the lumbar muscles with the pig standing and restrained against a wall.

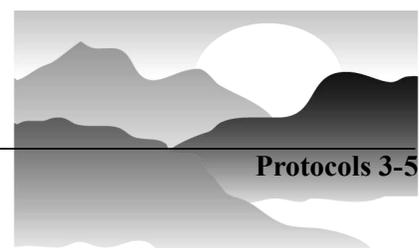
IV access can be established in an ear vein in the sedated pig.

Induction: (see page 3-3)

- Mask sevoflurane or isoflurane in oxygen
- IV ketamine + diazepam (see *Ketamine and diazepam induction page 2-4*)

For Successful Intubation:

1. Use strips of cling gauze to hold upper and lower jaws apart and snout pointed up almost vertical.
2. Using a laryngoscope with an adult size blade, apply 1 to 2 ccs of 2% lidocaine to the arytenoid cartilages.
3. Wait 10 seconds before attempting intubation.
4. If needed, use a long rigid urinary catheter in the trachea as stylet/guide.



General Anesthesia for the Healthy Pot Bellied Pig (Cont'd)

Maintenance: *(see page 3-4)*

- Sevoflurane or isoflurane
- Maintenance via face mask not recommended
- Nitrous oxide acceptable

Support: *(see page 3-4)*

Monitoring: *(see page 3-4)*

Use Doppler BP monitor as for dogs *(see Doppler monitor page 1-17)*.

Direct arterial BP measurement with catheterization of the auricular artery is more reliable for lengthy procedures *(see Direct arterial BP page 1-20)*.

Follow intervention guidelines for canines *(see page 4-1)*.

Special instructions:

Have a variety of ETT sizes available in the size 5.5 mm to 8 mm range.

