



Collapse Diagnostic Workup

When presented with a collapsing patient, the first step is to obtain a thorough history and physical exam in attempt to gain as much information as possible about the event. Some of the more common causes for spontaneous collapse include: idiopathic epilepsy, cardiac arrhythmias, pulmonary hypertension, and exercise induced collapse (EIC, Labradors).

Listed below are some historical questions that may be useful in differentiating what caused the event:

1. Describe the event-
 - a. Is this the first time it has happened?
 - b. How long did it last?
 - c. Was it following a meal?
 - i. Insulinomas can cause collapse directly following a meal
 - d. What was the pet doing before it happened?
 - i. High activity level during/before the event is consistent with EIC or possibly cardiac arrhythmias
 - e. What position was the patient in during the episode?
 - f. Was the patient limp during the event or did his/her muscles have tone?
 - i. Seizuring patients normally have toned muscles
 - ii. Syncopal patient's muscles are usually flaccid but with prolonged cerebral hypoxia muscle rigidity/extension of limbs may be seen, mimicking seizure activity
 - iii. Botulism causes flaccid paralysis
 - iv. Tetanus can cause toned to hyper-reflexive muscles
 - g. Did you notice what color his/her mucous membranes were? (pink, pale, blue, yellow)
 - i. Pale mucous membranes can indicate anemia/blood loss or poor perfusion
 1. Ruptured hemangiosarcoma
 2. Rickettsial diseases
 3. Acquired hematological disorders
 4. Decreased cardiac output
 5. Tachyarrhythmias
 6. Bradyarrhythmias
 - ii. Cyanotic mucous membranes can indicate a hypoxic event/decreased blood flow
 1. Pharyngeal/laryngeal disorders
 2. Collapsing trachea
 3. Small airway disease/asthma
 4. Pulmonary disease

- h. Was the patient arching his back?
 - i. Seizures can cause hyperextensive rigidity
- i. Did the patient urinate/defecate during the event?
 - i. Seizures can cause loss of bladder/sphincter control and urination/defecation
 - ii. Urination uncommonly occurs after/during syncopal episodes
- j. Did the patient seem unconscious during the event?
 - i. Syncopal patients are often unconscious
 - ii. Seizuring patients may also be unconscious
 - iii. Recovery is typically sudden with syncope, without an “aura”
- k. Did the patient vocalize during the event?
 - i. Patients often vocalize during a seizure
- l. Was there any abnormal eye movement during the event?
 - i. Seizures may cause nystagmus
- m. Any murmurs ausculted?
 - i. Heightens suspicion of cardiac syncope
 - ii. Even mitral valve disease dogs may experience syncopal episodes without pulmonary hypertension or heart failure, particularly in some “patterns” of valvular regurgitation

Once a thorough history is obtained, the next step is to perform a physical exam, along with a neurological exam. Based on findings, some of the following diagnostics may not be needed. IF no abnormalities are found, some useful diagnostics are listed below:

1. CBC/ Chemistry (including a creatinine kinase)
 - a. Bloodwork abnormalities can reveal several metabolic/hematological abnormalities
 - b. Some of the more common that cause collapse include: hypokalemia (must be severe), thiamine deficiency, Addison’s disease, insulinoma, hypocalcemia, hypoglycemia, myopathies, and anemia.
2. 4DX snap test
 - a. A 4DX snap test can be used to test for the presence of heartworm antigens, as well as tick borne diseases such as Lyme, Ehrlichiosis, and Anaplasmosis
3. ECG (monitor for at least 30 minutes if not all day long in clinic)
 - a. ECG findings may be suggestive of cardiomyopathies
 - b. Ex: ARVC in boxers and English Bulldogs, Sick Sinus Syndrome in Schnauzers, West Highland White Terriers and Cocker Spaniels, DCM in Dobermans
 - i. Arrhythmias in Dobermans usually “predict” occult DCM
4. Thoracic radiographs
 - a. Thoracic radiographs can be helpful in diagnosing cardiac enlargement/disease, pulmonary effusion, pulmonary edema, pericardial effusion, metastatic neoplasia, fungal pneumonia, etc.
5. Non-invasive blood pressure
6. “Flash” abdomen/thorax with ultrasound and look for pericardial, pleural, or abdominal effusions.

- a. Non invasive blood pressure would help you identify any circulatory problems, or cardiac disease causing increased vascular resistance