TVP
TODAY'S VETERINARY PRACTICE
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Critically evaluate patient history, signalment, and examination findings to form an initial differential diagnosis.

Is the cat actively displaying signs of respiratory distress?

Yes

Stabilize the patient
- Oxygen support
- Empirical medical management (may include bronchodilator, steroids, diuretics, thoracocentesis, etc. as indicated based on initial clinical suspicion and signalment)
- May need to delay diagnostics until stabilized
- If able based on patient status, focused ultrasound assessment and NT-proBNP test may help guide empirical management decisions

No

Measure NT-proBNP

Normal
Cardiogenic cause of respiratory signs unlikely; continue workup for primary respiratory disease

Abnormal
Evaluate further for possible cardiogenic cause/component of respiratory disease signs

Obtain thoracic radiographs[a]
- **Primary lung pattern:** Bronchial or mixed bronchointerstitial
  - Heartworm disease
  - Lungworm disease
  - FLAD
- **Primary lung pattern:** Alveolar or interstitial
  - Infectious pneumonia
  - Fungal disease
- **Primary lung pattern:** Nodular
  - Neoplasia
  - Abscess
- **Ratio of the width of the right pulmonary artery to the width of the ninth rib >1.6 in either ventrodorsal or dorsoventral view:** Potential for heartworm disease[5]

Perform blood analysis

CBC
- **Eosinophilia:** Increased suspicion for FLAD or parasitic disease
- **Neutrophilia, lymphocytosis:** Increased suspicion for infectious or neoplastic causes
- May be normal

Serum chemistry: Often normal

Increased suspicion for parasitic disease based on blood analysis and thoracic radiographs?

Yes

Perform heartworm antibody and antigen testing
- **Positive:** HARD is likely
- **Negative:** HARD is unlikely but not completely ruled out

Perform Baermann fecal sampling
- **Positive:** Lungworm-associated respiratory disease likely. Provide treatment accordingly.
- **NPS:** Lungworm disease unlikely, but consider empirical deworming if patient lifestyle supports increased risk

No

Negative/NPS

Perform bronchoalveolar lavage

Cytology and cell count:
- >14%–17% eosinophilic inflammation → consistent with feline asthma[1,2]
- Nonspecific neutrophilic inflammation <7% neutrophils → consistent with chronic bronchitis[1,2]
- Mixed inflammatory response → consistent with feline chronic asthmatic bronchitis if a significant neutrophilic component is present[1]

Culture: Typically negative[b]

Results typical of FLAD

Cytology and cell count[3]:
- Primarily neutrophilic
- Septic neutrophils may be noted
- Intracellular bacteria may be present

Culture: Positive growth[b]

Results typical of bacterial or fungal infection

Cytology and cell count:
- Eosinophilic inflammation predominates >14%–17%
- Lungworm may be seen

Culture: Typically negative[b]

Results typical of parasitic disease

Cytology and cell count:
- Tumor cells may be noted and may be the predominant cell type
- Inflammatory processes may be present to varying degrees depending on presence of secondary infections, etc.

Culture: Typically negative, but positive results may occur secondary to concurrent opportunistic infection[b]

Results typical of neoplastic disease

FLAD = feline lower airway disease; HARD = heartworm-associated respiratory disease; NPS = no parasite seen; NT-proBNP = N-terminal pro–B-type natriuretic peptide.
[a]These are only general guidelines. Other patterns may be seen, and other conditions may cause coughing in cats. For example, a cat with severe chronic bronchitis may have an alveolar component.
[b]Oropharyngeal contamination may yield false-positive bronchoalveolar lavage culture results. Critically consider positive results within clinical context.

References

1. Lee EA, Johnson LR, Johnson EG, Vernau W. Clinical features and radiographic findings in cats with eosinophilic, neutrophilic, and mixed airway inflammation (2011-2018). *J Vet Intern Med*. 2020;34(3):1291-1299. doi:10.1111/jvim.15772
2. Lin CH, Wu HD, Lee JJ, Liu CH. Functional phenotype and its correlation with therapeutic response and inflammatory type of bronchoalveolar lavage fluid in feline lower airway disease. *J Vet Intern Med*. 2015;29(1):88-96. doi:10.1111/jvim.12494
3. Dear JD, Vernau W, Johnson EG, Hulsebosch SE, Johnson LR. Clinicopathologic and radiographic features in 33 cats with aspiration and 26 cats with bronchopneumonia (2007-2017). *J Vet Intern Med*. 2021;35(1):480-489. doi:10.1111/jvim.16005
4. Hooi KS, Defarges AM, Sanchez AL, et al. Comparison of bronchoscopic and nonbronchoscopic bronchoalveolar lavage in healthy cats. *Am J Vet Res*. 2018;79(11):1209-1216. doi:10.2460/ajvr79.11.1209
5. Nelson CT, McCall JW, Moorhead A, et al. American Heartworm Society feline guidelines for the prevention, diagnosis, and management of heartworm (*Dirofilaria immitis*) infection in cats. American Heartworm Society. Updated 2024. Accessed December 2, 2025. https://www.heartwormsociety.org/veterinary-resources/american-heartworm-society-guidelines