

THE ASYNCHRONOUS CURTAIN SIGN OCCURS IN RESPIRATORY CONDITIONS OTHER THAN PNEUMOTHORAX

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INTRODUCTION

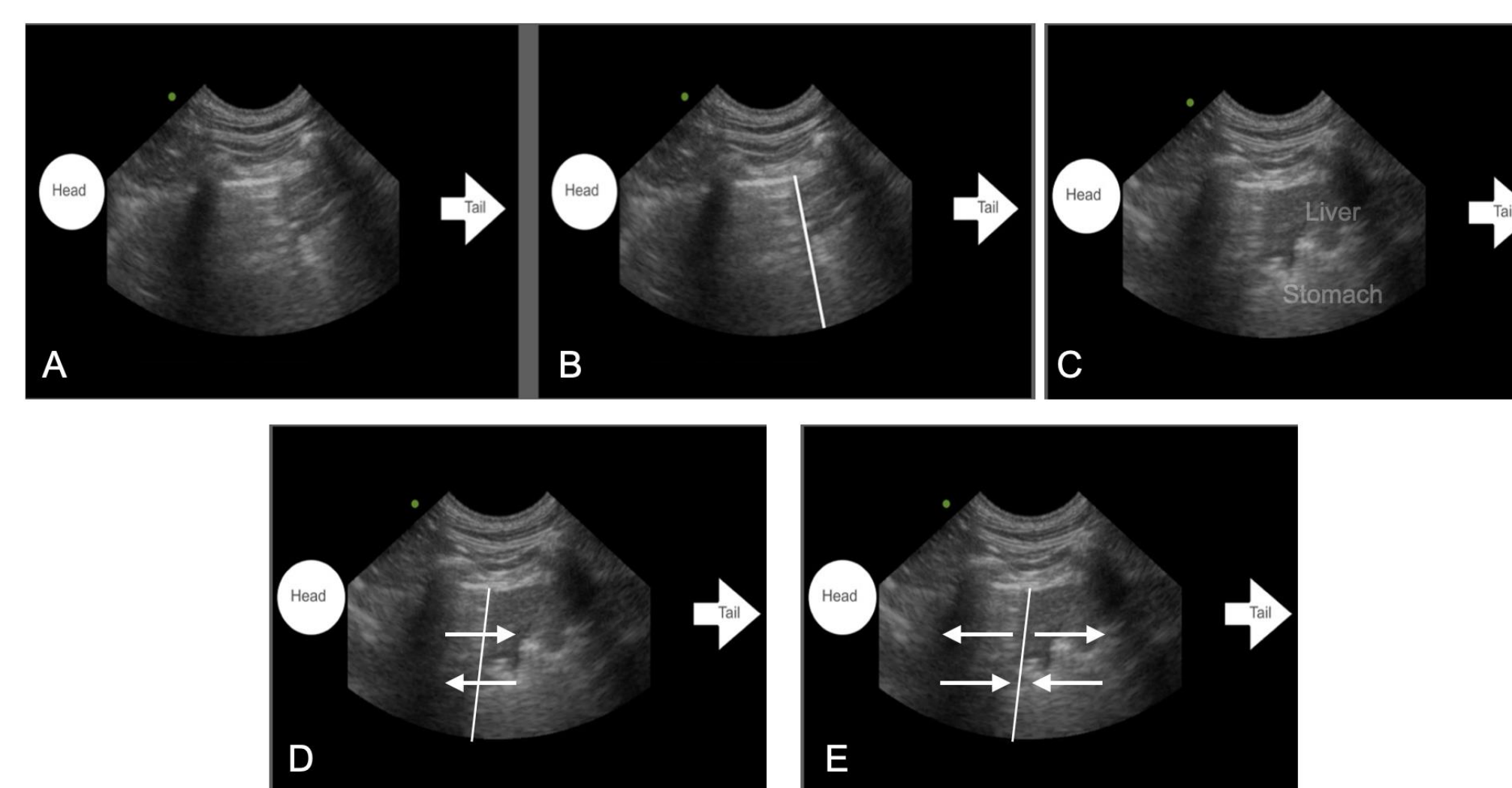
Newer strategies for diagnosing pneumothorax (PTX) include a phenomenon called the asynchronous curtain sign (ACS) at the caudodorsal aspect of the lung field where it meets the pleural cavity-abdominal cavity transition zone, referred to as the TFAST® Chest Tube Site or Caudodorsal Vet BLUE® view. The ACS is not pathognomonic for PTX. Clinicians using point-of-care ultrasound in the emergency, critical care, and perioperative setting should know that other respiratory conditions can create the same phenomenon of ACS in the absence of PTX.

METHODS

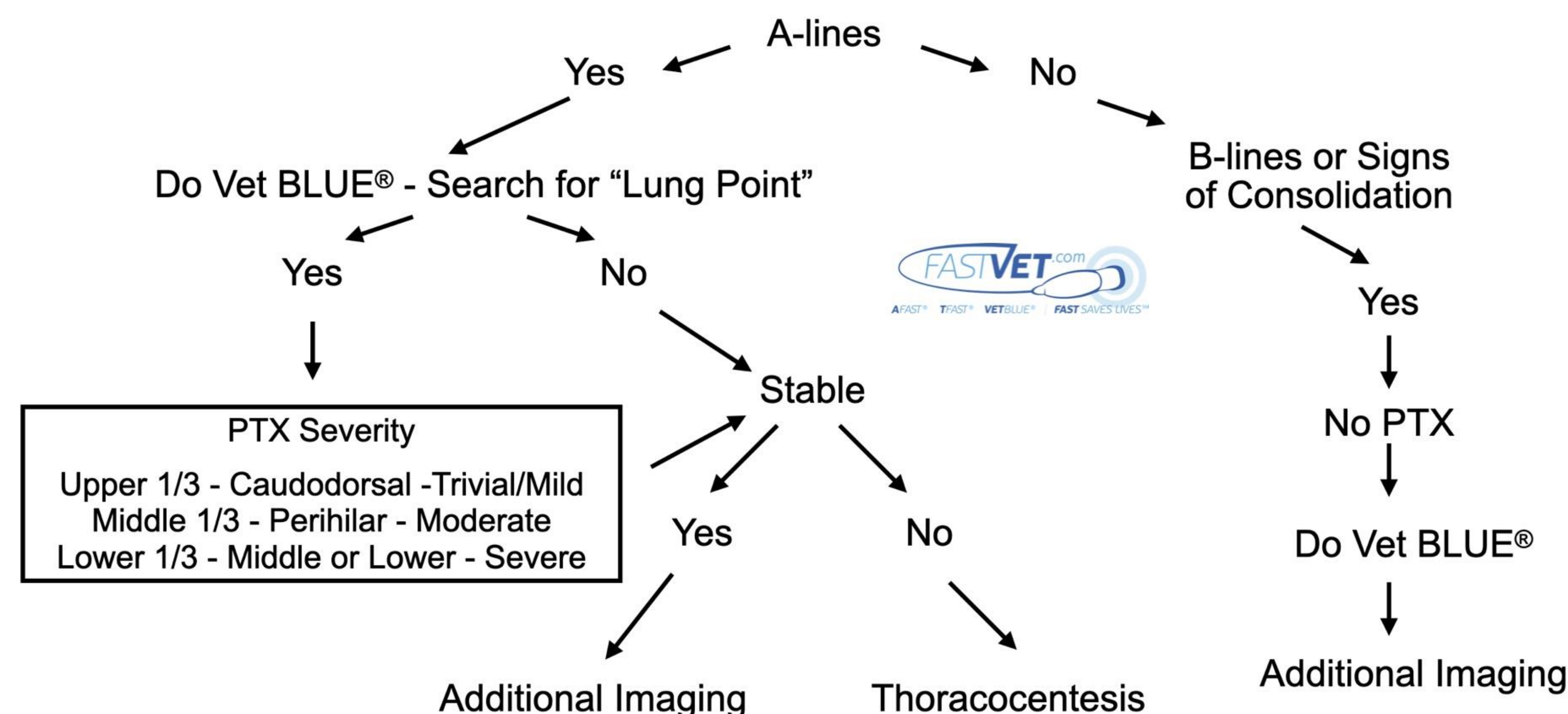
A series of approximately 50 small animal respiratory cases having thoracic radiography (TXR) without PTX and TFAST® or Vet BLUE® lung ultrasound were reviewed through archived case images for the presence of an ACS. Seven cases with an ACS without PTX were then profiled including signalment, physical exam findings, breathing characterization, Vet BLUE® findings, and final diagnosis.

CONCLUSION

Dogs and cats with tachypnea, dyspnea, and paradoxical abdominal breathing may have asynchronous curtain signs for conditions other than pneumothorax. Clinicians using should be aware of the phenomenon. An updated clinical diagnostic algorithm with the asynchronous curtain sign has been created.



“Asynchronous Curtain Sign” at TFAST® Chest Tube Site



Created by Dr. Gregory Lisciandro, DVM, Dipl. ABVP, ACVECC, ©2025

RESULTS

Seven studies were identified that included 4 dogs and 3 cats. Dog breeds included a Golden Retriever, Pomeranian, Shih Tzu, and Chihuahua; and cat breeds included Domestic Shorthair, Domestic Longhair, and Maine Coon with 4 female spay dogs; and 1 female spay and 2 male castrated cats. Average and ranges for the following parameters were age (years), body weight (kg), body condition score (BCS, 9-point), rectal temperature (C°), heart rate (minute⁻¹), respiratory rate, (minute⁻¹) as follows for dogs followed by cats: 12.8 years (10-17) and 11.6 (9-12); 12.05 kg (6.2-29) and 6.13 (4.1-7.4); 6 BCS (5-8) and 6 (4-8); 37.7 C° (36-39) and 38.3 (37.9-38.5); 124.5 beats minute⁻¹ (60-156) and 165 (148-180); and 100 breaths minute⁻¹ (pant-180) and 64 (44-96). Respiratory characterization was as follows: dogs having tachypnea 1, dyspnea 3; cats having tachypnea 1, dyspnea 2; and respiratory distress as mild, moderate, severe as follows: dogs 2, 1, 1; and cats 1, 2, and 0, respectively. All had TXR confirming the absence of PTX. Vet BLUE® findings of B-lines versus absent B-lines were as follows: dogs 2 with B-lines and 2 without; and cats 3 with B-lines and none without, respectively. Final diagnoses for the 4 dogs and 3 cats were congestive heart failure (N=4, 2 dogs, 2 cats), neurologic disease (N=1, 1 dog), metastatic lung disease (N=1, 1 cat), and an unclassified diagnosis (N=1, 1 dog).

REFERENCES

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- Hwang TS, Yoon YM, Yeon SC, et al. Usefulness of Transthoracic Ultrasound for the Diagnosis of Mild Pneumothorax. *J Vet Sci* 2018;19(5):660-666.