

IT'S YOUR CASE

Species: Canine

Breed: Bichon Frise

Sex: Female Entire

Age: 5 years

Clinical History:

She is coughing this week with increased respiratory effort the past few days. Additionally, she has been lethargic and has a decreased appetite. She has a soft continuous murmur that has not been known to the owners as this is her first vet visit since her puppy vaccines.

Anatomic regions: Thorax

Details of study and technical comments: A three view radiographic study of the thorax are presented for interpretation.

Diagnostic interpretation:

THORAX:

There is severe global enlargement of the cardiac silhouette such that it spans both the height and width of the thorax with severe dorsal displacement of the trachea (red arrow). The caudal vena cava courses craniodorsally. The aortic arch is enlarged and bulges at the 12-2 o'clock location in the VD view (dark green arrows). There is a severe generalised hypervascular pattern with predominantly generalised enlargement of the arteries (orange arrowheads) that are larger than the corresponding veins. The arteries have mild peripheral tortuosity (yellow arrows). The pulmonary parenchyma has a generalised increased opacity. The mainstem bronchi are abaxially displaced (dark blue arrows). The caudal contour of the heart has a normal shape; there is no straightening of the caudal cardiac waist.

The trachea has a normal diameter body is dorsally displaced as described above. The mainstem bronchi are narrowed especially on the left (purple arrow). The lobar bronchi are normal in size and tapering. The diffuse interstitial lung pattern limits assessment of the smaller airways in the periphery of the lung, but a component of bronchial thickening cannot be ruled out.

The mediastinum and pleural space are unremarkable.

The skeletal structures and surrounding soft tissues are unremarkable. The included cervical spine and laryngeal region are unremarkable.



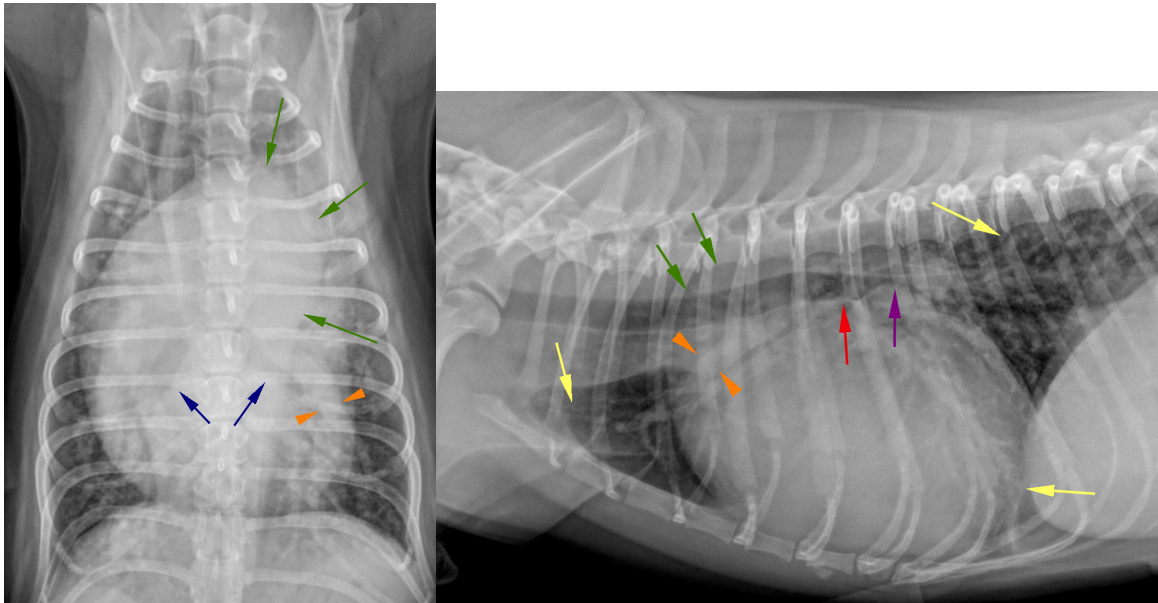
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t. +44 (0)1223 422251 www.vet-ct.com e. info@vet-ct.com

Co Number 6955449 Registered Office The Broers Building, 21 JJ Thomson Avenue, Cambridge, CB3 0FA, UK

ABN 24601862220 Registered Office in Australia Suite 11, 185-187 High Street, Fremantle, WA 6160, Australia

This report is based on the available history and radiographic interpretation only and not on a physical examination of the patient. It has been prepared specifically for interpretation by the currently licensed and registered veterinary surgeon responsible for the care of this patient.



Conclusions:

- Severe generalized cardiomegaly is present with a severe arterial hypervascular pattern and a suspected ductus bump.
 - The size of the heart and enlarged arteries are most consistent with a congenital left-to-right shunting heart defect such as a Patent Ductus Arteriosus (PDA), Ventricular Septal Defect (VSD) or other complex anomaly.
 - The diffuse interstitial pattern is likely a combination of severe hypervascular disease and a component of pulmonary edema is possible
 - There is mild compression of the mainstem bronchi present.

Additional comments:

The generalized enlargement of the pulmonary arteries can also be seen with heartworm disease. However, the cardiac enlargement is most consistent with volume overload and in combination with large arteries is prioritised to a congenital heart defect with left-to-right shunting. The coughing could be due to compression of the mainstem bronchi due to the large size the heart. The enlarged aortic arch resembles a ductus bump and is the reason that a PDA is included in the differential diagnosis for this dog.

An echocardiogram is indicated to further assess and confirm the presence of a congenital heart defect and rule out other causes for the volume overload of the heart.

Comments about the vascular pattern:

There is always a vascular pattern! The vessels and the interstitium contribute to the baseline opacity of the lungs. When there is less perfusion of the vessels, the lungs may appear more lucent; for example, this may be observed in patients with dehydration or hypoadrenocorticism.

The opposite is true as well. When the vessels are overperfused, the distention of the vessels may increase the overall opacity of the lungs. In this circumstance, deep inspiratory image capture is ideal as this will help determine if the boundaries of the vessels are sharp (meaning that the opacification is coming from the vessels) or if there is less distinction of the margins of the vessels (meaning there may be concurrent change to the interstitium). If the image is expiratory, there is crowding of the vessels and this assessment is made more difficult.



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