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What is Your Diagnosis?

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Signalment

A 3-month-old male Persian cat.

History

The cat had been regurgitated immediately after meal for a month or since he started to eat solid food. He was always hungry. This clinical sign was not presented either before weaning or when drinking water.

Clinical Examination

The cat was slightly thin. Foreign body was not found via cervical and abdominal palpations. Complete blood count profile revealed mild anemia. Liver and renal profiles were within normal limits.

Radiographic Examination

In addition to plain thoracic radiographs, immediately after nonionic iodine contrast solution swallow radiograph of the right lateral view was taken to evaluate esophageal abnormality.

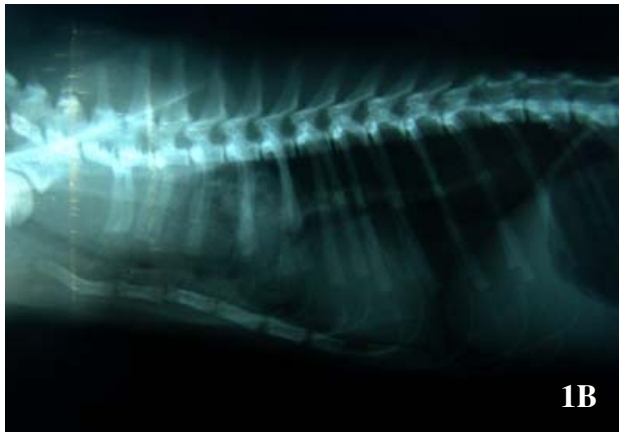

Figure 1. Ventrodorsal (A) and right lateral thoracic (B) radiographs.
Figure 2. Esophagram, right lateral thoracic radiograph taken immediately after a swallowing of nonionic iodine contrast solution.

Give your diagnosis and turn to the next page.

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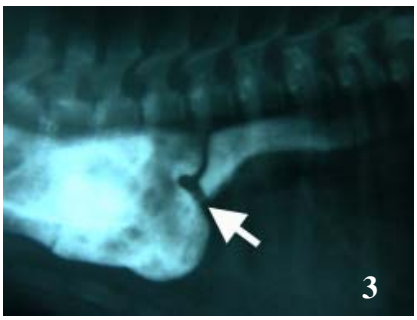
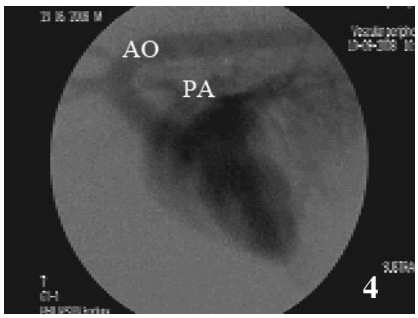
Radiographic findings

Plain thoracic radiographs (Fig.1A, B) revealed a dilation of the esophagus cranial to the heart base. The trachea was compressed and displaced ventrally while the heart was dislocated vertically (Fig. 1B). Esophagram (Fig. 2) howed large amount of iodine contrast-filled in the dilated esophageal segment. Only small amount of iodine contrast could pass the caudal portion of esophagus.

Radiographic diagnosis

Vascular ring anomaly; most likely persistant right aortic arch





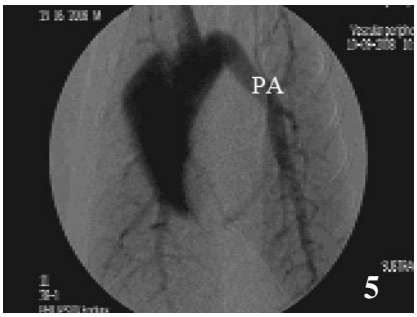


Figure 3. Constricted esophagus could be seen caudal to the dilated esophageal segment (white arrow).

Figure 4, 5. Nonselective cranial vena caval angiocardiograms showed simultaneous opacification of aorta (AO) and pulmonary arteries (PA).

Discussion

Persistent right aortic arch is the most common congenital vascular ring anomaly in cats and dogs. There is an abnormal development of right fourth aortic arch into the aorta while the ligamentum arteriosum continues to develop on the left side. To join the pulmonary trunk, the ligament constricts the esophagus during its pass resulting in a dilation of esophagus as seen in figure 3. An esophageal-cardiac silhouette sign can simply be identified from thoracic radiogram as a cranial mediastinal mass effect which is secondary to the dilation of the esophagus located at the heart base. Standing patient position with horizontal x-ray beam can provide an outline of esophageal fluid line extending in some instances as cranially far as the throat. In addition, nonselective angiocardiography should be performed to classify other similar anomalies including double aortic arch and persistent right ductus arteriosus. As seen in figure 4 and 5, aortic lesion and pulmonary outflow tract abnormalities were not detected.

References

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