

CUVS CASE FILE: When Needles Attack

HISTORY

An 8 month-old, neutered male Boxer was referred to the CUVS Emergency & Critical Care Service for evaluation and management of an intrathoracic metal foreign body.

Two weeks prior to presentation, the dog had an episode of vomiting/regurgitation. Evaluation by his primary care veterinarian, that included abdominal radiographs, was unremarkable. Approx. 5 days thereafter, he was drooling and vomited twice, but seemed to recover spontaneously. One day prior to presentation, he had an acute onset of lethargy and arching his back. He was seen by a local overnight emergency clinic who identified a metallic foreign body in the lungs on thoracic radiography. He was discharged but became progressively more lethargic. He was presented to another specialty hospital that ultimately referred him to CUVS for computed tomography (CT) scan and further management.

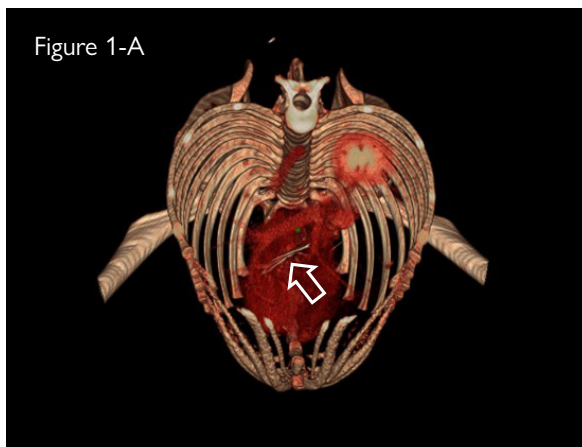
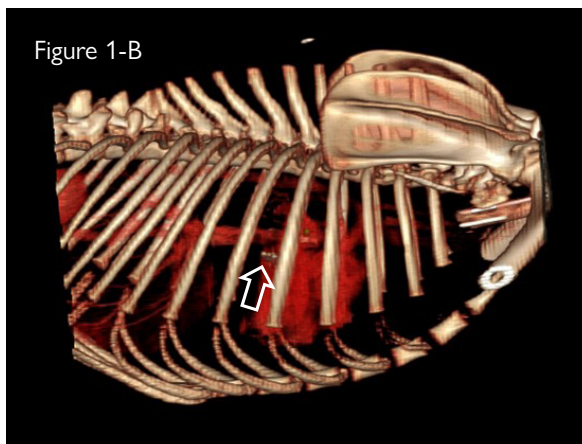


Figure 1. Preoperative CT scan reconstruction. A. caudal to cranial view. B. right to left view. Arrows show cardiac-associated foreign body



CASE SUMMARY

On presentation to CUVS, the dog was lethargic but hemodynamically stable and without evidence of respiratory compromise. A thoracic CT scan confirmed an intrathoracic metallic foreign object in the central axis of the thorax, concerning close to the caudal aspect of the heart.

Exploratory thoracotomy was performed via median sternotomy. A mediastinal region of scar tissue caudodorsal to the heart was dissected but not found to contain any metal. The scar tract was followed into the pericardium and a pericardectomy performed to evaluate the epicardium and caudal pericardial sac. A hole in the caudal aspect of the heart was identified and carefully digitally evaluated. The tip of a metallic object was found approximately 7mm deep to the epicardial surface, suggesting a needle within the left ventricle.

Given the extremely unique scenario this presented, the owner was consulted intraoperatively and presented several options together with their associated risks. These included: attempting to remove the needle through the heart, leaving the needle in place, or open-heart surgery. The owner agreed to cardiac exploratory

CUVS CASE FILE: When Needles Attack *(Continued)*

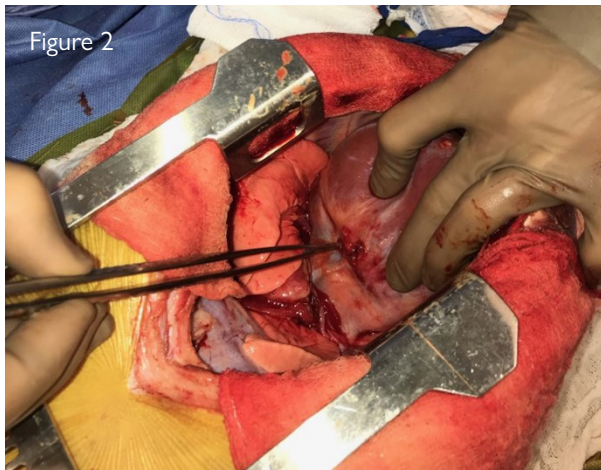


Figure 2.

The caudal epicardial/myocardial cardiac defect evidenced at surgery. Note: the pericardium has been excised and reflected to reveal the epicardium.

Figure 3.

Patient in ICU 12 hours postoperatively. Bandaged chest tube and ECG leads are in place.



and attempt to remove the needle, understanding the risk of hemorrhage with this approach. The myocardium was carefully explored, and the tip of the metallic foreign object grasped and slowly extracted. Minor hemorrhage developed from the caudal cardiac defect. The epicardial hole was closed using 3-0 PDS in cruciate interrupted pattern. A chest tube was placed, and the median sternotomy closed routinely.

The dog recovered in our ICU with monitoring and care that included ECG, pulse oximetry, chest tube drainage, and narcotic pain management. He recovered uneventfully and was discharged 2 days post-surgery. He has continued to do well, with no adverse effects.

DISCUSSION

Penetrating thoracic trauma can result in acute life-threatening injury but can also manifest surprisingly benign clinical signs. Moreover, objects can migrate into other thoracic structures, leading to significant pathology or even death some period after the initial penetration. These foreign objects should never be removed without clear identification of the location and course. Removal should be approached in a considered and careful fashion that can control, as best as able, life-threatening circumstances.

Services involved: Emergency,
Diagnostic Imaging
Surgery
Critical Care

CASE PRESENTED BY



Oliver Morgan, VMD, DACVS

Staff Surgeon, Cornell University Veterinary Specialists

*Adjunct Assistant Clinical Professor of Surgery,
Cornell University College of Veterinary Medicine*