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Chylothorax in a non-descript dog: A case report

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Abstract

A three-year-old female non-descript dog was presented to Veterinary Clinical Complex with a history of abnormal breathing pattern for the past 2 weeks. Clinical examination revealed lateral recumbent posture, dyspnoea, paroxysmal breathing and an abducted gait. Thoracic radiography revealed pleural effusion. Thoracic Ultrasonography revealed severe thoracic effusion. Needle thoracocentesis revealed white to pink coloured fluid and evacuated the pleural fluid intermittently. Pleural effusion analysis revealed elevated total proteins and triglycerides. Cytology of effusion revealed carcinoma. Hence, the case was diagnosed as chylothorax. The case was managed with intermittent pleural evacuation, fluids, antibiotics, steroids and antihistamines. The details of the case will be discussed.

Keywords: Chylothorax, bilateral needle thoracocentesis, chylous fluid, dog

Introduction

Chylothorax is the accumulation of chylous fluid in the pleural space which is a complicated disease that can be due to variety of etiologies and can be difficult to manage [1]. The etiologies for chylothorax include granuloma, trauma, congenital abnormalities of the thoracic duct, diaphragmatic hernia, cardiac disease, thoracic surgery and intra-thoracic Neoplasms associated with chylothorax *viz.*, thymoma, lymphosarcoma, lymphangiosarcoma and aortic body tumours [2]. Chylothorax results when chyle from cisterna chyli-thoracic duct system gains access to pleural space [3] (*ie.*) Chylous effusion occurs when obstruction of thoracic duct drainage supervenes [1].

Case history and observation

A three-year-old female non-descript dog was presented to Small Animal Medicine Unit of Veterinary Clinical Complex, Veterinary College and Research Institute, Tirunelveli with a history of abnormal breathing for the past 2 weeks. Clinical examination revealed respiratory distress, lateral recumbency (Fig.1), abducted gait, paroxysmal breathing. Thoracic Auscultation revealed dull lung sounds. Hematobiochemical parameters were in normal range. Lateral thoracic radiograph revealed fluid filled pleural space (Fig.2). Thoracic Ultrasonography revealed severe pleural effusion (Fig.3). The animal was placed in lateral recumbency and the site was prepared aseptically. A 20-gauge winged needle was inserted perpendicular to the chest wall along cranial aspect at the 8th intercostal space. Needle thoracocentesis (Fig.4) revealed white to pink coloured milky fluid. Pleural effusion analysis revealed triglyceride and cholesterol level of 171mg/dL and 164.03mg/dL respectively on day 1; 112mg/dL and 170mg/dL respectively on day 3; 178mg/dL and 121.35mg/dL respectively on day 6; 933.8mg/dL and 97mg/dL respectively on day 13. Cytology of the effusion revealed a pH of 8.0, Blood +2 (80 cell/ μ L), Glucose +1(5.5mmol/L), Protein +3(3.0 g/L), Leucocyte (15cell/ μ L) and cells suggestive of carcinoma. Based on the above findings, the case was diagnosed as Chylothorax and managed with intermittent pleural evacuation.

Treatment and Discussion

Intermittent pleural evacuation was performed by bilateral needle thoracocentesis on the following days *viz.*, day 1 (Fig.5), day 3, day 6 (Fig.6), day 13 and one litre (600 mL on left;400mL on the right), 800mL (500mL on left;300 mL on the right), 600mL (350 mL on the left; 250 mL on the right) and 1.5 litres (one litre on left; 500mL on right) were relieved on both the sides of thorax respectively. Post-procedure, the animal was able to walk properly without respiratory distress (Fig.10). The case was treated with Inj. Ringer's Lactate @ 10ml/kg b.wt I/V, Inj. Enrofloxacin @ 5mg/kg b.wt I/M, Inj. Prednisolone @ 1 mg/kg b.wt

I/M and Inj. Chlorpheniramine maleate @ 0.2 mg/kg b.wt and advised the same as oral medication with a low- fat diet. The treatment was continued for two weeks and the animal succumbed to death after 4 weeks.

Chylous effusion occurs when obstruction of thoracic duct drainage supervenes. In canines, chyle is produced and drained by the thoracic duct at the rate of 2-4 ml/kg/hour approximately as per Brichard *et al.* 1995 [4]. The exact etiology in the present case remained ambiguous either of tumour induced or thoracic duct drainage failure, as the case is more of idiopathic origin. The case was confirmed by measuring and comparing thoracic effusion with serum triglyceride concentration and the pleural fluid cholesterol / triglyceride ratio, the present case agreed with Leah *et al.*, 2010 who reported that if the value is less than 1, the fluid is of chylous in nature [1]. Nonsurgical management of chylothorax was preferred due to owners' unwillingness for surgical intervention. Hence, the following therapeutic modalities were taken *viz.*, intermittent pleural evacuation by needle thoracocentesis was performed to relieve the respiratory distress by draining the pleural space and reducing the formation of chyle [3]. Dietary modifications were prescribed with a low-fat diet for a month which was in concordance with Leah *et al.*, 2010 who also reported the success rate for the low-fat diet regimen is 20-25% resolution only [4,5].



Fig 3: Thoracic Ultrasonography revealing Thoracic effusion with heart floating in the thoracic cavity.



Fig 1: Animal in lateral recumbency



Fig 4: Aseptic winged needle thoracocentesis



Fig 2: Lateral radiography revealing thoracic effusion



Fig 5: Thoracic effusio on DAY 1



Fig 6: Thoracic effusio on DAY 6

Conclusion

Chylothorax cannot be managed by simple repeated thoracocentesis as it may develop fibrinous tags and the development of fluid compartmentalization. On the other hand, to relieve the respiratory distress caused by constant fluid buildup in the thoracic cavity, thoracocentesis is an emergency procedure of the hour. For long term management, surgical correction and dietary modification is recommended. And still, chylothorax remains a difficult disease to manage until the etiology is identified.

References

1. Birchard SJ, McLoughlin MA, Smeak DD. Chylothorax in the dog and cat: a review. *Lymphology*. 1995;28(2):64-72.
2. Fenway Chang, Andrew Linklater: Acute pleural effusion in a dog.
3. Eric Monnet. Chylothorax (Proceedings): April 1, 2010.
4. Leah A. Cohn. White pleural effusion: Pyothorax and chylothorax(Proceedings): April 1, 2010.
5. Ameet Singh, Brigitte Brisson, Stephanie Nykamp. Idiopathic chylothorax in dogs and cats: Non-surgical and surgical management.

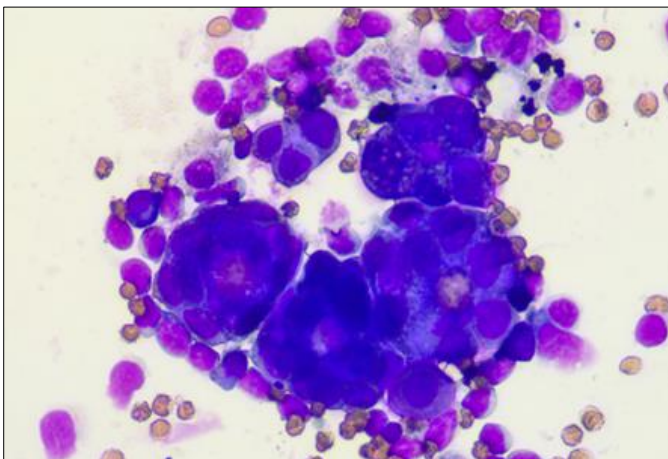


Fig 9: Cytology of fluid revealing carcinoma



Fig 10: Distress relieved post-thoracocentesis