RESEARCH PROGRESS REPORT SUMMARY

Grant 02690-A: Diagnostic Utility of Thoracoscopy for Localization of Pulmonary Bullae in Dogs with Spontaneous Pneumothorax

Principal Investigator: Valery Scharf, DVM, MS

Research Institution: North Carolina State University

Grant Amount: $13,829

Start Date: 1/1/2020 **End Date:** 12/31/2022

Progress Report: End-Year 2

Report Due: 12/31/2021 **Report Received:** 12/30/2021

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Original Project Description:

Primary spontaneous pneumothorax is defined as the presence of air in the space around the lungs without an obvious precipitating factor. This disease presents as a life-threatening emergency causing shortness of breath, exercise intolerance, and possible collapse or sudden death. The diagnosis of these lesions that cause spontaneous pneumothorax in dogs (known as pulmonary bullae) remains challenging. The accuracy of advanced imaging such as computed tomography (CT) for identifying bulla in dogs with spontaneous pneumothorax is limited. Currently, thorough exploration of the chest through an open surgical approach is the diagnostic standard for primary spontaneous pneumothorax. This strategy, however, requires an invasive surgical approach and weeks of post-operative recovery. In contrast, video-assisted scoping (thoracoscopy) of the chest, known as VATS, is preferred to open surgery for the treatment of spontaneous pneumothorax in human medicine. VATS is associated with fewer complications and reduced post-operative pain, making it a desirable alternative to the current standard in veterinary medicine, but its reliability in correctly identifying pulmonary bullae associated with spontaneous pneumothorax in dogs has not yet been proven. This study aims to prospectively evaluate the ability of thoracoscopy to identify and localize pulmonary bullae in dogs with primary spontaneous pneumothorax, thus facilitating minimally invasive treatment options for dogs with this disease.

Publications:

N/A – statistical analysis and manuscript composition has not yet been performed on this initial number of dogs enrolled.

Presentations:

N/A – the current data is too preliminary to support presentation of materials related to this research at this time.

Report to Grant Sponsor from Investigator:

We have made reasonable progress during the past 6 months of our clinical study, enrolling 1 additional dog. Although the results continue to be promising and indicate that thoracoscopy using a variable endoscope is able to identify most if not all bullous lesions in dogs presenting with spontaneous pneumothorax, the staffing constraints by our hospital have limited our intake of emergency cases and have negatively impacted our ability to enroll dogs in this study over the past 6 months. Although the rate of progress over the previous year in light of COVID19 and staffing constraints puts us behind schedule in completing data collection by 2 years after study initiation, we are optimistic that our results may allow us to perform data analysis and manuscript composition on an initial 10 dogs even though we initially hoped to enroll 15. We will begin preliminary analysis once 10 dogs are enrolled, allowing us to maintain our original schedule with a compressed timeframe for data analysis and manuscript composition. If we are unable to enroll 2 additional dogs in the next 6 months, we may consider publication of our findings from the initial 8 dogs versus extension of the study to continue enrollment.