

MILA Chest Tube Discussion

Due to the high morbidity and mortality following traditional chest tube placement in humans, a transition to small-bore wire-guided chest tubes occurred. In 2006, a similar change occurred in veterinary medicine when MILA released a fenestrated small-bore guidewire style chest tube. The goal when designing the MILA fenestrated tube was to provide a more patient friendly and comfortable chest tube for veterinary patients. Although the initial target population was small dogs and cats, we have since used the MILA chest tubes in all patients ranging from a 2kg kitten with pyothorax, to a 50kg Mastiff with spontaneous pneumothorax. I personally have documented and followed over 80 patients who have benefited from these chest tubes over the years, allowing us to make some comments on applications, advantages and complications.

Over the past 5 years, we have used them for the treatment of pyothorax, hemothorax, chylothorax, traumatic and spontaneous pneumothorax and simple pleural effusions. Despite the smaller lumen diameter (compared to traditional chest tubes), we have documented success in both cats and small dogs diagnosed with pyothorax. Thoracic lavage was also possible and well tolerated in this patient population (under 10 kg) using the MILA chest tubes. These fenestrated chest tubes are shorter than the larger traditional chest tubes, requiring the clinician to adjust placement (more dorsal or ventral) to ensure the fenestrations reach the target area. As previously mentioned, we have used them in large breed dogs with both hemothorax and pneumothorax with no complications or concerns. Unlike traditional thoracostomy tubes, the MILA thoracostomy tube should not be tunneled as this will increase the risk of kinking and subsequent problems with aspiration. An adhesive dressing (Opsite® , Smith & Nephew) placed over the catheter insertion site will prevent movement of the catheter and potential entrainment of room air.

One of the most important benefits for the use of the MILA chest tubes has been the minimal sedation required for placement. We routinely place them under light sedation and a local infiltrative skin block with little complications. Occasionally we have needed more heavy sedation for fractious patients. General anesthesia has never been required for the placement of these tubes, which has been necessary for placement of traditional tubes, especially in cats and small dogs. This is especially beneficial in cardiovascular and respiratory compromised patients who often cannot tolerate the side effects of heavy sedation or anesthesia. The second greatest advantage has been the large improvement in patient comfort and tolerance for the tubes. Due to the small size, ease in placement and flexibility, patients tolerate the tubes very well. The long term need for heavy sedation, analgesia and instillation of local anesthetics, in order to reduce the pain caused by the chest tube, is not required. Most patients are not even aware of their presence.

Although we believe MILA has developed a truly great product, the MILA chest tubes do have limitations and associated disadvantages. Due to the flexibility and small size, the tubes can be very positional in terms of function. It is not uncommon for patients to be rotated and moved from side-to-side in order to aspirate thoracic fluid. This is a compromise that we feel is justified as a result of the gain in patient comfort and reduced sedation. Due to the fact that these tubes are more positional than traditional chest tubes, we do not recommend their use, in life-threatening pleural space diseases (e.g tension pneumothorax, large volumes of fluid) where rapid removal is necessary. The only significant complication noted thus far following placement is the development of a pneumothorax in two cats. Although a complication of the underlying disease cannot be excluded, both cats did develop a severe pneumothorax, necessitating continuous suction and, thus the placement of a traditional chest tube. At that time attachment to a continuous suction unit had not been assessed with these tubes. Since then, I am aware of patients on whom continuous suction was used with the MILA tubes without complication. Despite these isolated cases, it is our recommendation that the MILA chest tubes be used with caution in cases requiring continuous suction. A recent study (Valtolina and Adamantos, 2009) published in the Journal of Small Animal Practice confirmed their ease of use, satisfactory performance with only minor complications.

I strongly believe that when used in a suitable patient population, the MILA fenestrated chest tube provides a safe, reliable and patient friendly alternative to traditional chest tubes.

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