# MILA Chest Tube Discussion

The goal when designing the MILA fenestrated chest 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. We have documented and followed over 20 patients who have benefited from these chest tubes in the last year, allowing us to make some comments on applications, advantages and complications.

We (Ontario Veterinary College -VTH, Intensive Care Unit) 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 (we have yet to use them on a patient weighing more than 10 kilograms with a pyothorax). Thoracic lavage was possible, and well tolerated, in this patient population 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. The catheter should not be placed too ventrally otherwise this will allow chest fluid to leak into the subcutaneous tissue. 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 result in 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. However, it should be noted that because these tubes are more positional than traditional chest tubes, we do not use them, nor do we recommend their use, in life- threatening pleural space diseases (e.g tension pneumothorax, large volumes of fluid) where rapid removal is necessary. The only 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 traditional chest tube placement and continuous suction to treat the pneumothorax. Attachment to a continuous suction unit has not been assessed with these tubes, and therefore, at this time it is our recommendation that the MILA chest tubes be used with caution in cases requiring continuous suction.

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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## Sample Case: Centesis - 1 Year Old Boxer

"We used the 14ga Guidewire Chest Tube Kit (Part # CT1410). We also placed a standard 16ga Angiocath (see picture below). The chest tube catheter worked significantly better."
Jerry Jensen, EMT-P, CVT, VTS(ECC) ICU Supervisor, Veterinary Specialty Center, Buffalo Grove, IL.