

OBJECTIVES

To find out the advantages and disadvantages, success rate and future prospects for each of the current techniques used for the resolution of idiopathic chylothorax.

CHYLOTHORAX

It is a life-threatening condition, in which lymph accumulates in the pleural cavity. There are multiple causes, nevertheless, in veterinary medicine idiopathic chylothorax is the most common presentation and it has been frequently associated with lymphangiectasia at the mediastinal level.

For its diagnosis it is necessary to rely on clinical signs as well as imaging techniques and analysis of the liquid obtained by thoracocentesis.

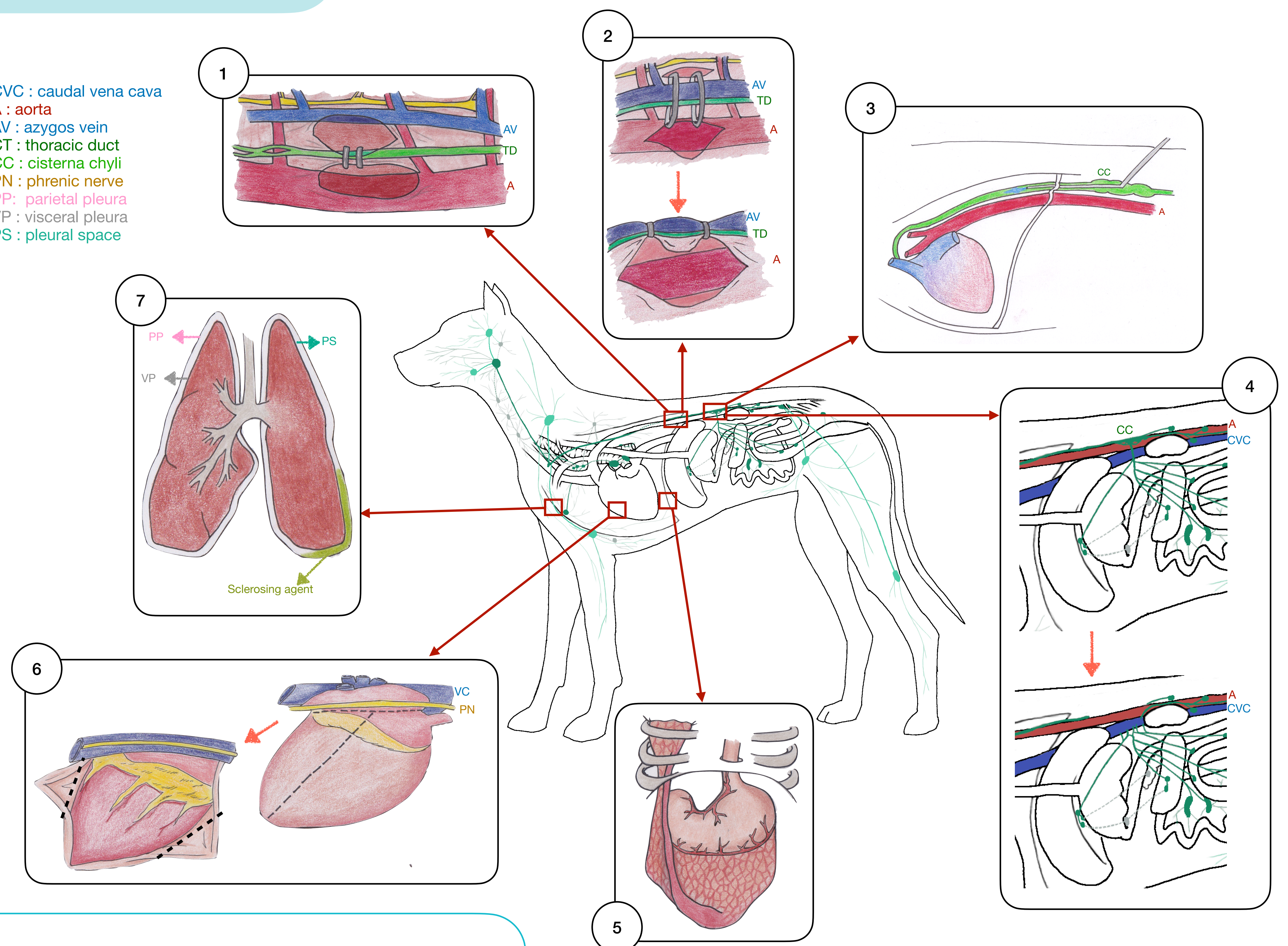
LYMPHATIC SYSTEM

The cisterna chyli collects the lymph at the abdominal level and gives rise to the thoracic duct which is the main route of lymphatic return to the general circulation. The thoracic duct empties between the left external jugular vein and the left subclavian vein. These are the main target structures for performing surgery, however, there is a great individual variation we must take into account before executing some of the following surgical procedures.

SURGICAL TECHNIQUES

- 1 Thoracic duct ligation
- 2 Block thoracic duct ligation
- 3 Thoracic duct/ cisterna chyli embolization
- 4 Cisterna chyli ablation
- 5 Omentalization
- 6 Subtotal pericardiectomy
- 7 Pleurodesis

CVC : caudal vena cava
A : aorta
AV : azygos vein
CT : thoracic duct
CC : cisterna chyli
PN : phrenic nerve
PP : parietal pleura
VP : visceral pleura
PS : pleural space



CHYLOTHORAX THERAPEUTIC OPTIONS

Techniques	Species	Compendium (Sinh et al. 2012). % of resolution	Article (Reeves et al. 2019)	
			Analyzed articles	% of resolution
TDL+SP	Dog	60-100%	(n=34) 40%	74 %
	Cat	80 %	(n=15) 21%	73 %
TDL	Dog	50-59%	(n=26) 31%	31 %
	Cat	14,3-53%	(n=37) 51%	41 %
TDL+CCA	Dog	87,7 %	(n=12) 14%	83 %
	Cat		(n=7) 10% +SP	14 %
TDL+SP+O	Dog	57-72%	(n=8) 10%	88 %
	Cat	57 %	(n=26)	

Thoracic duct ligation (TDL), subtotal pericardiectomy (SP), Omentalization (O), cisterna chyli ablation (ACC).

The joint use of thoracic duct ligation with other techniques, such as subtotal pericardiectomy or cisterna chyli ablation, presents high success rates in both dogs and cats while, the single use of thoracic duct ligation presents high reoperation and mortality percentages.

CONCLUSIONS

- There is no 100% effective technique for the resolution of idiopathic chylothorax.
- The joint use of various techniques (TDL + CCA and/or SP) can be curative in a high percentage of cases.
- It is recommended to carry out imaging techniques to determine the morphology of the TD, the CC and the leak site in order to plan the surgery, as well as postop to estimate the production of lymphaticovenous anastomosis and thus surgical success.
- Near-infrared fluorescent lymphography appears to be a sensitive and safe technique for the intraoperative identification of lymphatic structures.
- Studies are being carried out to establish the efficacy of minimally invasive techniques such as embolization of CC and CT.