

Supplemental Table 1

Patient Study Set (year of publication) ^{ref}	No. Operatively managed patients	Case Findings			
		<i>Pre-op Clinical Manifestations</i>	<i>Lymphatic Imaging/ Diagnostics</i>	<i>Surgical/ Interventional Management</i>	<i>Documented Outcome(s)</i>
Study 1 (1978) ¹³	1	Cardiac defects; cryptorchidism; chylothorax	CXR: Chylothorax. Autopsy: aplastic thoracic duct w/ collaterals	Closure of thoracic chylous leakage	Attempted but with poor results, patient died a few weeks later before LAG could be performed
Study 2 (1980) ¹⁴	1	Perineal/genital lymphedema	C-LAG: Pelvic lymphangiectasia with hypoplastic nodes, inguinal collaterals, right popliteal lymphocele	Inguinal lymph node biopsy	Development of a lymphocutaneous fistula, recurrent chylometrorrhea, and lymphedema of the left labia majora
Study 3 (1980) ¹⁵	2	Cardiac defects (n=2)	CXR (n=2): Bilateral fine reticulonodular pattern (n=2), abnormal pleural effusion (n=2), retrosternal density (n=1)	Cardiac surgery (n=2)	Prominent mediastinal lymphatics observed (n=2); immediate post-op chylothorax following unintentional incision of dilated lymph vessels (n=1); 3-year development of lymphedema and chylometrorrhea (n=1)



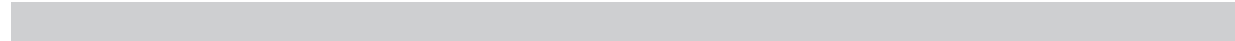
Study 4 (1998)⁷	1*	Cardiac defects; cryptorchidism; lymphedema; ascites; perineal/genital edema; genital lymphorrhea	MRL: Diffuse pelvic/retrope ritoneal lymphangiecta sia. LAS: Thoracic duct abnormality, perineal reflux, lower extremity lymphoceles, reduced lymph flow rate. C-LAG: abnormal lymphatics, dilated abdominal and peri- aortic collaterals	Abdominal LVA	Excellent lymphatic flow through anastomosis; good recovery; reduced scrotal swelling and vesicular discharge
Study 5 (2016) ⁴	2	Cardiac defects (n=2); lymphedema (n=1); genital lymphorrhea (n=1)	LAS, Venous Duplex US (results unavailable - Pt 3 and 8)	Cardiac surgery + intraoperative thoracic duct ligation (n=1)	Acute right chylothorax; protein losing enteropathy and cachexia; death at age 56 from congestive heart failure (6 years post-op)
				Scrotoplasty (n=1)	Reduced chylous leakage; persistence of occasional penile leakage



Study 6 (2018) ¹⁶	1	Lymphedema, LLQ abdominal lympho-cutaneous fistulae; chylocolporrhea	<p>C-LAG: Lymphangiectasia; lymph connection into vaginal lumen.</p> <p>CT: Contrast enhancement /leakage into vagina.</p> <p>LAS: Increased pelvic/perineal accumulation, absent thoracic duct</p>	Lymphatic lipiodol embolization	Immediate cessation of chylocolporrhea; no serious procedural complications; 12 months without recurrence
Study 7 (2019) ⁸	7	Cardiac defects (n=6); chylothorax (n=6); ascites (n=3)	<p>C-LAG (n=7): Abnormal thoracic duct (n=7), pulmonary perfusion (n=6), peritoneal perfusion (n=1), left neck collaterals (n=1).</p> <p>MRL/dc-MRL (n=9): Pulmonary perfusion (n=6), abnormal thoracic duct (n=5), soft tissue edema (n=4), ascites (n=4), dermal</p>	<p>Lymphatic lipiodol embolization (n=4) or glue embolization (n=2)</p> <p>LVA (n=1)</p>	<p>Worsening effusions and death (n=2); improved or stable condition (n=4)</p> <p>Resolution of effusion; transferred to local hospital with continued diet modification and diuretics regimen</p>



			backflow (n=3)		
Study 8 (2020) ¹⁷	1	Cardiac defects; chylothorax (post-op I)	<p>ICG: Upper extremity lymphatics not visualized, unable to identify leakage site behind post-op chylothorax.</p> <p>dc-MRL: Thoracic duct dilation, central lymphatic leakage at T9 paravertebral region</p>	Cardiac Surgery I	Bilateral post-op chylothorax; 50-150mL/day continuous chest tube drainage
				Thoracic Duct Ligation (25 days post-op)	Decreased chest tube drainage to 10-15mL/day; Post-op intermittent fevers, elevated WBC, thrombocytopenia, septicemia
				Cardiac Surgery II (4 months post-op)	Severe ascites with 600-1500mL/day continuous drainage; dx of juvenile myelomonocytic leukemia; death due to bradycardic arrest (32 days post-op)
Study 9 (2021) ⁶	2*	<p>Cardiac defects (n=1); cryptorchidism (n=2); lymphedema (n=2); ascites (n=1); genital lymphorrhea (n=1); lymphocutaneous fistula (n=1)</p>	<p>CTL: Dilated thoracic duct, peri-aortic and mediastinal lymph vessels.</p> <p>MRL: Dilated thoracic duct, retro-peritoneal lymphangiectasia.</p> <p>LAS: Reduced lymph flow rate, left inguinal reflux</p>	Abdominal LVA (P1, 12-year follow-up)	Gradual onset new non-chylous leakage and scrotal edema
				Interventional lymphatic sclerosis (P1)	Discontinued due to lack of demonstrable communication; acute post-operative pelvic/abdominal hemorrhage requiring microcoil embolization of left superior gluteal artery



			to the scrotum; lower extremity lymphoceles		
			CXR: Prominent hilar vasculature, discrete left chylothorax, severe dextroscoliosis. LAS: Retroperitoneal/mediastinal vascular malformation	Inguinal LVA (P2, 20-year follow-up)	Long-term regression of lower extremity lymphedema from class II-III to a class 0-I, six episodes of erysipelas, chylothorax
<i>Study 10 (2021)</i> ⁹	1	Cardiac defects, Severe pulmonary insufficiency and decline over 2 years, chylothoraces, bronchial lymphangiectasia, lymphedema,	dc-MRL: Significant abdominal and pulmonary lymphangiectasias, abdominal ascites C-LAG: Increased pelvic and retroperitoneal lymphatic flow, complete occlusion of the thoracic duct at the level of the neck	Cervical LVA	Immediate: Pulmonary edema secondary to fluid overload requiring endotracheal intubation, extubated next day, discharged post-op day 9. 40-days: Repeat imaging encouraging for reduced lymphatic reflux findings 1-year: Better exercise tolerance, improved quality of life, return to baseline oxygen requirements



			Post-op dc-MRL: patent thoracic duct, significantly reduced pulmonary lymphangiectasias, near complete resolution of lymphedema		
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Table Legend:

CXR= Chest X-Ray; C-LAG = Conventional Oil-Contrast Lymphangiography; CT = Computerized Tomography; MRL = T2-Weighted Magnetic Resonance Lymphography; dc-MRL = Dynamic-Contrast (T1-Weighted) Magnetic Resonance Lymphography; LAS = Lymphoscintigraphy; ICG = Indocyanin Green Lymphography; LVA = Lympho-Venous Anastomosis

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