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OTHER ARTICLES

Bilateral Chylothorax Following Neck Dissection: A Systematic Review and Proposed Management Algorithm

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Abstract

Aims Bilateral chylothoraces are rare but potentially life-threatening complications of neck dissections (ND). The condition is generally treated with a combination of dietary, medical, procedural, and surgical approaches. The aim of this review is to highlight the management options currently utilized in clinical practice and propose a management algorithm for this condition.

Methods In accordance to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines; utilizing the Pubmed, EMBASE, and Web of Science databases, a systematic review of all available literature on bilateral chylothoraces was conducted. Primary outcomes measures included clinical presentations and type of neck dissection performed with interventions employed to manage the condition. Secondary outcome measures included the time to resolution alongside patient outcomes.

Results We identified 37 patients (female n = 27, male n = 10) who presented with bilateral chylothoraces within the years 1951–2018. The mean age was 51.4 ± 16.5 years within the age ranges of 17–78 years. Most common pathologies included papillary thyroid carcinoma (n = 16), squamous cell carcinoma (SCC) of the larynx (n = 3), supraglottic SCC (n = 3). Left sided ND was done in (n = 18); bilateral ND in (n = 17); central/left ND in (n = 2). Chylothorax was treated by surgery in n = 10, n = 5 of which performed lymph node embolization; and n = 5 used lymph node ligation. Resolution was found in all cases. Discharge times ranged from 2 to 40 days.

Conclusions This systematic review highlights the different management modalities in treating bilateral chylothoraces alongside providing a decision algorithm in treating the condition by suggesting diagnostic tools and management modalities to optimize patient care.

Keywords Bilateral chylothorax · Neck dissection · Thoracic duct · Surgical management · Octreotide

Introduction

Chylothorax is defined as the presence of chyle in the pleural space. It is an uncommon complication after neck dissection but has a significant morbidity and mortality rate [1]. Chyle leaks can be identified either during surgery or in the first few days following surgery by observing increased lymphatic fluid buildup in the drainage. To achieve proper management, the diagnosis should be done early as chyle leak can affect the healing process and lead to poor wound healing, electrolytes disturbances, and cardiopulmonary complications [2, 3].

Bilateral chylothoraces are an even rarer entity with incredibly limited reports in available literature, in which chyle infiltrates the pleural space bilaterally. Neck dissections are surgical procedures used to both diagnose and treat

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cancer in the head and neck region. In general, a neck dissection should be used to treat any disease with clinically positive nodes or advanced tumors in node negative disease [4].

Due to the rarity and limited information available on bilateral chylothoraces, we intend to provide further understanding of the condition by systematically reviewing the available literature and discussing the management, investigations, and treatment modalities of the condition alongside proposing a management algorithm.

Methods

A systematic search using the databases of PubMed, Embase and Web of Science was conducted, looking for all articles reporting cases of bilateral chylothoraces. The search terms included "bilateral chylothorax" and "chylothorax" and the review period was restricted from January 1, 1955, to June 1, 2023. Each abstract was screened for possible inclusion by two reviewers independently (S.H, J.H). Articles were only included if both reviewers independently determined that all inclusion criteria were met. If a consensus was not reached, a third author was consulted. Two authors performed data extraction (F.I, A.A).

Inclusion/Exclusion Criteria

Inclusion criteria included all levels of scientific evidence, any treatment option, human studies, both genders and any age group. The following criteria were used for exclusion: articles of unrelated diagnosis, articles available in abstract form only and non-English articles.

Intervention

Any treatment strategy for bilateral chylothoraces, including conservative, medical, surgical, and any other interventions.

Comparator/Control

No comparison or control group was required for inclusion in this review.

Primary Outcomes

Studies were required to report clinical presentations and the type of neck dissection done and the treatments and interventions used to manage the condition. Ideally, studies provided the length of stay in the hospital quantified by postoperative days spent as an inpatient.

Secondary Outcomes

We also extracted data on the duration it would take for the bilateral chylothoraces to resolve or significantly improve following treatment or intervention, alongside extracting data on the outcomes of the provided management. The data was extracted and then quantitatively and descriptively documented in Table 1.

Statistical Analysis

Highly heterogeneous results were anticipated secondary to significant variations in hospital protocols, treatments, and initial neck dissections done. Data pertaining to treatments and patients' responses to such were extracted. If a specific post-operative date of discharge was acquired, it was then extracted and summarized in Table 1. We were unable to conduct a meta-analysis due to the significant limitations of studies and the heterogeneity of the included studies in terms of presentations, unique hospital protocols, and treatments alongside limited sample size.

Risk of Bias Assessment

Studies of all different types (case reports, case series, cohort, case–control and interventional studies) were included. For this reason, no specific quality assessment tool was used. Data that is unclear or ambiguous or that did not satisfy the inclusion criteria were excluded from analysis.

Results

A total of 37 cases were found. The earliest report of chylothorax post-neck dissection was in 1951, while the latest was reported in 2018. A total of 5 cases were reported twice during 2007 and 2013. In terms of cases' characteristics, the mean age for all included participants was 51.4 ± 16.5 years. The youngest case was 17 years old while the oldest was 78 years. About 73.0% of cases were female (n = 27) while 27.0% were male (n = 10), as depicted in Table 1.

The most common sites of primary lesions were related to papillary thyroid carcinomas (43.2%). Other common sites included SCC of the larynx (8.1%), of the oral cavity (8.1%), and the supraglottis (8.1%).

Neck dissection was performed on the left side in 48.6% of cases, while 45.9% had bilateral neck dissections. Only 2 cases had a central and left neck dissection (5.4%). The majority of neck dissections were modified radical

Table 1 Table highlighting available cases of bilateral chylothoraces

Author(s)	Year	Age	Sex	Identified Lesions	Side of neck dissection	Extent of dissection	Chyle Detected Intraoperatively?	Resolved?	Diagnosis	Treatment/duration	Surgical intervention needed?	Outcome
Sharma et al	2018	41	Female	Thyroid papillary carcinoma	Left sided	Left central neck dissection	No	Yes	CXR showed BL pleural effusion POD 3 + Pleural fluid analysis showed a triglyceride level of 1996 mg/dL	BL pigtail insertion POD 3 + fat free diet	No	Resolution and discharged
Hayashibara et al	2016	48	Female	Thyroid papillary carcinoma	Left sided	Left cervical LN dissection	No	Yes	CXR POD 4	Bilateral thoracic cavity drainage + fat restricted diet + Octreotide POD 4	No	Resolution POD 9, discharged POD 20
Merki et al	2016	54	Male	Met. thyroid papillary carcinoma	Bilateral central and lateral ND on the left side	Bilateral central and lateral ND on the left side	No	Yes	Thoracic CT scan showed right side pulmonary + BL pleural effusions + RT side thoracocentesis (chylous fluid)	BL thoracic drainage and TPN was started for a total of 18 days	No	Resolution POD 20, discharged POD 24
Singh et al	2016	61	Female	Left lower alveolus well differentiated squamous cell carcinoma	Left sided	Left neck dissection LN level 1–4	Yes	Yes	CXR, BL pleural effusion POD 2 + diagnostic pleural tap (drained fluids sent for chylomicron that was elevated)	Pleurocentesis POD 2 + left sided chest tube (removed POD 5) + fat free through Ryles tube and high protein diet	No	Resolution and discharged POD 10
Matani et al	2015	62	Male	Squamous cell cancer of the larynx	Bilateral selective neck dissection	Bilateral selective neck dissection	Yes	Yes	CXR showed BL atelectasis + CT scan showed BL pleural effusions. Thoracentesis of the right chest (transudative effusions with triglyceride levels of 768 mg / dl. next day US confrimed the presence of BL chylothorax.)	Left chest tube + Octreotide + MCT + TPN	No	Resolution POD 13
Runge et al	2014	40	Female	Thyroid papillary carcinoma	Bilateral	Cervico-central and cervico-lateral lymphadenectomy	No	Yes	CT scan showed massive BL pleural effusions POD 2	Bilateral thoracic drainages + TPN & Octreotide (POD 2 started)	Thoracic duct ligation POD 4	Resolution POD 9, discharged POD 11
Parvinian et al	2013	54	Male	Laryngeal squamous cell carcinoma	Bilateral	Bilateral neck dissection	Yes	Yes	CT imaging of the chest revealed large BL pleural effusions with compressive atelectasis POD 3 + Diagnostic left thoracentesis (Aspirated fluids contained triglyceride levels of 200 mg/dl)	BL thoracentesis POD 3 + conservative (failed)	Yes/POD 5 surgical exploration failed to identify the source, TDE & intranodal lymphangiography POD 7, repeated after 11 days	Resolution POD 21 (Discharged in stable condition 4 days post-second TDE procedure)
Lizy et al	2013	48	Female	Papillary thyroid carcinoma	Left	Left side LN dissection	Yes (thoracic duct injury)	Yes	Synchronous BL Chylous leak POD 2	CCDT (chest closed drainage tubes) + TPN	No	Resolution POD 8

Table 1 (continued)

Author(s)	Year	Age	Sex	Identified Lesions	Side of neck dissection	Extent of dissection	Chyle Detected Intraoperatively?	Resolved?	Diagnosis	Treatment/duration	Surgical intervention needed?	Outcome
Lizy et al	2013	31	Female	Papillary thyroid carcinoma	Bilateral	Bilateral LN dissection	Yes	Yes	Synchronous BL chyle leak POD 3	CCDT + TPN	No	Resolution POD 10
Lizy et al	2013	40	Female	Papillary thyroid cacinoma	Bilateral	Bilateral LN dissection	Yes	Yes	Synchronous BL chyle leak POD 2	TPN	Yes POD 3 (Thoracic duct ligation and drainage tube reinsertion under local anasthesia in cervical region)	Resolution POD 19
Lizy et al	2013	65	Female	Papilary thyroid cacinoma	Central and left sided	LN dissection central and left	Yes	Yes	Synchronous BL chyle leak POD 8	CCDT + TPN	No	Resolution POD 12
Prabhu et al	2012	58	Male	Left-sided, oropharyngeal squamous cell carcinoma	Left sided	Left-sided modified radical neck dissection	No	Yes	CXR confirmed BL pleural effusions POD 3 + pleural tap revealed chylothorax	Aspirating the collection every day for a week, a fat-free diet, pressure dressings, and Octreotide for 14 days	No	Resolution
Tian et al	2012	40	Female	Thyroid papillary carcinoma	Bilateral	Bilateral lateral neck dissection	Injured and transfixed, but there was no intraoperative chyle leakage after transfixion	Yes	CXR showed large, BL pleural effusions POD 4 + diagnostic thoracentesis	Diagnostic thoracentesis + Bilateral closed drainage tubes were inserted POD 4 + TPN until POD 7	No	Left chest tube removed POD 11, right one on POD 19. Resolution POD 22
Tian et al	2012	31	Female	Thyroid papillary carcinoma	Bilateral	Bilateral lateral neck dissection	No	Yes	US findings confirmed BL moderate pleural effusion + diagnostic thoracentesis was performed on the right side POD 3 + a diagnostic thoracentesis was performed on the left side	Bilateral thoracentesis + drainage tube (R. side POD 3, L. side POD 4) + TPN POD 3	No	Resolution POD 10
Zhang et al	2012	78	Female	Supraglottic squamous cell carcinoma	Bilateral	Total laryngopharyngectomy + bilteral modified radial neck dissection	No	Yes	CXR BL pleural effusions + pulmonary edema POD 2 + fluid analysis revealed triglyceride levels of 283.4 mg/dl and were + ve for chylomicrons	BL pigtail thoracostomy tubes POD 3 + TPN for 3 days and MCT tube feedings	Yes/ POD 24 developed wound dehiscent (surgical exploration with thoracic duct ligation)	Resolution and discharged POD 40

Table 1 (continued)

Author(s)	Year	Age	Sex	Identified Lesions	Side of neck dissection	Extent of dissection	Chyle Detected Intraoperatively?	Resolved?	Diagnosis	Treatment/duration	Surgical intervention needed?	Outcome
Soodin et al	2010	65	Female	Nodular malignant melanoma, developed multiple left sided cervical lymph nodes	Left sided	Left sided modified radical neck dissection	Yes	Yes	CXR + Thoracic CT scan. BL pleural effusions POD 2	Left sided pigtail POD 2 + MCT	No	Resolution POD 10
Tallon-aguilar et al	2010	38	Female	Papillary thyroid carcinoma	Left central and cervicolateral LN dissection	Left central and cervicolateral LN dissection	No	Yes	Chest x-ray b/l pleural effusion POD 3 + left sided thoraceentesis	Left thoracic drain + TPN (failed)	Yes / Leakage at the thoracic duct at the level of brachiocephalic trunk with suturing and sealing with biological glue	Resolution
Han et al	2009	42	Female	Bilateral medullary thyroid cancer	Bilateral	Left modified radical and right modified neck dissection	Yes	Yes	CXR showed large, BL pleural effusion POD 8 + thoracentesis results were compatible with bilateral chylothoraces (triglyceride level 283 mg/dl)	BL thoracentesis + left sided chest tube insertion POD 8 + TPN	No	Resolution POD 13 and discharged
Khurana et al	2009	17	Female	Thyroid cancer	Bilateral	Bilateral modified neck dissection	No	Yes	CXR showed mediastinal widening & BL pleural effusions POD 1	BL chest drainage POD 1 + Octreotide 8 h later + TPN started on 4th day	Surgical exploration only POD 3	Resolution and discharged POD 12
Patel et al	2008	61	Female	Subglottic squamous cell carcinoma	Bilateral	Bilateral selective neck dissection	No	Yes	Fluid analysis showed triglyceride levels of 56 mg/dl	-	Thoracic duct embolization POD 2	Resolution
Tsukahara et al	2007	72	Female	Papillary adenocarcinoma of the thyroid	Left sided	Left modified radical neck dissection	No	Yes	CXR revealed BL pleural effusions POD 2 + BL thoracentesis	BL thoracentesis + conservative TPN for 7 days	No	Resolution POD 8
Tsukahara et al	2007	64	Male	Supraglottic carcinoma	Left sided	Left modified radical neck dissection	No	Yes	CXR, BL pleural effusions POD 4 + thoracentesis	Thoracentesis + BL thoracostomy tube + TPN > removed on the 12th day + Penrose drain was inserted POD 13	No	Resolution
Tsukahara et al	2007	76	Male	Tongue cancer	Bilateral	Bilateral modified radical neck dissection	No	Yes	CXR, BL pleural effusions POD 2	Left thoracentesis + TPN + BL thoracostomy tube for R + L thoracostomy tubes were removed on the 6th and 11th POD, respectively./ 12 POD	No	Resolution

Table 1 (continued)

Author(s)	Year	Age	Sex	Identified Lesions	Side of neck dissection	Extent of dissection	Chyle Detected Intraoperatively?	Resolved?	Diagnosis	Treatment/duration	Surgical intervention needed?	Outcome
Bae et al	2007	46	Female	Thyroid papillary carcinoma	Left sided	Left lateral neck node dissection	No	Yes	CXR and CT showed large, bilateral pleural effusions POD 7 + diagnostic pleural tap aspirated milky fluid, triglyceride level 459 mg/dl	Bilateral pigtail catheters were inserted POD 7 + TPN with total enteric rest was started and continued for 2 weeks	No	Resolution and discharged POD 22
Bae et al	2007	47	Female	Thyroid papillary carcinoma	Cervical dissection in central + left lateral part of neck	Cervical lymph node dissection in the central and left lateral part of the neck	No	Yes	Both CXR + CT showed bilateral pleural effusions POD 3 + a diagnostic pleural tap aspirated milky fluid with a triglyceride level of 959 mg/dl	Bilateral pigtail catheters were inserted POD 3 + peripheral parenteral nutrition and a low-fat diet. Continued for 9 POD	No	Resolution and discharged POD 9
Srikumar et al	2006	24	Female	Poorly differentiated nasopharyngeal carcinoma	Left sided	Left radical neck dissection	Yes	Yes	CXR revealed large, bilateral pleural effusions POD 5 + pleural taps were compatible with BL chylothoraces. Three days later, the CT scan of the neck and chest was performed due to persistent chyle leak	BL thoracentesis and chest drains were inserted POD 5/ Conservative (TPN) + Ocreortide for 2 weeks post re-exploration	Underwent re-exploration POD 8 (findings included an intact thoracic duct and a small collection of chyle in the posterior triangle of the neck. This was drained)	Resolution POD 14, discharged POD 23
Busquets et al	2004	70	Male	Left neck mass squamous cell carcinoma	Left sided	Left radical neck dissection	No	Yes	High output chyle leak through suction drainage (3.5 L in 16 h) + CXR + BL pleural tabs	Conservative enteral MCT + Somatostatin for 10 days after surgical intervention	Thoracic duct ligation 16 h post-op	Resolution
Kamasaki et al	2003	78	Female	Tongue cancer	Bilateral	Left radical and right modified neck dissection	No	Yes	CXR showed a massive pleural effusion POD 1 + CT scan confirmed the presence of large pleural effusion POD 5	Left thoracostomy tube POD 2 + RT sided thoracentesis POD 5 + TPN	No	Resolution POD 19
Al-Sebeih et al	2001	70	Male	Squamous cell cancer ofthe larynx	Bilateral	Total laryngectomy and bilateral modified neck dissection	Yes	Yes	Chest radiograph revealed extensive BL pleural effusion POD 3	Bilateral chest tubes were inserted POD3 + TPN, Somatostatin started POD 13	No	Resolution POD 20
Abdul Jabbar et al	1995	35	Female	Thyroid papillary carcinoma	Bilateral	Bilateral lymph node neck dissection	No	Yes	CXR showed large BL pleural effusions + diagnostic and therapeutic thoracentesis was performed	Bilateral thoracentesis POD 4	No	Resolution and discharged POD 10

Table 1 (continued)

Author(s)	Year	Age	Sex	Identified Lesions	Side of neck dissection	Extent of dissection	Chyle Detected Intraoperatively?	Resolved?	Diagnosis	Treatment/duration	Surgical intervention needed?	Outcome
B. Kent, III et al	1993	24	Female	Thyroid papillary carcinoma	Bilateral	Bilateral jugular, paratracheal, and upper mediastinal lymph node dissection & thymectomy	No	Yes	CXR revealed BL pleural effusions POD 3	Rt thoracentesis POD 3, B/L chest tube + TPN POD 7 (6 weeks of medical Tx > failed)	Thoracoscopic ligation of the thoracic duct after 6 weeks of failed medical Tx	Discharged 2 days post-surgical intervention
Pace-Balzan et al	1988	48	Male	Cervical LN, a poorly differentiated squamous cell carcinoma	Left sided	Left radical neck dissection	No	Yes	A CXR on POD 7 showed large BL pleural effusions + BL thoracocentesis	Conservative + BL thoracentesis POD 7	No	Resolution and discharged on POD 14
Richard et al	1985	44	Male	Left floor of mouth oral ulcer (squamous cell carcinoma)	Left sided	En bloc left radical neck dissection	Yes	Yes	CXR, BL pleural effusions POD 8 + thoracentesis of the left side showed a triglyceride level of 319 mg per dl & fat droplets that stained with Sudan III stain	Left sided thoracentesis POD 8 & high nitrogen solution with MCT	No	Resolution POD 17, discharged POD 35
HAR-EL et al	1985	34	Female	Papillary thyroid carcinoma	Left neck dissection	Low retroclavicular dissection	No	Yes	CXR showed BL pleural effusions POD 3 + POD 3 rt sided thoracentesis + a 2nd thoracocentesis + pleural biopsy POD 6	POD 3 right sided thoracentesis + low triglyceride diet for 5 days	No	Resolution and discharged POD 10
Saraceno et al	1981	58	Female	Left side floor of mouth (squamous cell carcinoma)	Left sided	Left sided radical neck dissection	Injured, laceration was sewn	Yes	CXR, BL pleural effusions POD 3 + the milky-white fluid, as suspected, proved to be chyle by Sudan red stain	Left sided thoracentesis POD 3, repeated BL thoracentesis after 8 h + BL thoracostomy after 48 h	No	Resolution and discharged
Coates et al	1976	78	Female	Supraglottic carcinoma	Left sided	Left neck dissection	Yes	Yes	Chest roentgenogram showed bilateral pleural effusion and basilar exudate POD 3 + left sided thoracentesis + RT sided thoracentesis POD 6	Thoracentesis + MCT (by tube POD 7)	No	Resolution (POD 12 NGT removed and MCT started by mouth)
Frazell et al	1951	61	Female	Skin of the left face	Left sided	Left sided radical neck dissection	No	Yes	Roentgen ray showed BL pleural effusions POD 5 + thoracocentesis	Wound was opened and evacuation done POD 4/ BL thoracocentesis POD 5 + TPN	No	Resolution POD 17, discharged POD 26

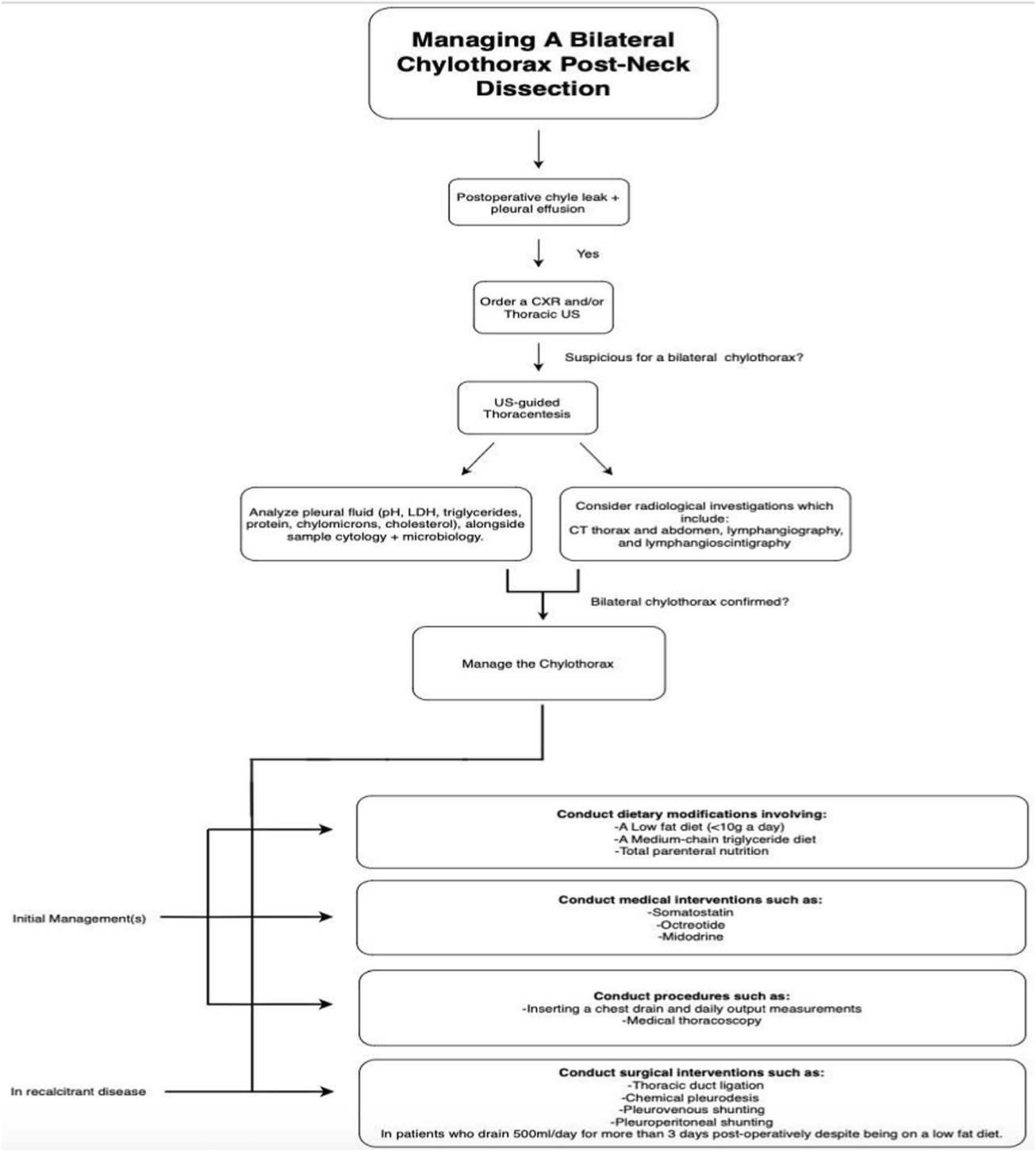

Fig. 1 Proposed algorithm in treating bilateral chylothoraces

dissections (27.0%). Among operated patients, only 40.5% had an intraoperative chyle leak detected and repaired.

Amongst the included cases, x-rays were the most common modality for diagnosis (54.1%). On the other hand, CT scans and CT in combination with x-rays were utilized in 8.1% and 16.2% of cases, respectively. Ultrasound diagnosis was utilized only once among the 37 included cases. With respect to treatment, Drainage followed by TPN was the most utilized treatment modality (37.8%).

Surgical treatment was utilized in 10 cases, 50% used lymph node embolization while the other 50% used lymph node ligation. Fortunately, irrespective of treatment, resolution was achieved in all cases. Time to discharge ranged from 2 to 40 days.

Discussion

Chylothoraces secondary to neck dissections occur either iatrogenically or due to inflammatory reactions secondary to direct leakage of the thoracic duct [5]. Another cause is secondary to the unintentional ligation of the thoracic duct, leading to the eventual rupturing of the thoracic duct [6]. When a patient who recently underwent neck dissection presents with a pleural effusion, a chylothorax should be suspected [7]. Many chylothoraces may initially be treated as cases of fluid overload [8]. This may prolong management until a thoracentesis is ordered; thus correctly diagnosing the condition [9], highlighting the importance of keeping the entity as a differential diagnosis [10].

Upon draining the milky fluid, investigations that aid in the diagnosis of the entity include Sudan III/IV staining, triglyceride quantification, and lipoprotein electrophoresis to detect any chylomicrons. Triglyceride levels of > 110 mg/dL strongly suggest the presence of chyle in the sample [11]. Serial chest radiographs should then be utilized to monitor the progression of the discovered entity [9].

Management of a chylothorax can be achieved via numerous methods ranging from dietary modifications to the use of various medications or the utilization of minimally invasive interventions and surgical ligation of the thoracic duct. Approaches to managing the condition include dietary modifications to correct electrolyte imbalances, chemical pleurodesis with the thoracostomy tubes, and thoracic duct ligation [12].

Dietary modifications in managing the condition include placing the patient on a low-fat diet (< 10 g a day), medium-chain triglyceride diet, and total parenteral nutrition in that sequence [12]. Medications such as Somatostatin, Octreotide, and Midodrine to prevent chyle formation have also been reported to be helpful in managing the entity [13, 14]. Alternative managements such as injected fibrin glue have limited supporting data [15]. Surgical techniques which include pleurovenous shunting, pleuroperitoneal shunting, and thoracic duct embolization also report successful outcomes [16, 17]. Most patients will benefit the most from a step-wise approach of conservative approaches to more invasive interventions if required [18]. Failing to manage the condition conservatively leads to the need for surgical interventions. Uchida et al. discovered that intervening in the early postoperative stage without pleurodesis yielded best results on patients who drained more than 500 ml/day despite being on a low fat diet; therefore surgical intervention must be early for cases of persistent chyle leakage [19].

The clinical guidelines that determine the mode and criteria for surgical interventions for prolonged chyle leakage is variable amongst institutions, with some suggesting that chest drains of over 1500 ml/day in adults or 100 ml/kg body weight in children or chyle leakages at rates of more than 1000 ml/day for 5 days, or chyle leaks that extend more than 2 weeks in duration, are appropriate criteria for surgical intervention. [20–23].

In the extracted data in Table 1, 27 patients were managed conservatively whilst 10 required surgical interventions. The majority of conservative interventions started off with dietary modifications and the insertion of thoracotomy tubes, with Octreotide being added as an adjuvant for some patients. Interventions were started immediately or within 24 h of discovering the condition via investigations. Most non-surgical patients were discharged within two weeks of management and all had eventual resolution of their symptoms. Of the surgical patients, a majority of the procedures involved thoracic duct ligation as the mainstay approach after re-exploration was done, with interventions generally occurring within 12–48 h after starting conservative managements. All patients achieved resolutions of their symptoms.

The limited sample size makes it difficult to highlight trends in the outcomes of patients based on the intervention used. This data demonstrates, however, the viability of all treatment methods if a reasonable step-wise approach is appropriately followed.

The aforementioned variability in management protocols would be aided by a management algorithm in treating bilateral chylothoraces which will be relevant to and apply to the management of unilateral chylothoraces, as demonstrated via a flow diagram in Fig. 1.

Conclusion

Bilateral chylothoraces post-neck dissections are an incredibly rare entity and have only been reported in less than 50 cases in available literature. In patients in which there is no obvious chyle leak, it is imperative to consider bilateral chylothorax as a differential in a patient with a postoperative pleural effusion that is non-responsive to diuresis, and to investigate for it accordingly.

Managing the condition involves a multidisciplinary approach that employs both medical and surgical investigations for post-operative patients. This is provided in a step-wise approach for patients that is provided in a multidisciplinary manner.

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Conflict of interest The authors have no conflicts of interests to declare.

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