

Non traumatic chylothorax: A rare complication of lung cancer

Travmatik olmayan şilotoraks: Akciğer kanserinin nadir bir komplikasyonu

¹Rasih Yazkan, ²Ayşegül Acar

¹Sanliurfa Education and Research Hospital, Department of Thoracic Surgery, Sanliurfa

²Sanliurfa Education and Research Hospital, Department of Chest Diseases, Sanliurfa

İletişim Adresi: Rasih YAZKAN, Şanlıurfa Eğitim ve Araştırma Hastanesi, Göğüs Cerrahisi Kliniği. e-mail: drrasihyazkan@yahoo.com, cep: 0 505 483 59 61

Abstract

Chylothorax is a relatively rare complication associated with thoracic surgery, the causes of chylothorax into four major categories: tumor, trauma, idiopathic, and miscellaneous. The prevalence after cardiothoracic surgery ranges 1–2 %, and mortality rate is approximately 50% without treatment. Most instances of chylothorax after a pulmonary resection have been reported to be diagnosed within 3 days after surgery because of oral intake starting. Management options of chylothorax includes conservative and surgical treatment, Conservative managements are include treatment of the underlying disease, repeated thoracenteses, a low-fat diet with a medium-chain triglyceride supplement, chest tube drainage and chemical pleurodesis, surgical interventions such as thoracic duct ligation or a pleuroperitoneal shunt are considered when the amount of chyle effused exceeds 500 ml per day or when chylothorax persists for more than two weeks.

We herein reported a case of non traumatic chylothorax complication of lung cancer. Non traumatic chylothorax is a rare complication of lung cancer and usually develops as the result of extrinsic compression or direct invasion of the thoracic duct by a tumor or as the result of obliteration of the lymphatics following radiation therapy.

Key words: chylothorax, complication, lung cancer

Özet

Şilotoraks toraks cerrahisi ile ilişkili nispeten nadir görülen bir komplikasyondur, etyolojisi tümör, travma, idiyomatik ve diğer çeşitli olmak üzere dört kategoriye ayrılır. Kardiyotorasik cerrahide görülme sıklığı %1-2'dir, tedavi edilmediği takdirde mortalite oranı %50'dir. Akciğer rezeksiyonu cerrahisi sonrası oral gıda alınımını takiben 3 gün içerisinde tanı konabilir. Şilotoraksın tedavi seçenekleri konservatif ve cerrahi yaklaşımı içermektedir. Konservatif tedavi altta yatan hastalığın tedavisi, tekrarlayan torasentezler, orta zincirli trigliserid içeren düşük yağ oranlı diyet, göğüs tüpü ile drenaj ve kimyasal plörodezi içerir, cerrahi yaklaşım ise günlük şilöz mayi drenajının 500 ml olması ve bu durumun 2 haftadan uzun sürmesi durumunda duktus torasikusun ligasyonu veya plöroperitoneal şant olarak yapılır.

Biz bu sunumda akciğer kanserinin komplikasyonu olan travmatik olmayan şilotoraks olgusunu sunduk, travmatik olmayan şilotoraks akciğer kanserinin nadir bir komplikasyonudur ve genellikle duktus torasikusa dışardan bası veya direk invazyon ile veya radyoterapi sonrası lenfatiklerin obliterasyonu sonrası oluşmaktadır.

Anahtar sözcükler: şilotoraks, komplikasyon, akciğer kanseri

Introduction

Chylothorax is a relatively rare complication associated with thoracic surgery. It is an accumulation of fluid, rich in triglycerides and characterized by the presence of chylomicrons in the pleural space. The causes of chylothorax into four major categories: tumor, trauma, idiopathic, and miscellaneous (1,2). It tends to occur in the early postoperative period for esophageal surgery, pulmonary resection with lymph nodes resection, and heart-lung transplantation. The prevalence of chylothorax after cardiothoracic surgery ranges from 1–2 %, and mortality rate is approximately 50% without treatment, it is usually right-sided (3). Non traumatic chylothorax usually develops as the result of extrinsic compression or direct invasion of the thoracic duct by a tumor or as the result of obliteration of the lymphatics following radiation therapy (1). Non-traumatic chylothorax is a rare complication of lung cancer (4), in this case report we want to report a rare complication of lung cancer.

Case report

A 60 year old man was hospitalized with chest pain, dyspnea, weight loss and cough, he was smoking 1 pack / day during 45 years, respiratory sounds were decreased on the right hemithorax in the physical examination. In his history he was diagnosed with pulmonary tuberculosis and taken antituberculosis treatment for 3 months. Since he didn't respond to the therapy, he consulted another institution to obtain a second opinion. He evaluated in our department with chest x-ray, computed tomography, fiberoptical bronchoscopy and biochemical indices. An abnormal shadow was recognized in the right upper lung field and right pleural effusion on chest x-ray and a paramediastinal mass with notch and spiculation 40 × 35 mm, right pleural effusion, paratracheal, precarinal and aorticopulmonary approximately 10 mm lymphadenopathy were detected on chest computed tomography (Figure 1). A mass was detected on right main bronchus and entering of upper lobe by fiberoptic bronchoscopy. Thoracentesis drained of white, milky fluid and then a tube thoracostomy was inserted (Figure 2), acute 1200 ml milky fluid was drained, following biochemical indices

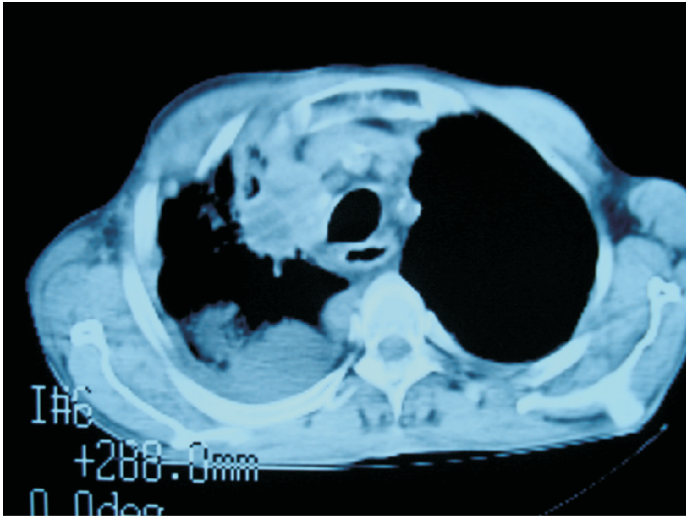


Figure 1: A paramediastinal mass with notch and spiculation 40 × 35 mm, right pleural effusion, paratracheal, precarinal and articulopulmonary approximately 10 mm lymphadenopathy were detected on chest computed tomography.

triglyceride 340 mg/dl; total cholesterol 68 mg/dl, with all these parameters we thought that this is a case of lung cancer with chylothorax and then the patient was initially treated conservatively with complete oral intake cessation and total parenteral nutrition, the daily volume of chylous discharge continued to be 150 ml to 250 ml and decrease significantly up to the 4th day, on 5th and 6th day there were no discharge from tube thoracostomy. A pathological examination revealed through fiberoptic bronchoscopy and squamous cell carcinoma were detected, bone metastasis were detected and he referred for oncological management to oncology department.

Discussion

The most consistent anatomic variation in the thoracic duct in the adult is found extending from the cisterna chyli, which is usually midline just anterior to the first or second lumbar vertebra. The course continues through the aortic hiatus into the posterior mediastinum to the right of midline between the aorta and the azygos vein. It usually crosses the midline between the sixth and fourth thoracic vertebrae behind the esophagus and enters the left posterior mediastinum. It continues behind the aortic arch just left of the esophagus and, more superiorly, behind the left subclavian artery (1). To know this anatomical path is important because of the determined of the management strategies. The causes of chylothorax into four major categories: tumor, trauma, idiopathic, and miscellaneous (1,2). The prevalence of chylothorax after cardiothoracic surgery ranges from 1–2 % (3). Chylothorax commonly occurs after an esophagectomy, the cause tends to be secondary to an injury to the thoracic duct. On the other hand after a pulmonary resection is relatively rare because the leak is usually from the main duct as a result of a lymph node dissection. Most instances of

chylothorax after a pulmonary resection have been reported to be diagnosed within 3 days after surgery because of oral intake starting (3). Most symptoms are dyspnea, chest pain and metabolic disorder. The association between chylothorax and malignancy may occur as follows firstly, direct invasion or extrinsic compression of the thoracic duct by the tumor may increase pressure in the thoracic duct and result in its rupture. Secondly, chylothorax has been identified as a complication of obstruction or high pressure in the superior vena cava (5). Lung cancer chylothorax rarely occurs in the absence of lung surgery. In recent years, there have been five case reports of lung cancer-induced chylothorax (5). Once the physician diagnoses chylothorax must carefully evaluate the setting in which it developed. Consequently, the first step in the management of chylothorax demands a review of the history and physical examination (1).

Management of chylothorax includes treatment of the underlying disease, repeated thoracenteses, a low-fat diet with a medium-chain triglyceride supplement, chest tube drainage and chemical pleurodesis, Surgical interventions such as thoracic duct ligation or a pleuroperitoneal shunt are considered when the amount of chyle effused exceeds 500 ml per day or when chylothorax persists for more than two weeks (5). In our case, a mass was present paramediastinal placement and we doubt post invasion laceration of the ductus thoracicus, this is a case of an inoperable lung cancer and chylothorax, we have first choice conservative treatment, and we have rapidly received the answer from this approach.

In conclusion, we herein reported a case of chylothorax, it is a rare complication of lung cancer, a chylothorax usually develops as the result of extrinsic compression or direct invasion of the thoracic duct by a tumor or as the result of obliteration of the lymphatics following radiation therapy. It can also be explained by an abdominal obstruction near the cisterna chyli due to lymphadenopathy secondary to lymphoma, carcinoma, or rarely infection. So non traumatic chylothorax is a rare complication of lung cancer.



Figure 2: Milk-like pleural fluid was drained.

Yazarlarla ilgili bildirilmesi gereken konular (Conflict of interest statement) : Yok (None)

References

- 1) Valentine V G, Raffin T A. The management of chylothorax, Chest 1992;102:586-91
- 2) Kaya Ş Ö, Yuncu G, Sevinç S. ve ark. Non Travmatik Şilotoraksılı Olgularımızda Deneyimlerimiz, İzmir Göğüs Hastanesi Dergisi, 2005;12(2):51-55
- 3) Suemitsu R, Ondo K, Fukuyama S, Ueda H. Late-Period-Onset Chylothorax after a Pulmonary Resection for Lung Cancer: A Case Report, Ann Thorac Cardiovasc Surg 2007;13 (5): 345-48
- 4) Iwasaki T, Mori M, Namba Y. et al. Case of lung cancer with chylothorax, Nihon Koryuki Gakkai Zasshi. 2006 ;44(10):706-10
- 5) Yen M Y, Ho C L. Chylothorax and Superior Vena Cava Syndrome as the Initial Presentation of Non-small Cell Lung Cancer, which was Successfully Resolved by Systemic Chemotherapy. J Med Sci 2009;29(2):85-88