Nonspecific Infectious Bilateral Chylothorax and Chyloabdomen with Symptoms of Acute Abdomen

Akut Batın Semptomlu Nonspesifik-İnfeksiyöz Bilateral Şilotoraks ve Şiloabdomen Olgusu

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Abstract

Co-existence of chylothorax and chyloabdomen is a rare clinical entity. Apart from surgery and extra-surgical trauma, malignancies, liver cirrhosis, nephrotic syndrome, thrombosis in the superior vena cava and acute pancreatitis play roles in the etiology. The case presented in this article was a 35-year-old woman, and the chronic infectious pathology in the cytology, plus the other supportive nonspecific infection parameters prompted us in establishing this diagnosis. Obstruction in the abdominal lymphatics leads to chylous ascites and chylothorax develops in due course. Similar to our case, the clinical entities of chylothorax and chyloabdomen of nonspecific infectious origin may co-exist in the same patient.

Key Words: Chylothorax, Chyloabdomen, Management

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Introduction

Chylothorax is a rare clinicopathological condition in thoracic surgery. It is characterized by the presence of fluid and chylomcrons rich in triglycerides in the pleural cavity. Tumors, trauma, idiopathic factors and other causes may be stated in the etiology [1]. It is primarily observed following thoracic and heart surgery with a rate of 0.5%-2.5% [2]. Apart from trauma, another leading cause of chylothorax is malignancy. Chylothorax related to extra-malignant conditions constitutes a very small percentage and in 15% of the cases, the actual cause cannot be clarified [3, 4].

Following confirmation of the diagnosis through biochemical examinations, treatment should be initiated promptly. Oral nutrition must be replaced with parenteral nutrition and the chylous fluid must be drained. In cases where drainage is persistent despite 2-4 weeks of treatment, the ductus thoracius may be ligated surgically. Additional surgical and medical approaches may also be utilized.

Our patient was examined in detail and diagnosed as a case of nonspecific-infectious chylothorax, based on our findings.

Case Report

A thirty-five-year-old woman presented to the general surgery department with the complaint of severe abdominal pain and she was hospitalized for evaluation and treatment with the diagnosis of acute abdomen. Abdominal ultrasonography and computerized tomography of the thorax and the abdomen that were performed prior to laparotomy revealed the presence of free fluid in the abdomen and bilateral pleu-
reral cavities (Figure 1, 2). The case was explored by a general surgeon. No signs were observed during the operation, apart from diffuse chylous fluid. She was referred to our department on the first postoperative day with bilateral pleurisy.

The patient was hospitalized in our clinic and chylous fluid was aspirated through bilateral pleural puncture. Analysis of the drained fluid revealed the following: Total protein: 3.6% gr, Total lipids: 3.7% gr, Cholesterol: 270.8 mg/dl, Triglycerides: 1354.11 mg/dl, Glucose: 69.21 mg/dl, Na: 116 mEq/L, K: 4.4 mEq/L, and Cl: 97 mEq/L. The percentage of lymphocytes in the fluid was over 80%. The diagnosis of chylothorax was confirmed upon microscopic determination of fat globules in the pleural fluid with Sudan III. Biochemical blood parameters were within normal limits. On initial presentation, the patient had dyspnea. Blood gas analysis revealed an oxygen saturation of 89%. The initial complete blood count showed normal values of hemoglobin, hematocrit and leucocytes, but a significant change was observed in favor of lymphopenia and neutrophilia.

Following thoracentesis and other examinations, bilateral tube thoracostomy was performed, in addition to central venous catheterization. Oral nutrition was stopped and total parenteral nutrition was commenced. Respiratory support was provided. Drainage continued for 2-3 days after tube thoracostomy, but on day 4, the drainage from right tube stopped completely. Drainage from the left thorax tube continued for an additional duration of 3-4 days and completely stopped on the 7. Day following tube thoracostomy. After evaluating the drainage and pulmonary expansion, the tubes were removed under control. On day 6 of hospitalization, the C-Reactive Protein (CRP) value was 54.9 and the sedimentation rate was 32 mm/h. The Tuberculin test results and all the tumor markers were within normal limits. Since the patient had occasional symptoms of hypoglycemia, evaluation of folate, vitamin B-12, thyroid markers, somatomedin, growth hormone and cortisol values were requested as a result of the endocrinological consultation; the results were regarded as normal. All the parameters requested by the infectious diseases consultant were within normal limits. There was no growth in the culture of pleural fluid; induration was measured as 4 mm in the Tuberculin test. There was no growth in the pleural fluid culture and the bacteria were negative. Cytological examination of the pleural fluid was reported as active chronic inflammation.

On day 8 of referral to our clinic, oral nutrition was re-initiated with a high-calorie diet, rich in proteins and medium chain triglycerides with low fat. Following oral nutrition, the clinical status of the patient improved with no signs of drainage and the patient was discharged from the hospital. The findings at the control visit 4 months after discharge was regarded as completely normal.

**Discussion**

Co-existence of chylothorax and chyloabdomen is a relatively rare condition. It develops by accumulation of chylous fluid in the pleural cavity and the abdomen, associated with obstruction of the ductus thoracicus or obliteration in one of its branches due to tumoral infiltration, inflammation or trauma [5]. Obstruction in the abdominal lymphatics related

![Figure 1. Bilateral pleural effusion (computed tomography).](image1)

![Figure 2. Abdominal effusion (computed tomography).](image2)
to any cause leads to chylous ascites and this condition causes chylothorax [6]. The most common causes of chylothorax are surgery and extra-surgical trauma [2]. Apart from trauma and malignancies (especially lymphoma), chylothorax and chyloabdomen may develop in filariasis, lymphangioliomyomatosis, amyloidosis, cirrhosis, thrombosis in the jugulo-subclavian region, pericarditis, nephrotic syndrome, sarcoidosis, tuberculosis and in the post-radiotherapy stage in malignancies [5].

In a series of 203 patients reported by Doerr et al., surgery or trauma was present in 101 patients, lymphoma and lymphatic disorders were detected in 89 patients, and idiopathic chylothorax was determined in 13 patients [7].

In the diagnosis of chylothorax and chyloabdomen, macroscopic appearance of chylous fluid is important. Diagnosis is confirmed based on biochemical examination of the fluid with triglycerides of >110 mg/dl and a ratio of cholesterol/triglycerides of <1, and detection of fat globules with Sudan III staining in the microscopic examination. The triglyceride value in our patient was 1354.11 mg/dl, the cholesterol value was 270.8 mg/dl, and the ratio of cholesterol/triglycerides was much lower than 1. Furthermore, lymphocyte domination was prominent (80% lymphocyte domination, 4050 cells/µL).

In conclusion, co-existence of bilateral chylothorax and chyloabdomen is occasionally seen, although it is a rare condition. Especially in cases where trauma, surgery and malignancy are eliminated, an infectious etiology should be considered. In cases with no response to treatment in two weeks, surgical treatment should not be disregarded due to increased in the risk of complications.

Conflict of interest statement: The authors declare that they have no conflict of interest to the publication of this article.

References


