

**Olgu Sunumu****Elevated Circulating Ca 15.3 Level In Hypersensitivity Pneumonitis****Hipersensitivite Pnömonisinde Yüksek Ca 15-3 Seviyesi****Ali Özdemir<sup>1</sup>, Ezgi Ersoy<sup>2</sup>, Can Sevinç<sup>3</sup>, Elvan Işık<sup>4</sup>***1. Fatih Sultan Mehmet Education and Research Hospital, Department of Internal Medicine, Istanbul, Türkiye**2. Kartal Dr. Lutfi Kırdar Education and Research Hospital, Department of Nephrology, Istanbul, Türkiye**3. Trakya University School of Medicine, Department of Nephrology, Edirne, Türkiye**4. Ege University School of Medicine, Department of Gastroenterology, Izmir, Türkiye***ABSTRACT**

*A 31-year-old man with hypersensitivity pneumonitis and elevated circulating Ca 15.3 level due to home furniture is reported. He was admitted with exertional dyspnea, nonproductive cough, weight loss, arthralgia, epigastric pain and fewer complaints. Pulmonary function test with spirometry showed a restrictive respiratory failure pattern. Arterial gas analysis showed normocapneic hypoxemia. He underwent extensive malignancy investigation due to very high Ca 15-3 level and suggestive malignancy symptoms but results were negative for malignancy. He was diagnosed as hypersensitivity pneumonitis with history, physical examination, biochemical and radiological findings. Elevated circulating Ca 15-3 level was returned to normal after the therapy for hypersensitivity pneumonitis. When interpreting tumor markers, clinicians should be aware that elevation of tumor markers may reflect the presence of nonmalignant diseases involving many organ systems.*

**Keywords:** hypersensitivity pneumonitis; tumor markers

**ÖZET**

*Bu yazıda salonuna yeni aldığı mobilya ile ilişkili hipersensitivite pnömonisi ve yüksek serum Ca 15-3 seviyesi olan 31 yaşında bir olgu sunuldu. Egzersiz dispnesi, nonproduktif öksürük, kilo kaybı, artralji, epigastrik ağrı ve ateş yakınmaları ile müracaat eden 31 yaşında erkek hastada öykü, fizik muayene, biyokimyasal ve radyolojik bulgularla hipersensitivite pnömonisi tanısı kondu. Çok yüksek Ca 15-3 seviyesi hipersensitivite pnömonisi tedavi edildikten sonra normale döndü. Tümör belirteçleri tümör tanısında rutin olarak kullanılmaz, fakat yüksek değerler saptandığında da yoğun malignite araştırmasına yol açar. Bu olgu tümör belirteçlerinin nonmalign hastalıklarda da yükselebildiğinin yeni bir örneğini oluşturur.*

**Anahtar Kelimeler:** hipersensitivite pnömonisi, tümör belirteçleri

**Contact Information****Corresponding Author:** Ali Özdemir, MD.**Address:** Necip Fazıl Mah. Gaffar Okkan Cadde No: 6 E-15 Ümraniye, Istanbul, Türkiye**Telephone:** +90 (216) 644 40 20**E-mail:** alemoz2004@yahoo.com**Submitted:** 18.02.2015**Accepted:** 10.05.2015**INTRODUCTION**

Ca 15-3 is a glycoprotein which is used as a tumor marker of breast cancer. Ca 15-3 is reported to be elevated in some endometrial, pulmonary, ovarian, pancreatic and gastrointestinal malignancies (1). Abnormal values had also been reported in some patients with hematological malignancies and sarcomas (1). Chronic hepatitis, cirrhosis, tuberculosis, sarkoidosis, pelvic inflammatory disease, systemic lupus erythematosus, systemic sclerosis with severe lung involvement, pregnancy, lactation and renal insufficiency are some nonmalignant pathological conditions that can cause an increased level of Ca 15-3 (1).

Hypersensitivity pneumonitis, also called extrinsic allergic alveolitis, is a complex syndrome of varying intensity, clinical presentation and natural history rather than a single uniform disease. Many laboratory abnormalities such as leukocytosis, neutrophilia, elevated erythrocyte sedimentation rate, increased levels of quantitative immunoglobulin and C-reactive protein are observed in many patients with hypersensitivity pneumonitis. Tumor markers are not routinely used for diagnosis of tumors, but elevated levels of tumor markers lead to intensive malignancy investigation. Here, we report a hypersensitivity pneumonitis case associated with a very high Ca 15-3 level.

**CASE**

A 31-year-old man was admitted to our hospital with exertional dyspnea, nonproductive cough and weight loss complaints. He also had arthralgia, epigastric pain and fever which was increased at nights for one year. Exertional dyspnea and cough complaints were began 6 months before admission. He had been diagnosed as bronchitis and hypertriglyceridemia and underwent nonspecific oral antibiotic, expectorant syrup and fenofibrate therapy by another doctor. The patient's history was significant with 14 pack years of cigarette smo-

king. On physical examination, he had a pale and dyspneic appearance. Auscultation findings of lungs were normal. Results of routine biochemical analysis, complete blood count and thyroid function tests were normal except the triglyceride value. CA 15.3 value was high with exceeding 10 fold of the normal range. Arterial gas analysis showed normocapneic arterial hypoxemia (Table 1).

**Table 1:** Laboratory parameters of the patient on admission and after the therapy.

	On admission	After the therapy	Normal range
Total cholesterol	164	170	110-200 mg/dl
Triglyceride	356	309	<150 mg/dl
Lactate dehydrogenase	542	646	210-480 U/l
CEA	3.11	3.19	<3 ng/ml
CA 125	17.7	21.8	<35 U/ml
CA 15.3	235.7	32.6	<17 U/ml
CA 19.9	6.6	11.4	<35 U/ml
Arterial blood gas pH	7.411	7.395	7.350-7.450
pO <sub>2</sub>	71.2	71.6	83-108 mmHg
pCO <sub>2</sub>	40.8	42.2	35-48 mmHg
Oxygen saturation	94.6	94.7	95-99 %
HCO <sub>3</sub>	25.4	25	22-29 mmol/L
Lactate	1.3	1.3	0.5-1.5 mmol/l
Carboxyhemoglobin	1.1	3.7	0.5-1.5 %

Chest x-ray and echocardiography showed no pathological sign. He underwent extensive malignancy investigation due to very high Ca 15-3 level, fever and weight loss. High resolution computed tomography (HRCT) showed diffuse ground-glass opacities, centriaciner and paraseptal emphysema areas in predominantly upper zone of the lungs. Also pulmonary function test showed a restrictive respiratory failure pattern. While his ongoing investigations, his respiratory symptoms spontaneously resolved without any medication. The patient was discharged with permission at the weekend. On Monday he returned to hospital with intensified respiratory symptoms. Lung imaging and pulmonary function test results together with the history pointed us to suspect of hypersensitivity

pneumonitis due to inhalation of an unidentified antigen probably existed at home. Thereafter, detailed history revealed that his complaints began after renewing the home furniture. The patient was administered oral corticosteroid therapy for 2 months and recommended to change his furniture. After this therapy, the patient showed symptomatic, clinical and radiologic improvements. Also Ca 15-3 level was found to be in normal range after the therapy.

## DISCUSSION

Our case was an example of nonmalignant conditions leading to elevation of Ca 15-3. In this case, elevated Ca 15-3 level is associated with hypersensitivity pneumonitis which is proved by negative malignancy investigations results and normalization of Ca 15-3 level after the therapy of hypersensitivity pneumonitis.

Tumor markers are not routinely used for diagnosis of tumors, but elevated levels of tumor markers lead to intensive investigation for new malignancy or recurrence of known malignancy. Increased tumor markers do not always imply disease recurrence. Ca 15-3 is a tumor marker that is usually used for monitoring breast carcinoma patients. On the other hand, it is also known that Ca 15-3 is elevated in some nonmalignant conditions such as chronic hepatitis, thyroid disorders, renal stones, tuberculosis, sarcoidosis, pelvic inflammatory disease, systemic lupus erythematosus, and systemic sclerosis with severe lung involvement, pregnancy, lactation and renal insufficiency (1-4). The nonmalignant pulmonary conditions previously reported to be cause of Ca 15-3 elevation are tuberculosis, sarcoidosis, acute pneumonia, interstitial lung disease, systemic sclerosis and dermatomyositis with severe lung involvement (5-7). Our case that has hypersensitivity pneumonitis represents other example of nonmalignant pulmonary disease leading to elevation of Ca 15-3.

Hypersensitivity pneumonitis is characterized by diffuse inflammation of lung parenchyma and airways in previously sensitized subjects. More than 300 different organic antigens have been associated with the development of hypersensitivity pneumonitis. There is significant variation in clinical course that can be caused by a variety of inhaled organic antigens in susceptible individuals. We do not know underlying mechanism of elevation of Ca 15-3 in hypersensitivity pneumonitis. We can infer that pulmonary involvement itself is more important than individual etiological factor in each disease leading to elevation of Ca 15-3.

## CONCLUSION

When interpreting tumor markers, clinicians should be aware that elevation of tumor markers may reflect the presence of a nonmalignant disease involving many organs.

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