

Chronic Dyspnea in Middle-Aged with Asthma Feature Presentation. Retrosternal Goiter: Case Series Tehran-Iran

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Abstract

Background: Nontoxic multinodular goiter is a common manifestation of goiter diseases and retrosternal goiter is associated with numerous clinical features.

The aim of the study was to assess the atypical dyspnea presentation of asthma disease among retrosternal goiter in middle-aged.

Material and Method: We have found four cases of asthma with non-classic goiter appearance in a one year.

Results: A total of four cases was presented as a case series study. Three of them were a woman and one man. The age ranged from 40-90 years. They were treated as bronchial asthma. Chest x-ray abnormality was detected in three of them. Spiral CT scan and sonography were accurately suggested the retrosternal goiters.

Conclusion: Iran with an etiologic basis Iodine deficiency in the diet of the general population has a high prevalence of goiter. High prevalence of shortness of breath and association with numerous disorders may cause mistakes in the diagnosis of the atypical dyspnea presenting with common diseases. Chest imaging is recommended in unusual clinical forms of dyspnea and especially in middle-aged women.

Keywords: Asthma, Retrosternal goiter, Dyspnea, Adults

Introduction

Dyspnea or shortness of breath is defined as “unpleasant breathing”[1]. Dyspnea is a subjective experience in which human beings interact with various physiological, psychological, social, and environmental factors. Human responses are different and based on physiological or behavioral manifestations [1]. Shortness of breath is a hallmark of respiratory and cardiovascular diseases [2]. Moreover, dyspnea may be associated symptom with clinical features of many diseases. Its prevalence in the general population is 25% and in the cases of referral to emergency departments up to 50% [3]. Differential diagnosis of dyspnea is established on the etiological evaluation [4]. A prerequisite for it is derived from a detailed history taking and physical examination, followed by pulmonary function testing and imaging [5].

Surveillance of the chronic dyspnea course and changes in its pattern has always raised the suspicion of onset new pathophysiology, which does not necessarily follow the common and well known standard etiologic factors. The atypical dyspnea presentation always causes diagnostic difficulties [6]. The thyroid gland is one of the anatomical organs next to the tracheal airway. Thyroid function can be effective on pulmonary functions through in both the overactive and underactive functions, the change in its volume and non-classical location [7].

The aim of the study was to assess the atypical dyspnea presentation of asthma disease among retrosternal goiter in middle-aged.

Material and Method

The study was case series. It finalized in Shahid Beheshti University of Medical Science (SBUMS), Logman Hakim general teaching hospital, Tehran- Iran, 2017.

Patients were enrolled from the chest clinic. They had been evaluated and treated for one year. All of them had received informed and written consent before the patient information is released.

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Results

One of the clinical features of goiter is retrosternal and substernal positions. The subjects mentioned were four cases of asthma disease. They came to the pulmonary clinic with chronic breathlessness. They were controlled as bronchial asthma for a long time. Clinical examination has been clear. Chest radiography was obtained from them and suggested abnormal pictures in the mediastinum. CT scan confirmed the retrosternal goiter. Dyspnea was improved in three cases by surgery.

We introduce four cases of the asthma feature dyspnea. Chest Imaging was shown in (Figures 1, 2A, 2B and 3). Pre and post-surgical spirometry of retrosternal goiter presents in (Figures 4A and 4B.)

Case 1: A 90 years old woman complained of the history of dyspnea since 6 months ago. Spirometry data recorded FEV1: prebronchodilator 910 cc (64%), FEV1 :postbronchodilator 1050 cc (73%) and FEV1/VC (69%). The Chest x-ray was associated with the upper part of mediastinal widening. Spiral CT scan of the thorax revealed retrosternal goiter with a pressure effect on the

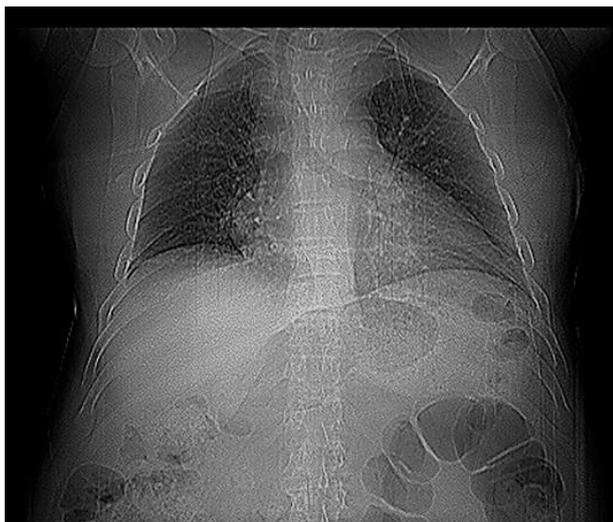


Figure 1: Chest radiography of retrosternal goiter case with upper mediastinal widening

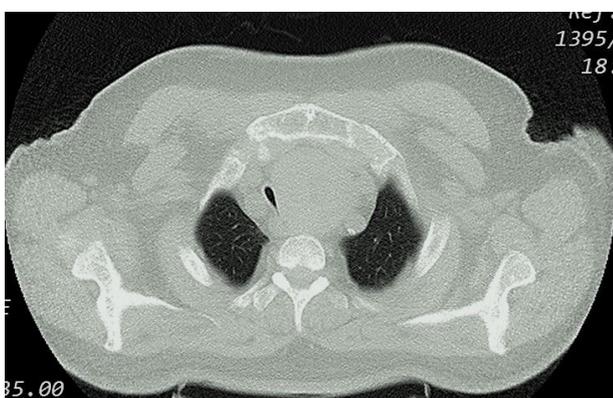


Figure 2A: Chest CT scan of the retrosternal goiter with dyspnea (Pulmonary view)



Figure 2B: Chest CT scan of the retrosternal goiter with dyspnea (Mediastinal view)



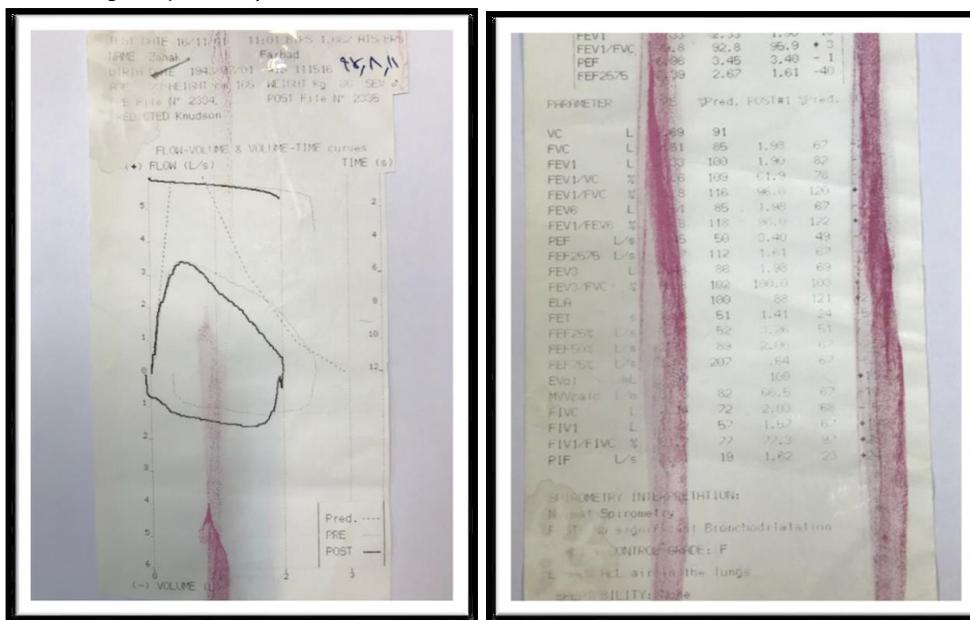
Figure 3: Chest CT scan of retrosternal goiter with dyspnea, coronal image.

left lobe of the thyroid on the left anterolateral side of the trachea. Thyroid surgery was done and the macroscopic pathology feature was (left lobe 6/4/3 cm, right lobe 5/4/1.5 cm, and isthmus 3/1.5 cm). The microscopic pathology was documented multinodular goiter.

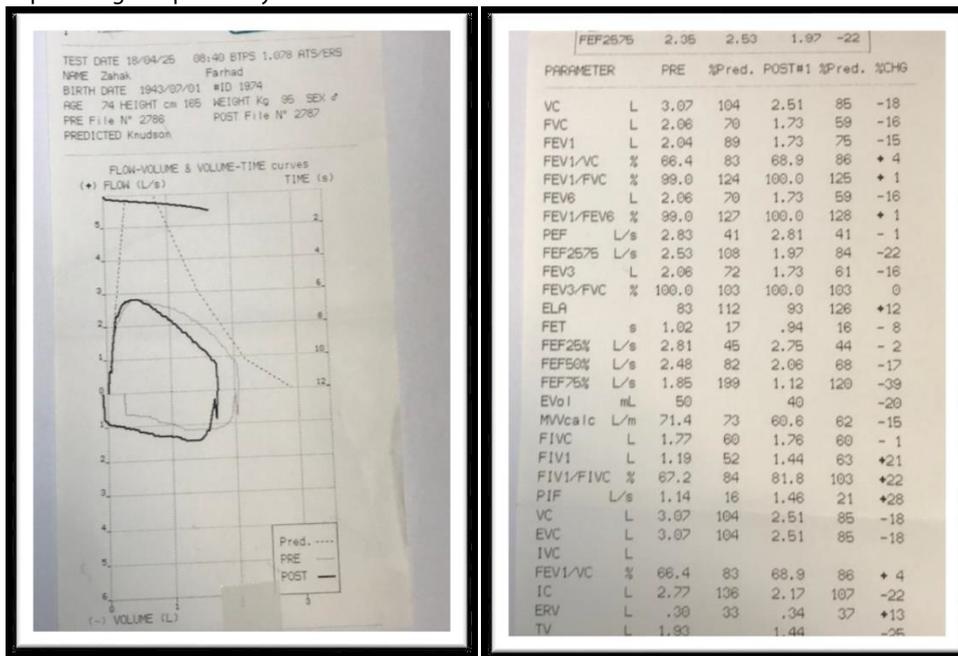
Case 2: A 57 years old obese woman had a history of dyspnea from several months ago with a short neck. Spirometry scop was FEV1 pre-bronchodilator (1650 cc), FEV1post bronchodilator (1780 cc) and FEV1/VC (78%). Chest x-ray was an abnormal picture. Spiral CT scan of the thorax was presented the increased size of both thyroid lobes, especially in the right lobe. Thyroid sonography was discovered right thyroid lobe: 43.6/31.5/24.7mm and left lobe: 47.4 /17/17 mm with multiple hetero and isoecho nodules in both lobes and isthmus of the thyroid. Thyroid surgery was done and the macroscopic pathology was multinodular goiter (left lobe 5/3/2.5cm, right lobe 5/3/1.5 cm and isthmus 3.5/2/2cm). The microscopic pathology revealed hyperplastic thyroid nodules.

Case 3: A 47 years old woman had a history of dyspnea from 4 months ago chest x-ray was abnormal. Spirometry parameters

A: Pre-surgical spirometry



B: post-surgical spirometry



Figures 4: pre and post- surgical spirometry of retrosternal goiter.

revealed FEV1 prebronchodilator: 1630 cc (72%), FEV1post bronchodilator 1460 cc (64%). Sonography showed multinodular goiters and spiral CT scan was documented the position and extension of the thyroid tissue.

Case 4: A 78 years old man complained from nine months ago dyspnea, a chest x-ray was normal. Thyroid sonography was larger than normal, right lobe size 55/36/37mm and left lobe 57/33/49 mm. Spiral CT scan of thorax disclosed that the thyroid was larger than normal with retrosternal extension.

Discussion

Our patients had been referred to the chest clinic with to have a long history of asthma disease and lacked clinical findings from the compression of the thyroid tissue on adjacent anatomical regions. Physical examinations were not indicated a mass in the neck.

The prevalence of goiter has been reported in 15% of the general population [8], and in Iran has 60% outbreak [9]. The most common type of thyroid diseases is nontoxic multinodular goiter and etiology

in most cases results in iodine deficiency .[10]The freedom of thyroid enlargement can be limited to the cervical or extended to mediastinal space as substernal or retrosterna .[11]The retrosternal goiter is defined as thyroid tissue release under the thoracic outlet. Its prevalence is closely related to the endemic goiter frequency [12]. Its rate is between 2.5%- 20% of cases of thyroidectomy and it has been reported in women more than males. The clinical manifestations of retroperitoneal goiter often appear due to the increased volume of the thyroid tissue or compression effect on the adjacent anatomical structures as tracheal airway, inferior vena cava, and esophagus. The prevalence of shortness of breath just symptom of goiter tissue pressure was 46% (13). The mimicking of asthma symptoms in patients with retrosternal goiter is very rare and in only a few papers were reported as a case [13-15].

The outcome of cases including as follows. One of the cases died due to pulmonary embolism and three cases were performed during a surgical operation. Subjective responses and post-surgical spirometry disclosed dyspnea improvement. Spirometry loop was not clearly changed. it may be due to post-surgical tracheomalacia.

Conclusion

Iran with an etiologic basis Iodine deficiency in the diet of the general population has a high prevalence of goiter. High prevalence of shortness of breath and association with numerous disorders may cause mistakes in the diagnosis of the atypical dyspnea presenting with common diseases. Chest imaging is recommended in unusual clinical forms of dyspnea and especially in middle-aged women.

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Conflict of Interests

The author has no conflicts of interest.

Author's Contribution

Maryam Moin Azad Tehrani has performed phases of conception and data collection.

Khosrow Agin was responsible for interpretation and analysis data, drafting the article and finally approved of the study.

Consent

Consent was obtained.

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