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Letter to the Editor

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A case of byssinosis in a yarn factory foreman: an occupational lung disease forgotten over time

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Dear Editor,

I am writing this letter to discuss the diagnosis of byssinosis that occurred in a worker who was producing yarn from raw cotton. Byssinosis is a nonspecific occupational respiratory disease that occurs in textile workers exposed to cotton and cotton products.[1] It is known as "monday morning fever" and is characterized by an increase in symptoms during the first days of the work period.[2] There are non-specific findings on the chest film; air trapping is a common radiological finding on tomography. Increased bronchial wall thickness and rarely nodular opacities are also among the radiological findings.[3] The case is 38 years old and has been working in a yarn factory in Adana province for 8 years. He is a wick operator and works as a foreman in the unit where yarn is produced from cotton wool. In the work environment, he was exposed to dust from cotton raw materials and cotton varieties such as polyester, viscose, acrylic, and carded nylon. He stated in his anamnesis that he did not use personal protective equipment and that he had no pathology related to the lungs in his pre-employment examination. Although shortness of breath was constant, it has increased in the last 6 months. In addition to shortness of breath, there was a complaint of phlegm. He occasionally had a cough. He was referred to our clinic after pathology was observed in respiratory function tests during control examinations. The patient had been diagnosed with asthma at an external facility and was using inhaled medication. The inhaler medication did not alleviate her complaints. There was no history of additional disease. He quit smoking 3 months ago and had been smoking half a pack of cigarettes a day for 14 years. During the respiratory examination, both hemithoraxes participated equally in respiration, and the respiratory sounds were deep. Saturation measured from fingertip on room air was 94%. There was no reversibility in the pulmonary function test (PFT). Forced expiratory volume in 1 second (FEV1) was 55% (2.15 litres), forced vital capacity (FVC) was 57% (2.66 litres), and the rate of FEV1 to FVC was 81. In the thoracic tomography, remnant thymus tissue and less than 1 cm of lymph nodes in the mediastinum were seen. The heart dimensions were normal. The mosaic attenuation patterns were reported at the basal level of both lower lung lobes, more pronounced on the left. A ground-glass nodule with a diameter of 8 mm was observed in the posterior upper lobe of the right lung (**Figure**). Based on work history, clinical, radiological, and spirometric criteria, a diagnosis of byssinosis, an occupational lung disease, was made. Steroid treatment was not given because the ground glass areas were not visible. Legal procedures were carried out, disease notification was made, and recommendations were made to avoid exposure to cotton dust. In the control examination one month later, symptomatic improvement was observed. PFT repeated, and similar values were seen to the first PFT [FEV1: 57% (2.21 litres); FVC: 60% (2.79 litres); FEV1/FVC%: 79]. Late reversibility was accepted as a negative result. A pulmonary nodule was taken under follow-up.

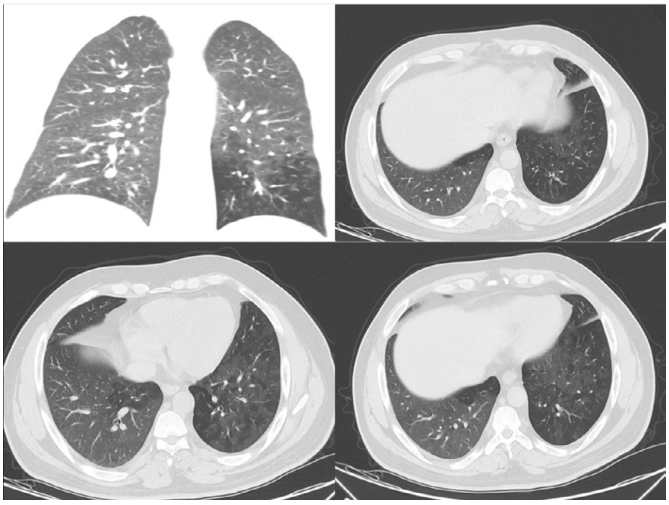

Figure. The tomography findings of the byssinosis case in four different sections

In Turkiye, occupational diseases are illnesses that are legally required to be reported. No byssinosis cases have been reported in the publicly available data of the Social Insurance Institution since 2012. It is a debatable issue whether there are really no cases of byssinosis, whether there are cases but they are not reported, or whether the reported cases are not included in the

data because they do not meet the compensation criteria of the Social Insurance Institution. Tissue sampling is an important step in the diagnosis of interstitial lung diseases.[4] There are no clear pathological features of byssinosis yet defined in biopsy materials. Some sources talk about increased size of mucous glands, mild muscle hypertrophy in the bronchi, and neutrophils gathering in groups; none of these terms are specifically used to describe byssinosis. There have not been enough studies to define bronchial biopsy or bronchoalveolar lavage (BAL) samples for the diagnosis of byssinosis.[1] For these reasons, the patient did not undergo any interventional procedures. The disease most frequently confused in differential diagnosis is occupational asthma. Mosaic perfusion areas can be seen in asthma cases. However, in our case, mosaic perfusion areas were located in a much larger area than expected in asthma. Due to the clinical presence of asthma symptoms and worsening of complaints at work, cases can often be evaluated as asthma. The most important difference with asthma is that in asthma, symptoms occur progressively on all days of the week, while in byssinosis, the most severe complaints are on the first working day, and then the complaints gradually decrease. However, in advanced cases of byssinosis, patients may experience persistent symptoms as they spread throughout the week.[3] Our case fits into the chronic, severe effect (FEV1 less than 60% of predicted value) category of byssinosis, according to the most recent classification by the World Health Organization.[5] He did not have increasing complaints in the first days of the week and was constantly describing symptoms. Severe respiratory disease, characterized by persistent airway obstruction and widespread air trapping, has caused the complaints to lose their temporal character. The absence of early and late reversibilities renders PEF monitoring meaningless. In conclusion, as with most occupational respiratory diseases, the diagnosis of byssinosis cannot be made histopathologically but is rather complex and is based on clinical and radiological findings and work history. This letter to the editor was written because byssinosis is a disease that has not been reported for the last 12 years in Turkiye.

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All of the author declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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