

Interstitial Lung Disease in A 19 Years Old Male Related to Intravenous Heroin Addiction: Case Report

19 Yaşında Erkek Hastada İntravenöz Eroin Kullanımı ile İlişkili İnterstisyel Akciğer Hastalığı

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ABSTRACT Inhaled or intravenous (IV) abuse of illicit drugs is a common health problem and has acute-chronic pulmonary complications depending on the administration route. IV administration may result many side effects depending on to drug's pharmacodynamics or contamination. A variety of radiological changes are predictable for pulmonary complications. Interstitial lung disease (ILD) is a rare manifestation of heroin addiction due to especially talcosis. Our patient had history of IV heroin usage for 5 years. His computed thorax tomography (CTT) revealed bibasiller interstitial changes. Other common reasons that can lead to this condition were excluded and ILD was dedicated to heroin addiction. Further investigation couldn't be done because of patient's refusal. Particularly in a young patient with ILD findings on CTT drug abuse should be remembered. We aim to report a young boy with interstitial lung disease thought to be about IV heroin injection.

Key Words: Lung diseases, interstitial; substance-related disorders; heroin

ÖZET Yasa dışı ilaç kullanımı yaygın bir halk sağlığı problemi olmasının yanı sıra uygulanma şekline bağlı olarak [inhalasyon ya da intravenöz (IV)] pulmoner komplikasyonlara yol açabilmektedir. İntravenöz kullanım sırasında hijyenik olmayan koşullar ve madde farmakodinamiğine bağlı olarak yan etkiler gelişebilmektedir. Bu komplikasyonlar çeşitli radyolojik görünümler ile karşımıza çıkmakta olup interstisyel akciğer hastalığı (İAH) gelişimi ise talk maddesine bağlı gelişen komplikasyonlardan biridir. Özellikle genç bir yetişkinde bilgisayarlı toraks tomografisinde (BTT) İAH bulguları saptandığında bilinen nedenler ekarte edildikten sonra madde kullanımı etiyolojide akla gelmelidir. Beş yıllık IV eroin kullanım öyküsü olup BTT'de İAH bulguları saptanan 19 yaşındaki bir erkek hastayı bu anlamda sunmayı amaçladık.

Anahtar Kelimeler: Akciğer hastalıkları, interstisyel; madde kullanımına bağlı bozukluklar; eroin

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Interstitial lung disease (ILD) has a wide, complicated spectrum and has a quite variety of reasons. Drugs are one part of etiology however illicit drug usage is elusive. Use of heroin is wide spreading and it is available at low prices. Depending on the route of administration, complications and onset time of presenting symptoms are alters between patients.

Pulmonary complications related to injected drugs are infection, non-cardiogenic pulmonary edema, emphysema, interstitial pneumonia and fibrosis, bronchiectasis, pneumothorax, talcosis, bronchiolitis obliterans organizing pneumonia (BOOP) and pulmonary vascular disease.^{1,2}

ILD is a chronic complication occurring as an inflammatory response to talc. Although cocaine is the most susceptible agent, IV heroin is the other frequent reason. Granulomas, giant cells, focal fibrosis and angio-thrombosis are expected histopathological changes.

Nodule, consolidation, ground glass opacity, emphysema and fibrosis are main radiological findings on computed thorax tomography.^{1,3}

CASE REPORT

A 19 years old male smoker with a history of use of IV heroin for five years was admitted to emergency with dyspnea and chest pain. He was pale and had tachypnea. His medical history wasn't significant for any chronic illness.

On physical examination there were fine middle crackles on basal of both lungs. Heart rate was 120 beats per minute and body temperature was 37.8 C° and his oxygen saturation was in normal ranges with pulse oximetry. He had scars on his skin near vein traces on arms even on his legs so it was difficult to have an IV route for treatments.

Laboratory tests revealed leukocytosis 17.9/uL with 92% neutrophil, increased C-reactive protein (CRP) 7.4 mg/dl. HbsAg and Anti-HIV were non-

reactive. His sputum was negative for acid fast bacilli. Immunological parameters were in normal ranges.

On his chest radiography both costo-diaphragmatic sinuses were irregular and there were linear atelectasis (Figure 1A). CTT demonstrated bilateral interstitial septal thickening on basal segments with ground glass opacities accompanied with focal bronchiectasis and scattered milimetric nodular opacities (Figure 1B-D).

Empiric antibiotic, bronchodilator, systemic steroid and antipyretic treatment was given. But patient didn't allow a further investigation and left from hospital interrupting the treatment.

Although histopathological examination was needed these radiological findings were thought to be the result of ILD related to chronic heroin use. Also due to increased white blood cells and existence of ground glass opacities he was thought to have concomitant lower respiratory tract infection.

DISCUSSION

Numerous pulmonary complications of IV drug abuse can often in acute or chronic period. Pulmonary infection, septic embolization, non-cardiogenic pulmonary edema (NCPE) and fatal

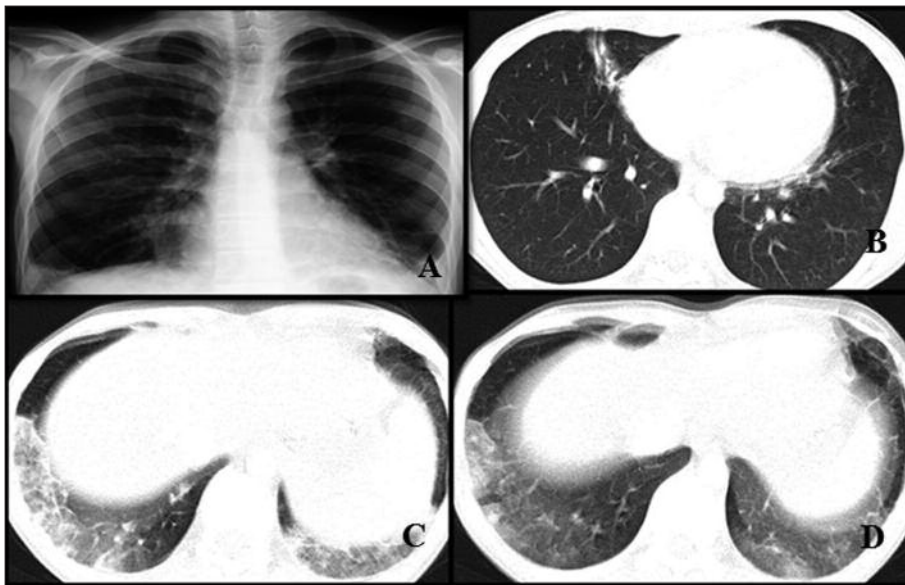


FIGURE 1: A) Chest X-ray reveals bilaterally irregularity on cost diaphragmatic sinuses and linear atelectasis. B-D) Bilateral interstitial septal thickening on basal segments with ground glass opacities accompanied with focal bronchiectasis and scattered milimetric nodular opacities on computed thorax tomography.

asthma are foreign body granulomatosis, bronchiectasis and interstitial changes.¹ Infection, NCPE, asthma attack and septic embolization often occur acutely. But in chronic uses some interstitial changes evolves like bronchiectasis or fibrosis due to insoluble substances like cellulose, talc or starch and non-sterile conditions also contribute.^{3,4} Substance abusers pulverize tablets intended for oral use, after dissolving in water, inject them intravenously. Talc (*hydrous magnesium silicate*) is most commonly used filler in heroin tablets. Foreign body granulomatosis occurs due to micro embolism caused by insoluble fillers and ILD, bronchiectasis, pulmonary hypertension and micro nodules on CTT may develop if this process severe.^{5,6} Similar to our patient these chronic changes have lower lobe predominance.⁷ On CTT findings there were ground glass areas accompanying with ILD and his inflammatory markers was high. As mentioned above frequency of seconder pulmonary infections rises in drug abuser so he had been treated with empiric antibiotics.

Furthermore pulmonary infection is the other frequent reason following NCPE and fatal asthma attack for requiring hospital admission.

For certain diagnosis lung biopsy is essential showing interstitial lymphoplasmacellular inflammation, fibrosis occasionally needle-shaped talc particles and foreign body granulomas.⁶ But like our patients it's difficult to convince to stay in hospital. We couldn't find the opportunity to make the necessary examinations for differential diagnosis. Above all remembering drug abuse as a differential diagnosis and inquiring patient's habits are important.

Most important in the treatment is cessation of drug use. There are some studies about benefits of prednisolone but dose and duration are still unclear.⁷ We have administrated 40 mg prednisolone intravenously for his bronchospasm and he responded well.

Eventually, when ILD is detected in a young patient after exclusion of other common cause's drug abuse should be remembered.

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