

Massive Hemoptysis due to Isotretinoin in a Young Man

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Abstract

The patient is a young man with no previous history of respiratory diseases who was given 80 mg of Accutane for acne on the face, followed by a massive hemoptysis one day prior to presentation. Chest CT scan was normal and bronchoscopy showed evidence of bleeding in the lower respiratory tract. Patient's laboratory exams were all normal and after discontinuation of the drug, bleeding stopped and never recurred.

Keywords: Hemoptysis, Humans, Isotretinoin

Introduction

Massive hemoptysis is defined as blood expectoration of more than 100 to 600 *ml* within 24 hours from the lower respiratory system. The first step for dealing with such patients is to correct their position, maintain the airway, ensure adequate gas exchange, control cardiovascular condition, and finally control bleeding. The origin of bleeding can be checked during or after control of bleeding. The proper and definitive treatment of the disease is based on the exact determination of the cause of the bleeding ^{1,2}.

Causes of massive hemoptysis

Before checking the origin of bleeding in the lower respiratory tract, we must rule out the causes of bleeding from non-pulmonary origins such as upper airways or gastrointestinal tract. It is believed that tuberculosis, bronchiectasis, and lung abscesses consist 90% of the main causes of massive hemoptysis. Remaining causes include other pulmonary infections, bronchogenic carcinoma, bronchitis, pulmonary immunological diseases, chemotherapy, bone marrow transplantation, and cardiovascular disease ².

Vasculitis can also affect the pulmonary vasculature. Etiologies of vasculitis include immunologic syndromes, infections, and drugs. The relationship between drug therapies and progression of cutaneous vasculitis has been observed to be associated with various therapeutic factors. Between 10-20% of skin reactions are related to medications, however systemic presentations are less common in these cases. The interval between the first administration of the drug and the onset of manifestations varies between patients ³.

Case introduction

The patient was an 18 year old non-smoker male who had developed hemoptysis two days before the first visit. He was, with a high blood expectoration rate of 200 *ml* per 24 hours. He had no fever, chills, respiratory distress or history of smoking. His medical history showed usage of Accutane for acne 2 months before the first visit. Examinations and high resolution chest CT scans were normal. No abnormality was observed in his laboratory

tests and results of coagulation tests were all normal. Bronchoscopy was performed that depicted evidence of bilateral pulmonary hemorrhage in the airways of all pulmonary segments. Patient was suffering from seizure after bronchoscopy, which was controlled by midazolam and he was then sent to the ward for further investigations. In the course of admission, serological tests were carried for rheumatologic diseases that were not remarkable. Due to not detecting a specific cause for hemoptysis, the initial medication was discontinued, which led to complete cessation of the symptoms with no recurrence. Patient's brain CT scan was reported normal and EEG had no finding compatible with any kind of seizure. By discontinuation of acne drug, patient's seizure never recurred and after a 12-month follow up, he was still asymptomatic.

Discussion

Accutane (Isotretinoin) is a compound containing vitamin A which is used to treat and/or prevent acne. The common side effects of Accutane are dryness of skin, mouth, lips, eyes, and nose; and also itching, rashes, cracks in the corner of the mouth, cracking or scaling of the skin, conjunctivitis, joint ache, back pain, dizziness and restlessness ⁴. Accutane is very harmful to the fetus and should therefore be avoided during pregnancy. Pulmonary side effects of Tretinoin have been rarely reported; however, cases such as bronchial spasm followed by exercise and/or asthmatic symptoms after the use of Accutane have been discussed in current literature. It has been observed that FEF25-75% could drop to about 0.5 *liters*. In another study, it was found that treatment with Accutane caused eosinophilic pleural effusion in patients with scleroderma, which also leads to a decrease in pulmonary volumes. Other complications such as pulmonary fibrosis, pneumothorax, pulmonary granulomas, loss of pulmonary function, and dried mucous of airways have been mentioned in other reports. Isotretinoin was also the main suspect of causing vasculitis in some other studies, which involved lungs, nasal mucous membranes, muscles and ears. Previous studies showed that lung com-

plications could include hemoptysis, wheezing, coughing, fever, shortness of breath, pleuretic chest pain, and infiltration in chest X-ray⁵⁻¹⁰. In this particular patient, we suggest that Isotreti-

noin probably caused vasculitis (pulmonary capillaritis) that was associated with hemoptysis and seizure, and both symptoms never recurred after discontinuation of Isotretinoin.

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