



## Case report

# Minocycline induced lupus with yellow colored chylous exudative pleural effusion



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## ABSTRACT

Ninety years old male was admitted to hospital due to breathlessness. The prominent findings were extensive blue-grey skin pigmentation and large left chylothorax. Drug induced lupus was diagnosed due to either minocycline chronic treatment or no alternative illness to explain his sub-acute disease. Minocycline therapy was stopped with gradual improvement of pleural effusion and skin discoloration. This case is the first presentation of minocycline induced lupus with chylothorax.

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## 1. Introduction

Minocycline is a member of tetracycline family of antibiotics in widespread use for the treatment of acne vulgaris. It is also used as a disease-modifying anti-rheumatic drug in the treatment of rheumatoid arthritis [1]. Minocycline may also provide good treatment results in select patients with localized or generalized bullous pemphigoid [2].

The drug is generally well tolerated and the most common adverse drug reactions are photosensitivity and esophagitis. Minocycline can cause a variety of pulmonary adverse effects, most notably organizing pneumonia and pulmonary infiltrates with eosinophilia [3]. Rarely, immune-mediated hypersensitivity syndromes have been observed such as serum sickness-like reactions, Steven-Johnson syndrome, autoimmune hepatitis, vasculitis and a lupus-like illness [4,5]. The incidence and prevalence of minocycline induced lupus is unknown, either without pleural involvement or with pleural effusion [6]. Although minocycline-induced pigmentation noted to occur in the skin, subcutaneous fat, nails, teeth, gingivae, oral mucosa, lips, conjunctiva, sclera as well as

various internal structures throughout the body there are no reports described colored pleural fluid. Furthermore, there are no reports described minocycline induced chylothorax.

To our knowledge, this is the first report of minocycline related colored chylous pleural effusion as a part of drug induced lupus.

## 2. Case report

A 91-year-old man with cognitive impairment, hypertension, diabetes mellitus, chronic atrial fibrillation with no anticoagulant treatment and bullous pemphigoid, presented with a two weeks history of increased dyspnea, weakness and palpitation. He had been taking minocycline 200 mg/day for previous two years for bullous pemphigoid.

On admission he was afebrile, normotensive, in moderate respiratory distress, and SpO<sub>2</sub> was 95% on 4 L/min supplemental oxygen. The oxygen saturation on room air was 88%.

Physical examination revealed well-circumscribed blue-grey pigmentation on the shins and forearms (Fig. 1), irregular cardiac rhythm and was remarkable for dullness to percussion and decreased breath sounds over the left hemithorax.

The peripheral white blood cell count was  $5.8 \times 10^3$  cells/ $\mu$ L with 8.7% eosinophils and his hemoglobin count was 10.9 g/dL. Troponin level was normal. Electrocardiogram revealed atrial fibrillation with rapid ventricular response. Chest radiograph

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**Fig. 1.** Well-circumscribed blue-grey skin pigmentation.

showed large left pleural effusion. Transthoracic echocardiogram displayed normal left ventricular chamber size with normal systolic

function and moderate aortic stenosis with a gradient of 47.00 mm Hg.

Left thoracentesis was performed with evacuation of 1500 CC yellow colored exudative pleural fluid, which contained reactive mesothelial cells and fibrinous exudate with scattered granulocytes and few lymphocytes (Fig. 2). Pleural fluid triglyceride and cholesterol concentrations were determined to establish whether a chylous fluid was present. The levels were 164 mg/dL and 78 mg/dL respectively. The pleural fluid cholesterol to triglyceride ratio was found to be 0.47: the finding is compatible with chylous pleural effusion.

Cultures of the pleural fluid were negative, as were the Ziehl-Neelsen stainings.

Computed tomogram of the chest displayed normal parenchyma with left low lobe atelectasis and left moderate-size pleural effusion. No lymphadenopathy was observed.

Few days after the thoracentesis repeated chest radiograph indicated recurrence of pleural effusion. Tube thoracostomy into the pleural cavity was done for continuous drainage of chylothorax.

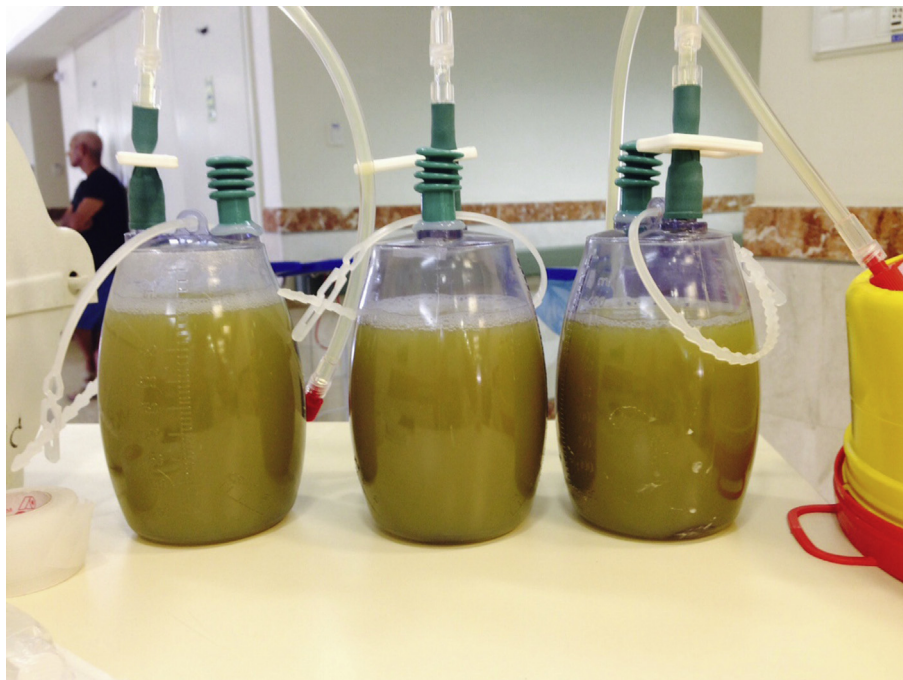
Minocycline side effect was suspected and lupus-like effect was considered. Minocycline treatment was discontinued.

Serological tests were positive for ANA and anti-dsDNA antibodies. The further investigation revealed negative ANA pattern and negative ANA in dilution 1:160. Antibodies against extractable nuclear antigens (ENA) were negative as well as pANCA, cANCA, Anti Cardiolipin and B2 Glycoprotein antibodies. Complement levels were within the reference range. Test for anti-histone antibodies was also negative.

No evidence of minocycline crystals was found on cytological examination of pleural fluid. The lymphocyte-stimulation test was not performed.

Two weeks following minocycline discontinuation the pleural effusion had completely resolved, chest tube was withdrawn and patient was discharged.

Four months later he remained well with no sign of pleural effusion recurrence and partial resolution of skin pigmentation.



**Fig. 2.** Yellow colored pleural fluid.

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