

# Transient cardiac failure secondary to Mycoplasma infection

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## ABSTRACT

*Mycoplasma pneumoniae* is a well-known cause of atypical respiratory infection. However many may not be aware of the many extra-pulmonary manifestations, some of which can be associated with significant complications. We report the case of a 31-year-old lady who had transient heart failure in association with a mycoplasma infection.

**Keywords:** Cardiac failure, complications, Mycoplasma pneumonia, respiratory tract infection

## INTRODUCTION

Mycoplasma infection is a well-known cause of atypical respiratory infection. However, it is also associated with many other extra-pulmonary manifestations that can be benign or life-threatening.<sup>1,2</sup> Therefore, it is important that clinicians are aware of the less common manifestations and consider mycoplasma infection in the differential diagnosis.

## CASE REPORT

A 31-year-old nurse with background history of thalassaemia trait and migraine headache presented to the Emergency Department with fever, nonspecific jaw pain and mild dyspnoea. Her illness has started two days previously with dizziness, sore throat and toothache. She was seen by the dental practitioner

who recommended further dental evaluation at the dental clinic and she was given symptomatic treatment. She denied any history of cardiac problems.

On examination, she was mildly dyspnoeic and had desaturation with SpO<sub>2</sub> dropping to as low as 88% on room air which improved with oxygen supplementation. Clinical findings included mildly elevated jugular venous pulse and bibasal lung crepitations. Hemodynamic status was otherwise normal. Arterial blood gas analysis revealed type-1 respiratory failure. Her electrocardiogram (ECG) showed T wave inversions across V<sub>2</sub> to V<sub>3</sub> leads. Chest radiograph showed infiltration over middle and lower zones of the lungs field (Figure). Laboratory investigations showed leukocytosis, raised C-reactive protein but normal serum troponin.

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She was referred to the Acute Medical

Unit (AMU) as a case of bilateral pneumonia, and was started on intravenous amoxicillin-clavulanic acid (1.2 gm t.i.d). Azithromycin (500 mg daily for three days) was later added. Interestingly, the brain natriuretic peptide (BNP) was elevated at 2,184 IU. A re-review of the radiograph revealed mild cardiomegaly and changes consistent with pulmonary edema. A bedside echocardiography the following day showed an ejection fraction of 56-60%, mild tricuspid and mitral regurgitation and mildly elevated pulmonary artery gradient estimated was slightly elevated (27 mmHg, normal <25 mmHg). The remaining of the cardiac assessments was within normal limits.

Without the use of diuretics or fluid restriction, the patient's condition improved and BNP was down to 197 IU. All septic work-up was negative. The mycoplasma (IgM) serology came back positive, indicating acute infection. Repeat chest radiography four days later showed resolution of pulmonary edema and cardiomegaly (Figure 2). Follow-up soon after discharge and at six month revealed no recurrence of her heart failure or any long-term cardiac sequelae.

## DISCUSSION

Mycoplasma infection is common and has been estimated to account for up to 40% of all cases treated for community acquired pneumonia.<sup>2,3</sup>

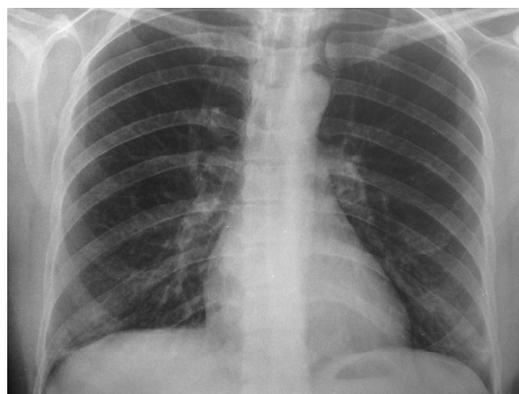
Up to 25% of mycoplasma infections are associated with extra-pulmonary manifestations (neurological, gastrointestinal, hematological, musculoskeletal, dermatological, renal and cardiac) that many clinicians may not be aware.<sup>1,2</sup> Since being first reported in 1944, and despite being a prevalent infection,



**Fig. 1: Chest radiograph showing mild cardiomegaly and bilateral haziness up to the mid zones.**

cardiac manifestations (arrhythmias or perimyocarditis) remain uncommon.<sup>4-11</sup> It has been estimated that 4.5% of confirmed *M. pneumoniae* infection have cardiac manifestations (peri-myocarditis in 76% and pericarditis in 24%), but most are mild and self-limiting.

Three mechanisms have been proposed to account for the extra-pulmonary manifestations<sup>12</sup>; direct invasion by the mi-



**Fig. 2: A repeat chest radiograph showing resolution of pulmonary oedema and cardiomegaly.**

cro-organism, auto-immune modulation through molecular mimicry, and induction of vascular thrombosis like state leading to vasculitis with or without systemic hypercoagulable state.

The natural history of cardiac manifestations of mycoplasma infection remains unknown. Early diagnosis is important and early antimicrobial therapy has been reported to attenuate the manifestations.<sup>2</sup> Mycoplasma infection is common and is often not suspected Mycoplasma infection is common and is often not suspected unless the manifestations are typical. Therefore, front-line clinicians should be aware of the atypical manifestations of mycoplasma infection and to consider it a cause of cardiac failure, especially in young patients.

In conclusion, our case highlighted an unexpected but potentially serious manifestation of mycoplasma infection. It is important for clinicians to be aware of the associations of common infections such a mycoplasma with potentially life threatening complications.

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