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CASE REPORT

# Fusobacteriosis presenting as community acquired pneumonia

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## KEYWORDS

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**Summary** *Fusobacterium* species are anaerobic Gram-negative bacilli, which colonise the mucus membranes of man and animals and can cause a number of clinical manifestations including Lemierre's disease (postanginal septicaemia), abdominal infection and deep-seated abscesses. The incidence of fusobacteriosis infections appears to be increasing, and we present three cases of fusobacteriosis who presented with features of community acquired pneumonia (CAP). Cases were treated with benzyl penicillin and metronidazole, co-amoxiclav and metronidazole and amoxicillin and clarithromycin. Since some of the *Fusobacterium* species are resistant to penicillin and erythromycin, treatment with these antibiotics in cases of fusobacteriosis presenting as CAP may lead to treatment failure. A high index of clinical suspicion is required to recognise this rare cause of CAP.

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*Fusobacterium* species are long thin spindle shaped anaerobic Gram-negative bacilli (Fig. 1), which colonise the mucus membranes of man and animals and can cause a number of clinical manifestations including oral and dental infection, abdominal infection and deep seated abscesses. The specific condition of Lemierre's disease is a rare form of upper airways infection with a life threatening secondary septic thrombophlebitis of internal jugular vein and frequent metastatic dissemination. It was first described

in 1900 by Courmont and Cade followed by Lemierre's extensive case review and detailed description of the syndrome.<sup>1</sup> This anaerobic infection is caused by either of the two most common pathogenic species of *Fusobacterium* (*Fusobacterium necrophorum* and *Fusobacterium nucleatum*). The condition usually presents in previously healthy young adults who develop fever, systemic toxicity and tenderness to palpation along the jaw and sternocleidomastoid muscle. The most common site of metastatic infection is the lung. The typical clinical triad consists of pharyngitis, a tender and swollen neck and non-cavitating pulmonary infiltrates.<sup>2</sup>

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The complications of this infection include persistent bacteraemia and cavitating septic pulmonary emboli. In this report we discuss three cases of fusobacteriosis masquerading as community acquired pneumonia (CAP).

### Case report 1

A 57-year-old man was admitted with a 10-day history of shortness of breath (SOB), rigors, cough and haemoptysis. The patient suffered sharp, stabbing, pleuritic chest pains before the SOB developed and had a short history of weight loss. He had, fever (39.8 °C), hypotension (93/63 mmHg), clubbing, tachypnoea (40/min), O<sub>2</sub> saturation of 91% and mild leucocytosis (WCC  $12.1 \times 10^9/l$ ). The CXR showed right lower lobe consolidation. Bilateral basal crackles were present. The patient was initially thought to have CAP and was treated for such. However, three days later he had a positive blood culture for *F. nucleatum* sensitive to penicillin and metronidazole. The inpatient stay was complicated by the development of an acute cerebellar event and malaena. Upper GI endoscopy showed prepyloric antral erosions. No abnormality was detected in CT and MRI scan of the brain. The patient was treated with co-amoxiclav (1.2 g IV tds) and metronidazole (500 mg IV tds). He improved gradually and was discharged.

### Case report 2

A 21-year-old man with a 2-week history of sore throat and productive cough was admitted with tachypnoea, hypoxia and renal dysfunction. His condition deteriorated to the point where he required urgent intubation and haemodynamic monitoring. On admission he was hypotensive (systolic BP 80-90 mmHg), hypoxic (PaO<sub>2</sub> 10 kPa), and tachypnoeic (RR 40/min). CXR showed signs of right upper lobe and right middle lobe consolidation. He was put on activated Protein C. Over the next 48 h his sepsis resolved. Approximately 18 h later his oxygenation significantly deteriorated as a consequence of progressive pulmonary involvement. The aetiology of the condition was uncertain, as routine microbiological tests for CAP were negative. He was treated on full spectrum antibiotic cover with amoxicillin (later changed to cefotaxime) and clarithromycin. After four days *F. necrophorum* sensitive to penicillin was isolated from his blood culture. He was put on benzyl penicillin 1.2 g qds IV and metronidazole 500 mg bd IV and made a complete recovery.

### Case report 3

A 29-year-old veterinary nurse was admitted with a one-week history of flu-like symptoms, becoming increasingly short of breath with pleuritic chest pain. On examination she was pyrexial (38.3 °C),

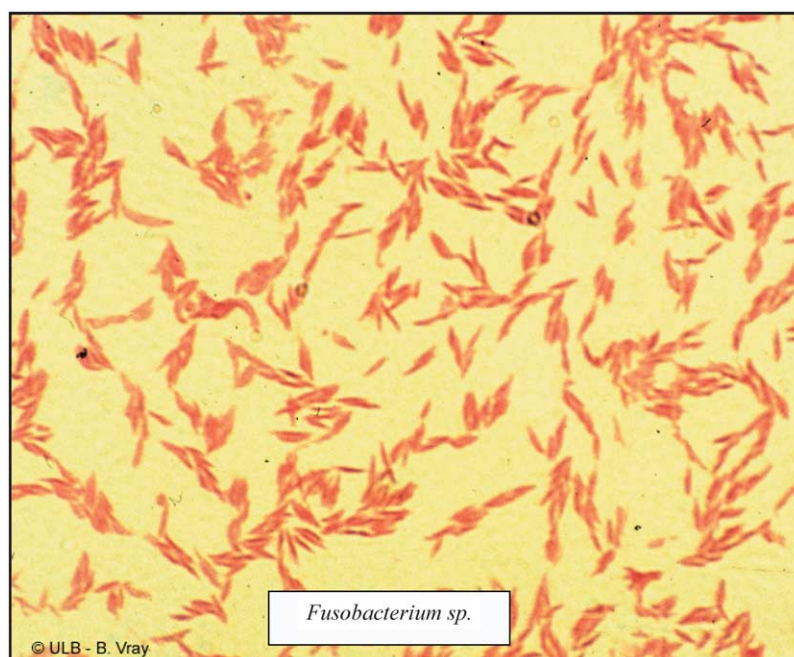


Figure 1 Gram stained smear of *Fusobacterium* species (by courtesy of Professor Louis De Vos).

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