A simple sore throat?

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Sore throat is one of the commonest presenting symptoms particularly in primary care. Most cases are self-limiting, and do not usually need antibiotics (Gonzales et al, 1997). Here we report a case with an unusual cause of sore throat, for which the use of antibiotics is mandatory.

DISCUSSION

Fusobacteria are Gram-negative anaerobes that normally inhabit the oral cavity and gastrointestinal tract (Henry et al, 1983). For reasons which are unknown, they may become invasive and cause necrobacillosis. This is sometimes characterized by septic thrombophlebitis of the internal jugular vein, a condition termed Lemierre's syndrome. The syndrome was described in 1936 in 20 patients, of whom 18 died (Lemierre, 1936).

Necrobacillosis often affects previously healthy adults (Stallworth and Carroll, 1997). Apart from septic thrombophlebitis of the internal jugular vein, metastatic infection may also occur in the lungs, joints, bone, liver, spleen, kidneys and meninges (Burden, 1991). *F. necrophorum* is thought to be more virulent than *F. nucleatum* (Burden, 1991), although the latter can also cause metastatic infection (Henry et al, 1983). In our patient, the infection was caused by *F. nucleatum*, and was severe enough to result in thrombocytopenia, abnormal renal function and grossly elevated inflammatory markers.

With the advent of antibiotics, there has been a decrease in the incidence of Lemierre's syndrome, such that most clinicians are now not familiar with the disease, and thus diagnosis is often overlooked (Burden, 1991). This may be one reason for the continuing high mortality rate of 8% (Burden, 1991). Prompt diagnosis is important (MacDonald et al, 1995) since the organism is readily susceptible to penicillin and metronidazole; antibiotic treatment results in complete recovery in most cases, especially if started before the onset of complications.

CASE REPORT

A previously healthy 26-year-old man presented with a 3-day history of sore throat, fever, rigors, loin pain and vomiting. He was pyrexial (40°C) and tachycardic (104 beats/minute), but had a normal blood pressure. Clinical examination revealed erythematous fauces without any exudates, and bilateral submandibular lymph node enlargement. There was no meningism or para-spinal tenderness. The platelet count was decreased (108 x 10^9/litre, normal range (NR) 150–400x10^9/litre) and white cell count was elevated (16.1x10^9/litre, NR 4–11x10^9/litre) with a neutrophilia. Markers of inflammation (erythrocyte sedimentation rate 61mm/h and C-reactive protein 226mg/litre) and urea (11.1 mmol/litre, NR 3–7 mmol/litre) were also elevated.

Chest X-ray and glandular fever slide test were both normal. The patient was started on intravenous ceftriaxone after blood, urine and throat swabs were sent off for culture.

The patient's temperature settled over the next 4 days, and he was converted to oral antibiotics. Gram-negative anaerobes were cultured from the blood; these were identified as *Fusobacterium nucleatum*, suggesting that the patient had necrobacillosis. Throat swabs failed to grow the organism. In order to exclude an abdominal source for the organism, the patient also had an abdominal ultrasound and a radiolabelled white cell scan, both of which were normal. The patient's inflammatory markers and renal function returned to normal with antibiotic treatment, and he remains well 1 year after his illness.

CONCLUSIONS

Our report illustrates that not all cases of sore throat are simple; the presence of systemic symptoms which are severe enough to warrant hospital admission, together with elevation of inflammatory markers such as C-reactive protein in a previously healthy young adult, should alert the clinician to consider a diagnosis of necrobacillosis. The importance of performing blood cultures before antibiotic treatment cannot be over-emphasized. HM

Figure 1 *was kindly provided by Professor CA Hart, University of Liverpool.*

Burden P (1991) Fusobacterium necrophorum and Lemierre's syndrome. *J Infect* **23:** 227–31

Gonzales R, Steiner JF, Sande MA (1997) Antibiotic prescribing for adults with colds, upper respiratory tract infections, and bronchitis by ambulatory care physicians. *JAMA* **278:** 901–4

Henry S, DeMaria A, McCabe WR (1983) Bacteremia due to fusobacterium species. *Am J Med* **75:** 225–32

Lemierre A (1936) On certain septicaemias due to anaerobic organisms. *Lancet* **i:** 701–3

MacDonald M, Harar RJ, Prior RJ (1995) Necrobacillosis: are we missing the early stages of this life-threatening infection? *Lancet* **346:** 1705

Stallworth JR, Carroll JM (1997) Lemierre's syndrome: new insights into an old disease. *Clin Pediat* **36:** 715–8

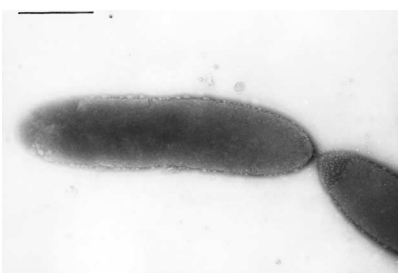

Figure 1. Electron photomicrograph showing Fusobacteria.

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