Case report

Pneumococcal epiglottitis in systemic lupus erythematosus on high-dosage corticosteroids

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SUMMARY A patient with systemic lupus erythematosus who developed pneumococcal epiglottitis is described and the literature reviewed. This infection is extremely rare in adults, and only 10 cases, none of them with SLE, have so far been reported. Epiglottitis is usually caused by *Haemophilus influenzae*. However, in immunocompromised hosts the probability of *Streptococcus pneumoniae* as the infecting agent is considerable. Penicillin should therefore be part of the antimicrobial regimen in such patients.

Bacterial infections are frequent in patients with systemic lupus erythematosus (SLE).^{1–3} They occur more frequently in patients with active disease, with azotaemia, or on corticosteroid therapy.^{4,5} The organ systems most commonly affected are the urinary tract, lungs, and skin.³ A patient with SLE who developed acute pneumococcal epiglottitis is described below. This complication has to the best of our knowledge not been reported previously in SLE.

Case report

A 21-year-old male was diagnosed as suffering from SLE 3 years prior to his present admission to hospital, when he presented with a butterfly rash, alopecia, leucopenia, Coombs-test positive haemolytic anaemia, positive LE cell preparation, and biopsy proved proliferative glomerulonephritis. Since then he had been treated with prednisone, 20–60 mg/day. He was admitted to hospital several times because of bacterial infections, including shigellosis, staphylococcal bronchopneumonia, and recurrent furunculosis. Three days before his present admission, while on 20 mg prednisone per day, he developed fever, chills, and progressive dyspnoea.

On examination he was found to be extremely dyspnoeic and cyanotic. His temperature was 40°C, pulse rate 120 per minute, and blood pressure 130/70 mmHg. Arterial Po₂ was 40 mmHg, Pco₂ 28 mmHg, pH 7.37, bicarbonate 16 mEq/l (16 mmol/l). Otolaryngological examination revealed very marked swelling and erythema of the soft palate and the epiglottis. Because of the severity of the condition

an emergency endotracheal intubation was performed. The relevant laboratory findings were: erythrocyte sedimentation rate 115/130 mm/h (Westergren), haemoglobin 10.8 g/dl, and white blood cells $13.6 \times 10^9/l$ with a shift to the left. Urine analysis showed: albumin +2 erythrocytes 20–30 per high-power field, leucocytes 5–10 per high-power field, and no casts. Blood urea was 11.3 mmol/l, creatinine clearance 48 ml/min. A test for antinuclear antibodies was positive and serum complement (C3) was 38 mg/dl (0.38 g/l). Cultures of sputum and throat were negative. Intravenous ampicillin and hydrocortisone were instituted. Two days later blood cultures grew *Streptococcus pneumoniae* resistant to ampicillin and sensitive to penicillin. The antibiotic was substituted by penicillin 8 megaunits per day intravenously. A gradual improvement ensued and the patient was discharged after 12 days.

Discussion

Pneumococcal epiglottitis is an uncommon infection. In a recent review of the literature Kessler *et al.*⁶ found 7 adult patients and added 3 more. In 4 of these the diagnosis was confirmed by positive blood cultures, whereas in the remaining 6 *Streptococcus pneumoniae* was isolated from throat cultures only. In the latter group it is difficult to determine whether *Str. pneumoniae* was the offending pathogen, since approximately 50% of the normal population carry *Str. pneumoniae* in the upper respiratory tract.⁷ It is of interest that the 4 patients with positive blood cultures were immunocompromised hosts: 2 had multiple myeloma, one myelomonocytic leukaemia, and one Hodgkin's disease. The patient described here represents an additional example of a blood-culture positive epiglottitis in a compromised host.

SLE is often associated with infections attributed to immunological impairment, both cellular and humoral, defective phagocytosis, leucopenia, and decreased chemotaxis.⁸⁻¹⁰ This susceptibility is increased by corticosteroid therapy, azotaemia, and active disease, as in our patient.^{4,5} It is noteworthy that our case and the 3 cases described by Kessler *et al.*⁶ had been treated initially with broad spectrum antibiotics and that penicillin was administered only after positive blood cultures for *Str. pneumoniae* had been obtained. Specific and effective therapy was therefore delayed.

In conclusion, epiglottitis, a rare disease in adults, is usually due to *Haemophilus influenzae* type B.⁶ However, in immunocompromised patients the probability of *Streptococcus pneumoniae* being the offending agent is considerable and should be taken into account when antimicrobial therapy is chosen.

References

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