numerous ova of *S mekongi*. The patient was treated with praziquantel 75 mg/kg daily taken in three divided doses three times with intervals of four hours. Four months later he still had some eggs of *S mekongi* in his rectal mucosa but many of them were black. He was treated again with praziquantel, and three months later there were no parasites in the rectal mucosa.

Discussion

Schistosomiasis due to *S mekongi* is rarely diagnosed in Europe. Since 1979 we have investigated the faeces of over 200 refugees from South-east Asia, most of them from Laos and Cambodia, and have found no ova of *S mekongi*. In the patient described here serological examination with *S mansoni* antigen yielded slight evidence of schistosomiasis, but only rectal biopsy of normal looking mucosa allowed the diagnosis to be established. Treatment with praziquantel, which is also used to treat *S japonicum* infections,[2] was effective after two courses.

References

1 Voge M, Bruckner D, Bruce JI. Schistosoma mekongi Sp N from man and animals, compared with four geographic strains of schistosoma japonicum. *J Parasitol* 1978;**64**:577-84.

2 Zhejiang Clinical Cooperative Research Group for Praziquantel. Clinical evaluation of praziquantel in treatment of Schistosoma japonica: a report of 181 cases. *Chin Med J* 1980;**93**:375-84.

(*Accepted 29 March 1983*)

Mycoplasma hominis septicaemia

H FRIIS, A PLESNER, J SCHEIBEL, T JUSTESEN, K LIND

Abstract

Mycoplasma hominis septicaemia occurred in a patient with a malignant lymphoma of lymphoblastic type in leukaemic phase. M hominis was isolated several times from blood cultures with antibody titres against the micro-organism rising to a high level despite severe immunosuppression. M hominis was detected in the blood after subculture of the blood culture bottles despite their macroscopically normal appearance. The patient's pyrexia resolved without treatment with antibiotics effective against M hominis.

Introduction

Mycoplasma hominis is a common inhabitant of the genitourinary tract.[1 2] It has been associated with postpartum[3 4] and postabortal fever,[5] and some cases of pyelonephritis have been reported.[6] Its role as a pathogen in immunosuppressed patients has not, however, been established.

We report a case of severe immunosuppression in a patient in whom *M hominis* was isolated from several blood samples. The patient developed a high rise in antibody titre despite the severe immunosuppression.

Department of Clinical Bacteriology, University of Copenhagen, Institute of Medical Microbiology, Copenhagen, Denmark

H FRIIS, MD, registrar
J SCHEIBEL, MD, head physician
T JUSTESEN, MD, head physician

Department of Medicine, Finsen Institute, Copenhagen, Denmark

A PLESNER, MD, registrar

Mycoplasma Laboratory, Statens Seruminstitut, Copenhagen, Denmark

K LIND, MD, PHD, head physician

Correspondence and reprint requests to: Dr H Friis, Department of Clinical Bacteriology, Institute of Medical Microbiology, Juliane Mariesvej 28,2 DK-2100 Copenhagen, Denmark.

Case report

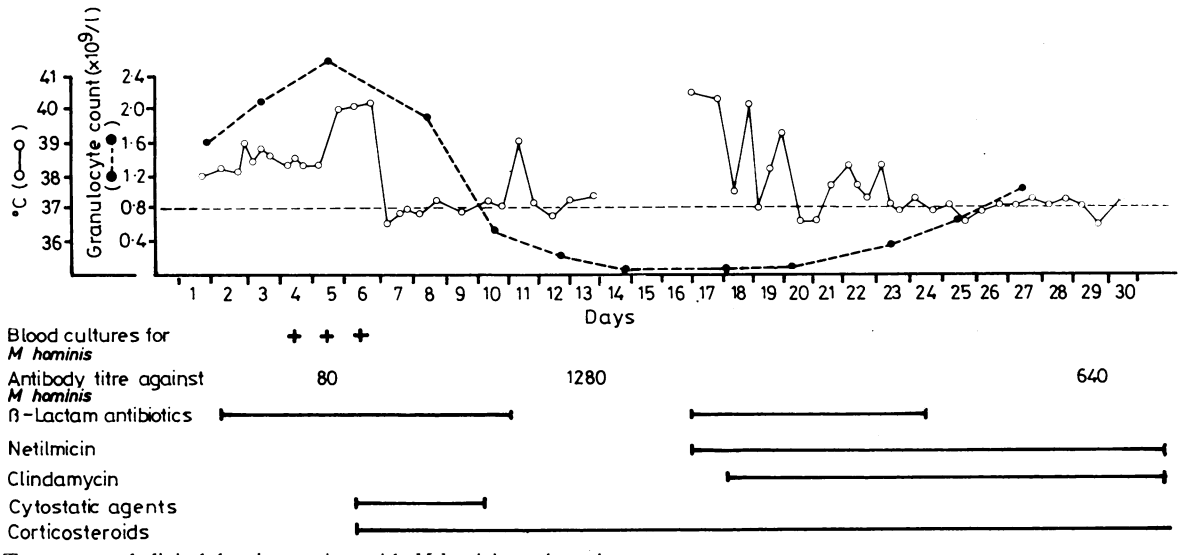
A 38 year old man with a malignant lymphoma of lymphoblastic type in leukaemic phase was admitted to hospital with a temperature of 38°C. As shown in the figure, treatment with β-lactam antibiotics was started on day 2, firstly with penicillin, then with a combination of methicillin and ampicillin, and later with cefotaxime. Despite treatment his temperature rose to 40°C. *M hominis* was isolated from blood cultures on days 4, 5, and 6. The micro-organism was identified on Hayflick's agar medium[7] by the disc growth inhibition test[8] using a rabbit antiserum to *M hominis* strain PG21. Antineoplastic treatment was started on day 6 with prednisone 75 mg a day, vincristine 1 mg every week, and adriamycin 75 mg on days 7, 8, and 9.

The day after the start of corticosteroid treatment his temperature returned to normal and antibiotic treatment was stopped on day 10. On day 11 his temperature rose for a few hours to 39°C but no micro-organisms were isolated from the blood or urine. He was treated at home on days 14 and 15. On day 16 his temperature rose to 40·5°C and treatment with ampicillin, methicillin, and netilmicin was started. On day 17 the results of the blood culture were available and clindamycin was added to the treatment regimen in a dose of 600 mg given intravenously four times a day. Over the next two days his temperature remained above 39°C and amphothericin B was given in addition. His temperature gradually returned to normal by day 25. Over this period the granulocyte count was increasing, having been less than $0{\cdot}5 \times 10^9$/l (500/mm³) since day 10 and less than $0{\cdot}1 \times 10^9$/l (100/mm³) from day 14 to day 21.

Blood cultures carried out on days 11, 16, 17, 18, and 19 failed to yield *M hominis* or other pathogens. Throat swabs and midstream urine samples did not grow *M hominis* on culture. The bladder was not catheterised. Antibody titres against *M hominis*, as determined by an indirect haemagglutination test[9] on days 5, 13, and 29, were 80, 1280, and 640 respectively.

The blood samples were cultured under aerobic and anaerobic conditions for seven days in Hemobact® (Orion Diagnostica, Finland; see table). Routinely the bottles were inspected daily and subcultures made on the first and fifth days. On inspection there were no signs of growth, but routine subcultures from both the aerobic and anaerobic bottles on the blood agar plates on day 5 yielded growth after two days of anaerobic incubation. The colonies were pinpoint and translucent and Gram stained smears did not show any micro-organisms. The final diagnosis was made by the mycoplasma laboratory at the Statens Seruminstitut.

Antibiotic susceptibility testing was carried out by the single disc diffusion technique using discs from Bio Disc® (Solna, Sweden).[10] Susceptibility tests showed sensitivity of *M hominis* to gentamicin, netilmicin, fusidic acid, chloramphenicol, and clindamycin and resistance to β-lactam antibiotics, streptomycin, vancomycin, polymyxin, tetracycline, and erythromycin.



Treatment and clinical data in a patient with *M hominis* septicaemia.
Conversion: SI to traditional units—granulocyte count: $1 \times 10^9/l \approx 1000/mm^3$.

Contents of the blood culture system Hemobact®

Nutrient broth (Difco)	4·0 g/l
Glucose	1·0 g/l
Liquoid	0·25 g/l
Para-aminobenzoic acid	0·2 g/l
Haemin	0·005 g/l
Potassium nitrate	0·5 g/l
L-cystine	0·0011 g/l
L-cysteine hydrochloride	0·0324 g/l
Brain heart infusion broth	26 g/l
Penicillinase with the activity of	200 000 IU/2 h
Isovitalex	1·2 ml/l

The aerobic bottle contains 20% carbon dioxide and 80% air.
The anaerobic bottle contains 20% carbon dioxide and 80% nitrogen.

Discussion

The pathogenicity of *M hominis* in this case is indicated by the positive isolation from blood cultures on three different days, by the high rise in antibody titre, and by failure to grow other micro-organisms. The initial fall in temperature was probably caused by the corticosteroid treatment, but the high concentration of antibodies was probably responsible for clearing *M hominis* from the blood and for the patient being continuously afebrile until day 16. He did not receive any antibiotics active against *M hominis* until day 16. He had had a normal temperature since corticosteroid treatment began and had not received antibiotics since day 10. The second episode of fever was presumably not caused by *M hominis* since he did not respond to the netilmicin or clindamycin. The presence of *M hominis* in the cultures can easily be overlooked since it grows more slowly than most bacteria, the colonies are pinpoint and translucent, and it fails to stain by Gram's method. No turbidity developed in the blood culture bottles.

Recovery of *M hominis* from the blood stream of men has been reported after manipulation or surgery of the urinary tract[11 12] or after multiple trauma.[13] Only one study has reported isolation of *M hominis* from the blood in an immunosuppressed patient, but in this case no antibodies against *M hominis* were found in the blood.[14] Simberkoff and Toharsky reported that although fever and constitutional symptoms are often present, the finding of mycoplasmas in the blood is usually transient, lasting for less than a week even without effective treatment.[11]

The possible role of *M hominis* as a pathogen in immunosuppressed patients is not known, but this case indicates that this mycoplasma may cause septicaemia during immunosuppression. Infection with *M hominis* should be considered when an immunosuppressed patient has a fever of unknown origin.

References

[1] Taylor-Robinson D, McCormack WM. The genital mycoplasmas (first of two parts). *N Engl J Med* 1980;**302**:1003-10.
[2] Taylor-Robinson D, McCormack WM. The genital mycoplasmas (second of two parts). *N Engl J Med* 1980;**302**:1063-7.
[3] Lamey JR, Eschenbach DA, Mitchell SH, Blumhagen SH, Foy HM, Kenny GE. Isolation of mycoplasmas and bacteria from the blood of postpartum women. *Am J Obstet Gynecol* 1982;**143**:104-11.
[4] Wallace RJ, Alpert S, Browne K, Lin JL, McCormack WM. Isolation of Mycoplasma hominis from the blood cultures in patients with postpartum fever. *Obstet Gynecol* 1978;**51**:181-5.
[5] Harwick HJ, Purcell RH, Fekety FR. Mycoplasma hominis and abortion. *J Infect Dis* 1970;**121**:260-8.
[6] Thomsen AC. Mycoplasmas in human pyelonephritis: demonstration of antibodies in serum and urine. *J Clin Microbiol* 1978;**8**:197-202.
[7] Hayflick L. Tissue cultures and mycoplasmas. *Tex Rep Biol Med* 1965; **23** suppl 1:285-303.
[8] Stanbridge E, Hayflick L. Growth inhibition test for identification of Mycoplasma species utilizing antiserum-impregnated paper discs. *J Bacteriol* 1967;**93**:1392-6.
[9] Cho HJ, Ruhnke HL, Langford EV. The indirect haemagglutination test for the detection of antibodies in cattle naturally infected with mycoplasmas. *Can J Comp Med* 1976;**40**:20-9.
[10] Brown D, Blowers R. Disc methods of sensitivity testing and other semiquantitative methods. In: Reeves DS, Phillips I, Williams JD, Wise R, eds. *Laboratory methods in antimicrobial chemotherapy*. Edinburgh: Churchill Livingstone, 1979:25.
[11] Simberkoff MS, Toharsky B. Mycoplasmemia in adult male patients. *JAMA* 1976;**236**:2522-4.
[12] Cassell GH, Cole BC. Mycoplasmas as agents of human disease. *N Engl J Med* 1981;**304**:80-9.
[13] Ti TY, Dan M, Stemke GW. Isolation of Mycoplasma hominis from the blood of men with multiple trauma and fever. *JAMA* 1982;**247**:60-1.
[14] DeGirolami PD, Madoff S. Mycoplasma hominis septicaemia. *J Clin Microbiol* 1982;**16**:566-7.

(*Accepted 26 April 1983*)