Acute Brucellosis with Unexpected Source

BOGUMILA T. ROGERS, P. M. KEIR,
W. G. HENDERSON

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Acute brucellosis is uncommon in a wholly urban setting in the United Kingdom. We report here a case of pyrexia of unknown origin which appeared unlikely at first to be brucellosis but in which proof of this diagnosis was obtained by isolation of *Brucella abortus* from blood culture and positive serological results.

Case Report

A 58-year-old resident house porter at a hotel in central London presented with a three-month history of anorexia, weight loss of 20 kg, general malaise, weakness, and drenching night sweats. Previously his health had been good. He had not been outside the London conurbation at any time for 12 years. He took most of his meals at work and rarely ate elsewhere. He had no history of contact with livestock or fresh milk or its products and only occasionally drank milk or ate cheese.

Examination showed a tired, ill-looking man weighing 83 kg. He had a continuous fever of 37-38°C, spiking to 38.5°C. Mild pallor was present. There was no lymphadenopathy, abnormal bruising, or clubbing of the fingers. Apart from a sinus tachycardia of 104/min the cardiovascular system was normal, as was the respiratory system. The liver was palpable 4 cm below the costal margin and was non-tender, smooth, and firm and had a well-defined edge; the spleen was just palpable. The central nervous system was normal.

Results of investigation on admission included: haemoglobin 10.5 g/100 ml; packed cell volume 31.5%; mean corpuscular haemoglobin concentration 33%; mean corpuscular volume 79 µm³; W.B.C. 2,500/mm³ (neutrophils 950, lymphocytes 1,450; monocytes 75, eosinophils 25); E.S.R. 54 mm in the first hour; platelets 114,000/mm³; marrow hypoplastic (affecting mainly leucopoiesis); marrow culture for brucella negative after seven weeks; blood urea 34 mg/100 ml; electrolytes normal; bilirubin 1.1 mg/100 ml; aspartate aminotransferase 22 IU/l; alkaline phosphatase 8 K.A. units/100 ml; plasma proteins 6.5 g/100 ml (albumin 3.4 g, globulin 3.1 g); electrophoresis, broad, diffuse band in gammaglobulin fraction; E.C.G., chest and abdominal x-ray picture, and liver scan normal.

Titres in the brucella agglutination, Coombs, and complement fixation tests initially and five months later after treatment are shown in the table.

Royal Free Hospital, London WC1X 8LF

BOGUMILA T. ROGERS, M.D., Senior Registrar in Microbiology
P. M. KEIR, M.B., M.R.C.P., Medical Registrar (Present address: National Heart Hospital, London, W.1)
W. G. HENDERSON, F.R.C.PATH., Consultant in Microbiology

Titres in *Brucella* Agglutination, Coombs, and Complement Fixation Tests Initially and Five Months Later after Treatment

	Brucella Agglutination Test		Coombs Test		Complement Fixation Test	
	Initially	After Treatment	Initially	After Treatment	Initially	After Treatment
<i>B. abortus</i>	1/1,280	1/80	1/1,280	1/40	1/256	
<i>B. melitensis</i>	1/320	1/40	1/640	1/20	1/32	Anticomplementary

Blood culture was performed on admission. Approximately 5 ml of blood was inoculated into each of three bottles, two containing Castaneda's medium (Southern Group) and one brain-heart infusion. One bottle of Castaneda's medium was incubated in 10% carbon dioxide. After 18 days there was a heavy growth of whitish, translucent colonies 0.5 mm in diameter on the slope. With Gram's stain they appeared as very small Gram-negative rods. Tested in suspension with brucella antiserum (Wellcome) they agglutinated within five seconds with *B. abortus* antiserum and after a delay of 20 seconds with *B. melitensis* antiserum. For safety no other tests were performed in the routine laboratory. The organism was confirmed as *B. abortus* biotype 1 by the Public Health Reference Laboratory, Portsmouth.

After the diagnosis had been established inquiries disclosed that the milk commonly used in the hotel was not pasteurized, being obtained direct from a farm in the Home Counties owned by the proprietor of the hotel. Both establishments were visited by members of the local public health departments and *B. abortus* was isolated from samples of milk at both places and from the cows. Steps were taken to prevent further infection of the public from this source.

As soon as the diagnosis was established by the preliminary serological tests therapy was begun with streptomycin 0.5 g twice daily for three weeks and tetracycline 0.5 g four times daily for three months. A very satisfactory clinical improvement followed, with resolution of the fever within 48 hours. By the sixth day the spleen was no longer palpable and the patient felt noticeably less lethargic, with improvement of his appetite and disappearance of the night sweats. He was discharged from hospital when the course of streptomycin had been completed and was followed up for five months. He remained well, returned to work, and was gaining weight. The abnormal haematological and biochemical values returned to normal and the titres of antibodies against *B. abortus* were falling.

Comment

We report this case for two reasons, the unexpected mode of infection and the isolation of *B. abortus* from the blood culture. Isolation of *B. abortus* from blood is not common, confirmation of brucellosis being obtained usually on a serological basis only.

We feel that however unlikely the possibility appears at first sight consideration of brucellosis as a cause of pyrexia of unknown origin should be given in a similar clinical situation.

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