Liver abscess caused by Haemophilus parainfluenzae

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Summary
A case of liver abscess caused by Haemophilus parainfluenzae in an otherwise healthy adult is described which responded to medical management without surgery. This we believe to be the first reported case of liver abscess caused by this organism in the English medical literature.

KEY WORDS: Haemophilus parainfluenzae, liver abscess, ultrasound, cefuroxime, X and V factors.

Introduction
Although deep seated infections in adults due to Haemophilus parainfluenzae are encountered from time to time (Chunn et al., 1977; Oill, Chow and Guze, 1979), biliary tract infection caused by this particular organism is unknown. It seems that the pathogenic potential of H. parainfluenzae has probably been underestimated in the past.

Case report
A 26-year-old Nigerian student was admitted with a 3-day history of right upper quadrant abdominal pain, unproductive cough, fever and rigors. On examination, he looked unwell. He was pyrexial (40°C). His liver was enlarged 3 cm below the costal margin and was exquisitely tender, it was impossible by palpation to determine if the liver was smooth, he was not icteric and there were no other abnormalities. The spleen was not palpable. The patient had returned from a 10-week holiday in Nigeria 3 months prior to his illness.

Investigations showed haemoglobin concentration 13-9 g/dl and leucocyte count 8-9 × 10⁹/litre. The film for malarial parasites was negative. Liver function tests showed total bilirubin 29 μmol/litre, alkaline phosphatase 43 iu/l, aspartate transaminase 129 iu/l. Blood cultures were sterile and he was negative on screening for hepatitis B surface antigen (HBsAg). A plain abdominal radiograph confirmed hepatomegaly and a chest radiograph revealed a raised right hemidiaphragm. Ultrasound examination of liver revealed a large non-homogeneous area in the right lobe of the liver consistent with a liver abscess. Microscopy of pus aspirated from the abscess revealed scanty Gram negative coccobacilli but no other organisms or amoebae. Subsequent culture grew a pure heavy growth of a Haemophilus species. The strain was forwarded to Dr D. C. Turk (Public Health Laboratory, Sheffield) who confirmed that the organism was H. parainfluenzae. It was non-haemolytic and, on repeated testing, it grew well when given V factor but not X. The colonies were unusually mucoid which suggested encapsulation, and it did not iridesce on Levinthal agar. The fluorescent amoebic antibody test was negative.

He was treated with cefuroxime 750 mg intravenously 8 hourly. On this regime his condition improved. A repeat ultrasound examination of liver 7 days later showed a marked reduction in the size of the abscess. He became afebrile 12 days after commencing treatment and he was discharged home 5 days later. Follow-up at 5 months showed all was well.

Discussion
H. parainfluenzae is a commensal of the oropharynx. It has been isolated from throat, teeth and lower respiratory system (Oill, Chow and Guze, 1979). So far, this organism has not been considered to be of much clinical significance apart from bacterial endocarditis. Infective endocarditis due to H. parainfluenzae was well known before the advent of antibiotics, being incriminated as the most common pathogen in Gram negative endocarditis. Following the introduction of antibiotics the situation changed rapidly; over the last few years more and more cases are being reported again (Chunn et al., 1977). Seven cases of
adult bacteraemic *H. parainfluenzae* infections giving rise to pneumonia, epiglottitis with meningitis, pharyngitis, arthritis and endocarditis have been described recently (Oill, Chow and Guze, 1979).

Of late, *H. influenzae* sepsis and shock secondary to biliary infection in an adult patient following percutaneous liver biopsy with obstructive jaundice has been documented by de Sa Pereira et al. (1981). The most likely source of infection was claimed to be the gastrointestinal tract from where the bacteria ascended via the common bile duct. To prove this point, both X and V factors, essential for growth of this species, were shown to be present in human bile. In an extensive recent review of the literature by Hirschmann and Everett (1979), 2 reports of biliary infection caused by *H. influenzae* was recorded but none due to *H. parainfluenzae*. In our case, the spread could have been haematogenous or as suggested above. Except for aspiration of pus from the abscess for identification of the organism and the institution of appropriate antibiotic therapy, no other surgical intervention was necessary because of the marked reduction in the size of the abscess within a short period of time. This proves the effectiveness of medical management of hepatic abscess which has been highlighted recently by Herbert et al. (1982).

To the best of our knowledge, this appears to be the first case of *H. parainfluenzae* liver abscess in the English medical literature.

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**References**


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