Two cases of *Streptococcus suis* meningitis

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We report two cases of *Streptococcus suis* meningitis which was listed as an industrial disease in April 1987.

Case reports

Case 1

A 33 year old foreman in a pig meat processing plant presented with a week of cough and anorexia, followed by six hours of photophobia, headache, and vomiting. There was a history of rheumatic fever. He was drowsy and photophobic, with nuchal rigidity and a temperature of 38°C. His pulse rate was 50/minute and blood pressure 140/85 mm Hg. There was a harsh systolic murmur at the left sternal edge. Both pupils were constricted and unreactive to light.

The white cell count was $22 \times 10^9/l$, 88% neutrophils. Haemoglobin, urea, electrolytes, and chest x ray results were normal. ECG confirmed a sinus bradycardia. His cerebrospinal fluid was turbid, with 380 polymorphs/mm³ and pressure of 28 cm water, protein of 2.273 g/l, and glucose 2.7 mmol/l (plasma glucose 7.0 mmol/l). The cerebrospinal fluid deposit showed Gram positive diplococci, resistant to optochin on culture. The organism did not belong to Lancefield groups A, B, C, D, F, or H (Phadebact streptococcus coagglutination kit) and was identified as *S suis* type 2 by the API 20 Strept system.

Before his CT brain scan was shown to be normal, he was given mannitol and dexamethasone in addition to metronidazole and high dose benzylpenicillin. After disc sensitivity testing showed the organism to be sensitive to penicillin, treatment was continued with benzylpenicillin alone for 11 days. Although there was no clinical or ultrasound/ultrasonic evidence of endocarditis, his cardiac murmur and history of rheumatic fever dictated oral amoxycillin from day 11 to day 42.

His pyrexia settled over two days and both pupils became normal. He reported left sided deafness without vertigo, nystagmus, or ataxia five days later. Audiometry showed a 35 dB hearing loss on the left. These symptoms resolved spontaneously four months

after admission but he has a continuing short term memory defect.

Case 2

A 43 year old self employed butcher presented with a severe frontal headache after a 10 day flu like illness. He had a cough productive of yellow sputum. He had perforated his right ear drum as a child. He smoked 20 cigarettes a day and drank about 20 units of alcohol a week.

On examination he looked ill. His temperature was 38.2°C, pulse rate 70/minute, and blood pressure 130/70 mm Hg. He had pronounced neck stiffness and a strongly positive Kernig's sign but no other abnormal signs except for a small perforation in the right ear drum. He had a white cell count of $19.5 \times 10^9/l$. Lumbar puncture released turbid CSF with a pressure of 32 cm H₂O CSF glucose 0.6 mmol/l (blood glucose of 9.4 mmol/l), protein 1.927 g/l and white cells 262 mm³. A penicillin sensitive streptococcus was cultured from CSF and blood. Sputum culture grew *Haemophilus influenzae*.

On treatment with intravenous benzylpenicillin his symptoms resolved within 24 hours and after 36 hours he was afebrile. After four days of intravenous penicillin treatment was changed to oral amoxycillin and he was discharged well 10 days later.

Cerebral CT scan was normal, sinus x ray films were clear, and ENT examination failed to find a main portal of entry. The streptococcus was later typed by the Colindale Reference Laboratory as *Streptococcus suis* 2, Lancefield group R.

Discussion

In April 1987 infection with *S suis* was listed as an industrial disease in the United Kingdom. Almost all cases occur in those working with pigs or pig meat such as farmers, abattoir workers, or butchers¹ and housewives handling pork.² Poachers of wild boar are also at risk.³ In Hong Kong where pork consumption is high *S suis* is the commonest cause of bacterial meningitis.⁴

S suis type 2 septicaemia, meningitis, arthritis, and endocarditis are common in pigs.⁵ *S suis* is thought to enter through the upper respiratory tract and may be

found in the tonsils of asymptomatic pigs. In man the organism may gain access through cuts and abrasions. One patient had several innocuous looking cuts on his hands, acquired at work. Both patients presented with cough, raising the possibility of the organism entering through the respiratory tract. One patient had a bradycardia. Both patients frequently "boned" pigs heads.

In a recent review of European cases meningitis occurred in 39 of 44 infections with *S suis*, with deafness ensuing in 21.¹ Other common complications included arthritis, vestibular disturbance and uveitis, with one report of myocarditis but none of endocarditis. Case 1 was considered to be at risk from endocarditis and treated accordingly.

S suis type 2 was originally designated as group R streptococcus but has recently been found to contain the group D teichoic acid antigen. The group D reaction may be difficult to demonstrate using routine methods, however. Haemolysis is variable and in these cases was intermediate between the classic alpha and beta patterns. The organism is usually susceptible to penicillin, but one resistant strain has been reported.¹ A history of contact with pigs or pork should be

sought when non-groupable or group D haemolytic streptococci are isolated from patients with meningitis. Infection by *S suis* is now listed under category B9 for industrial injuries disablement benefit. Patients infected at work should be made aware of their entitlement to compensation.

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References

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