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# Meningitis caused by *Streptococcus suis* type II

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**Summary: A 49 year old head porter developed meningitis shown to be caused by *Streptococcus suis* type II. The rare human infections with the organism, a pathogen of pigs, usually occur in those employed handling pig meat and are associated with auditory or vestibular dysfunction.**

## Introduction

*Streptococcus suis* type II is a well recognized pathogen of pigs (Clements *et al.*, 1982). Infection of man by this organism is rare and has been proposed as an industrial disease because it has a very strong association with workers who handle pig meat (Clements *et al.*, 1982; Twort, 1981). We report a patient who had no industrial associations with pig meat yet contracted *Streptococcus suis* type II meningitis and suffered severe vestibular sequelae.

## Case report

A 49 year old head porter presented with a 2 day history of increasing pain in the neck and left side of the body with rigors. For a week he had suffered from muscular pains suggestive of a viral illness. Previously he had been well.

Examination revealed a patient unresponsive to verbal commands but rousable by vigorous painful stimuli. He was pyrexial, 39.9°C, and neck stiffness was easily demonstrated. No rashes or abrasions were found. Apart from a dense left cataract there were no other abnormal physical signs in the nervous system.

At lumbar puncture, turbid cerebrospinal fluid (CSF) under a pressure of 27 cm $H_2O$ was obtained. The fluid contained $4 \times 10^9$ white cells/l and Gram positive cocci, sensitive to penicillin. The same organism was isolated from blood cultures and was later identified as Lancefield Group R *Streptococcus suis* type II.

The infection was cured after intravenous benzyl penicillin 12 g/day for 5 days, with flucloxacillin 4 g over the first day, and subsequently oral phenoxymethylpenicillin 4 g/day for 9 days.

Five days after admission he complained of sudden onset of noises 'like little boys talking in the distance' and of deafness, particularly on the left side. He had been dizzy but without hearing difficulties for 2 days. Simultaneously a pustular eruption occurred on the left pinna, confirmed as herpes simplex by electron microscopy. A substantial hearing loss, 50 db at 4000 Hertz, was present at this time but by 4 months had improved to 25 db at 4000 Hertz, almost into the normal range. However he remains very ataxic 6 months after the meningitis with bobbing oscillopsia. Caloric tests of labyrinthine function show no response to stimulation on the left side and a minimal response on the right.

Pork is frequently eaten by the patient and his family and is purchased in bulk at Smithfield Market, London every two or three months then stored frozen until needed. He opened packs of frozen meat and sometimes cut up the meat himself. Other family members were apparently well.

## Discussion

Meningitis caused by *Streptococcus suis* type II is a rare illness with very few previous reports from Britain. In our patient an organism was recovered from both CSF and blood that was eventually identified as Lancefield Group R *Streptococcus suis* type II, though appropriate treatment was instituted immediately. Damage to the eighth cranial nerve is the rule, the illness having been complicated by deafness, ataxia or vertigo in all the previous cases. The onset of deafness has varied from the time the illness started to 3 weeks after (Clements *et al.*, 1982) and may be temporary (Joynson, 1980) or permanent (Shneerson *et al.*, 1980). The case reported here had a delay of 5 days and a distinctive tinnitus at the onset of deafness with subsequent recovery in hearing over 4 months.

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Ataxia and vertigo also occur as temporary or permanent sequelae (Shneerson *et al.*, 1980). Persisting damage to the vestibular apparatus with some symptomatic but no objective improvement with time has occurred here.

The striking feature of this case was the lack of association with the preparation and handling of pig meat on an industrial basis. Five of the six previous infections reported in Britain occurred in men employed by the pig meat industry, confirming European experience (Zanen & Engel, 1975) and leading to suggestions that *Streptococcus suis* type II infections should be considered an industrial disease (Clements *et al.*, 1982; Twort, 1981). Typical occupations include working in a pork pie factory (Agass *et al.*, 1977; Hickling & Cormack, 1976) or abbatoir (Joynson, 1980) and meat inspection (Twort, 1981). The sixth patient was a housewife (Clements *et al.*, 1982), who presumably shares with our patient the common feature of the purchase and preparation of pork – a hazard faced by very many Britons.

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