LETTER TO THE EDITOR

Community-acquired infection due to Stenotrophomonas maltophilia: a rare cause of meningitis

Stenotrophomonas maltophilia (previously Pseudomonas maltophilia and Xanthomonas maltophilia), a multiresistant Gram-negative bacillus, is increasingly recognized as an important cause of nosocomial infections, although community-acquired infection with this bacterium is reported rarely. The microorganism mainly infects severely ill, debilitated patients and is most frequent in immunocompromised hosts. Infection in immunocompetent individuals is rare. Stenotrophomonas maltophilia is associated with an ever-expanding spectrum of clinical syndromes, but remains extremely rare. This correspondence reports an unusual case of community-acquired meningitis due to S. maltophilia in an immunocompetent adult.

A 49-year-old man, an employee of a horse riding club, was admitted to the St Anna Hospital with confusion, headache, fever of 39.8°C, rigor, nausea and vomiting. The patient’s past medical history was significant for hepatic steatosis. The last time he had been to a hospital was in 1969 for head trauma. Physical examination revealed positive Brudzinski and Lasegue signs. He had a normal fundoscopic examination and had no focal neurological deficits. The remainder of his examination was unremarkable.

The laboratory findings showed: white blood cell count, 21.3 $\times$ 10^9/L with neutrophils 87%, CRP 21.4 mg/mL, ALT 30 IU/L, total bilirubin 0.6 U/L, protein 5.9 g/dl with immunoglobulins 8.9%. Chest X-ray was normal. A cranial computed tomographic scan demonstrated marked edema in both frontal regions. Lumbar puncture yielded xanthochromic fluid which when analyzed showed: white cell count 2.93 $\times$ 10^5/L (neutrophils 96% and lymphocytes 4%); glucose 75 mg/dL and protein 501 mg/dL. CSF Gram staining revealed the presence of Gram-negative rods. CSF culture yielded a Gram-negative bacillus which was identified as S. maltophilia. This isolate was susceptible in vitro to ceftazidime, amikacin, gentamicin, netilmicin, piperacillin, and tobramycin and resistant to amoxicillin/clavulanate, aztreonam, cefotaxime, ceftiraxone, ciprofloxacin, imipenem and trimethoprim-sulphamethoxazole (agar dilution test). Therapy with ceftazidime (2 g every eight hours) amikacin (500 mg every eight hours) and dexamethasone (8 mg every eight hours) was started immediately. A paranasal sinus CT revealed interruption of the cribiform lamina of the ethmoid bone (most likely from the previous head trauma). The patient’s fever abated three days later and the other symptoms disappeared.

CSF analysis ten days later revealed the following values: white blood cell count 0.001 $\times$ 10^9/L; glucose level 67 mg/dL; protein level 53 mg/dL. The fluid culture was sterile. After 14 days of hospitalization, he was transferred to the Head Surgery Unit for reconstruction of the cranial base. No long-term sequelae were observed.

Meningitis caused by S. maltophilia is uncommon. To date, only fourteen cases have been reported in the literature (including the present case) (see Table 1). Eight of these 14 were hospital-acquired and seven occurred after the patient had undergone a neurosurgical procedure; the remaining six were community-acquired. Four of these spontaneous episodes occurred in infants from developing countries, one in an adult with chronic obstructive pulmonary disease, one in a younger man with chronic sinusitis and the current case in an immunocompetent subject without any apparent risk factors.

The bacterium has been isolated from a wide range of nosocomial sources and rarely in humans. Even less is known about community sources of S. maltophilia. It has been isolated from a number of water sources including rivers, wells, lake, bottled water and sewage. The bacterium has also been recovered from a variety of soils. Food sources for the microorganism include frozen fish, milk, poultry eggs and lamb. The bacterium has also been isolated from...
from the faeces and gastrointestinal tract of horses, cows, rabbits, sows, lizards, frogs, sheep and snakes.\(^1\) Our patient could have acquired the bacterium from the ingestion of soil-contaminated foods or drinking water. The hypothesis that this patient acquired the microorganism in 1969 during the previous hospitalization for head trauma is unlikely.

Resistance to the multiple agents used to treat Gram-negative infections is a hallmark of \textit{S. maltophilia}.\(^1\) Based on susceptibility studies, trimethoprim-sulphamethoxazole (TMP-SMX) is the agent of choice for treating \textit{S. maltophilia} infections. However, recent data suggest that the percentage of strains resistant to TMP-SMX may be on the rise\(^1\) and the present case confirms this observation. The optimum treatment is not known, nevertheless, the organism is usually sensitive to ceftazidime, which is an appropriate initial choice of treatment. Recently, others have recommended combinations of ceftazidime and ciprofloxacin despite the in vitro resistance to the quinolones.\(^12\) This microorganism should be included in differential diagnosis of community-acquired meningitis in immunocompetent hosts.

\textbf{Conflict of interest:} No conflicting interest declared.

\begin{table}
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Author/Year & Case No. & Age/Sex & Comorbidity & Origin & Therapy & Outcome \\
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Patrick/1975 & 1 & 70 yrs/M & COPD & Community & Sulfadimidine, chloramphenicol & Recovered \\
Denis/1977 & 2 & 8 mth/M & None & Community & Ampicillin, colistin & Died \\
Denis/1977 & 3 & 13 mth/F & None & Community & Sulfadoxine, sulfadiazine, chloramphenicol & Recovered \\
Trump/1982 & 4 & 55 yrs/F & Breast cancer/ meningeal metastasis & Nosocomial & Chloramphenicol, gentamicin & Recovered \\
Sarvamangala Deri/1984 & 5 & 7 days/M & Prematurity & Community & None & Died \\
Muder/1987 & 6 & 65 yrs/F & Intraventricular bleed & Nosocomial & TMP—SMX & Recovered \\
Girijaratnakumari/1993 & 7 & 28 yrs/F & Primary brain tumor & Nosocomial & Ciprofloxacin & Recovered \\
Nguyen/1994 & 8 & 64 yrs/F & Meningioma & Nosocomial & TMP—SMX, gentamicin & Recovered \\
Papakakis/1997 & 9 & 36 yrs/F & Melanoma/ meningeal metastasis & Nosocomial & TMP—SMX, gentamicin & Recovered \\
Papakakis/1997 & 10 & 41 yrs/M & CNS primary lymphoma & Nosocomial & TMP—SMX, amikacin & Recovered \\
Platsouka/2002 & 11 & 42 yrs/M & Cholesteatoma & Nosocomial & Ciprofloxacin & Recovered \\
Lo/2002 & 12 & 4 days/F & Prematurity & Nosocomial & TMP—SMX & Recovered \\
Spencer/2002 & 13 & 31 yrs/F & Chronic sinusitis & Community & Ceftazidime & Recovered \\
Libanore/2003 & 14 & 49 yrs/M & None & Community & Ceftazidime, amikacin & Recovered \\
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\caption{Characteristic of patients with meningitis caused by \textit{Stenotrophomonas maltophilia}.}
\end{table}

\textbf{References}

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