Enterococcus gallinarum MENINGITIS IN AN IMMUNOCOMPETENT HOST: A CASE REPORT

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SUMMARY

We describe a rare case of a 53-year-old man with a long history of alcohol abuse, with Enterococcus gallinarum meningitis, an organism that rarely causes human infection and is primarily found in the gastrointestinal tract of poultry. The patient improved with high-dose ampicillin and gentamicin therapy. To our knowledge, this is the first Brazilian reported case of E. gallinarum meningitis and probably the first case described in an immunocompetent host.

KEYWORDS: Enterococcus; Enterococcus gallinarum; Meningitis; Alcohol abuse.

INTRODUCTION

Enterococci are gram-positive, facultative anaerobic cocci that are ovoid in shape and are difficult to distinguish from streptococci on Gram stain. They are usually associated with urinary tract and cardiovascular infections, while enterococcal involvement in central nervous system (CNS) rarely occurs in immunocompetent adults. E. faecalis and E. faecium are the two most commonly encountered enterococcal species, together accounting for 90% of isolates. Other species, including E. gallinarum are uncommonly encountered in human clinical specimens and are primarily found in the gastrointestinal tracts in poultry. Infection by E. gallinarum rarely occurs and has been implicated in a few invasive infections in humans, especially in immunocompromised or chronically ill patients. There are only four cases of CNS involvement reported in literature due to this unusual germ, all reporting on patients with some degree of immunosuppression who had been previously submitted to a neurological procedure. In this paper we describe one case of meningitis caused by E. gallinarum in an immunocompetent host.

CASE REPORT

A 53-year-old man was admitted to a public general hospital with a history of weakness, malaise, weight loss, mental confusion, fever and ataxia for 15 days prior to hospitalization. He had a background history of partial gastrectomy and cholecystectomy, 20 and 10 years before, respectively. He also had history of heavy alcohol intake for many years. On physical examination the patient presented fever (axillary temperature of 38.5 ºC), nuchal rigidity and mental confusion. He also had a history of weakness, malaise, weight loss, mental confusion, fever and ataxia for 15 days prior to hospitalization. He had a background history of partial gastrectomy and cholecystectomy, 20 and 10 years before, respectively. He also had history of heavy alcohol intake for many years. On physical examination the patient presented fever (axillary temperature of 38.5 ºC), nuchal rigidity and mental confusion. 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DISCUSSION

Enterococci uncommonly cause meningitis in normal adults. Most cases of enterococcal meningitis occur in patients with anatomic defects of CNS, prior neurosurgery, head trauma or immunosuppression. Two presentations of enterococcal meningitis are usually described: postoperative and spontaneous. Meningitis is a rare complication of high-grade bacteremia in patients with enterococcal endocarditis, especially in patients with AIDS and acute leukemias.

Enterococcus gallinarum, first described by Bridge & Sneath in 1982 as a streptococcus, and later redefined as an enterococcus by Collins in 1984, is a rare enterococcal species; more commonly found in animals.
Table 1
Central nervous system infection by *Enterococcus gallinarum* reported in the literature

<table>
<thead>
<tr>
<th>Reference</th>
<th>Age, Sex</th>
<th>Clinical presentation</th>
<th>Potential predisposing</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>64 yr, M</td>
<td>Fever and lethargy</td>
<td>VP shunt</td>
<td>i.v. Ampicillin &amp; Gentamicin for 3 weeks</td>
</tr>
<tr>
<td>1</td>
<td>51 yr, F</td>
<td>Fever and headache</td>
<td>Previous lumbar drainage of CSF</td>
<td>i.v. Rifampin &amp; Ampicillin for 3 weeks</td>
</tr>
<tr>
<td>3</td>
<td>57 yr, M</td>
<td>Fever and neck stiffness</td>
<td>VP shunt and RA</td>
<td>i.v. Teicoplanin for 4 weeks</td>
</tr>
<tr>
<td>3</td>
<td>12 yr, M</td>
<td>Fever and drowsiness</td>
<td>VP shunt and astrocytoma</td>
<td>i.v. Ampicillin for 8 weeks</td>
</tr>
<tr>
<td>Present report</td>
<td>53 yr, M</td>
<td>Fever, neck stiffness &amp; confusion</td>
<td>Alcohol abuse</td>
<td>i.v. Ampicillin &amp; Gentamicin for 3 weeks</td>
</tr>
</tbody>
</table>

M, male; F, female; CSF, cerebrospinal fluid; RA, Rheumatoid arthritis; VP, Ventriculoperitoneal.

in gastrointestinal tract of certain animals, and can sporadically cause infection. In a review of the literature, only four cases of meningitis by *E. gallinarum* were found as shown in Table 1. In all cases, a neurological procedure was performed prior to diagnosis (three with ventriculoperitoneal shunt and one with a lumbar drain). We describe here a case of *E. gallinarum* meningitis in a 53-year-old man, with a long history of alcohol abuse. In this case, there was unquestionable evidence of CNS infection, as demonstrated by mental confusion, fever, neck stiffness and neutrophillic pleocytosis on cerebrospinal fluid, with markedly high protein and low glucose. The infection of the CNS may have been associated with *E. gallinarum* derived from the gut, given that there was no other evidence of enterococcal infection or underlying diseases. The patient presented severe hyponatremia, which can be explained by the Syndrome of Inappropriate Secretion of Antidiuretic Hormone, secondary to the CNS infection.

The option for ampicillin and aminoglycoside was based on two important facts: the antibiogram and synergy of both antimicrobials, as recommended for CNS infections due to Enterococci, although there is no consensus about the best choice between monotherapy or combination therapy. The occurrence of vancomycin resistance in our case was expected, regarding a natural characteristic of motile species of enterococci in expressing Glycopeptide resistant genes. The duration of treatment was based on previous reports of treatment of enterococcal meningitis in an immunocompetent host. Para o nosso conhecimento, este é o primeiro caso relatado de meningite por *E. gallinarum* no Brasil e possivelmente o primeiro caso descrito em paciente sem imunodepressão.

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**Funding:** None to declare.

**Ethical Approval:** Subjects gave informed consent to the work.

**REFERENCES**


