

TITLE: A CASE REPORT: MENINGITIS CAUSED BY AN UNUSUAL PATHOGEN – *Streptococcus equi* ssp. *zooepidemicus*.

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ABSTRACT:

We report an unusual case of meningitis caused by *Streptococcus equi* ssp. *zooepidemicus* in a kidney transplant patient. A 73-years-old man, who lived in a rural area of Rio de Janeiro, was admitted at Hospital Universitário Antônio Pedro (HUAP) complaining about abdominal pain at the hypogastric region, fever, emesis and disorientation. At physical evaluation the patient was pale, dehydrated and non-responsive, presenting a respiratory rate of 26 bpm, a heart rate of 82 bpm, blood pressure of 150/100 mmHg and axillary temperature of 37.9 °C. The patient presented a previous history of chronic hypertension (controlled), had received a kidney transplant 28 years ago and was using immunosuppressive drugs. At this time, empirical treatment was initiated with piperacillin and tazobactam, and blood and cerebrospinal fluid (CSF) were sent to the HUAP laboratory for analysis and culture. The lumbar puncture revealed a cloudy and xanthochromic CSF containing $1.3 \times 10^4/\text{mm}^3$ segmented neutrophils (normal range up to 4 cells/ mm^3), 1.2×10^4 mg/dL of protein (normal range up to 40 mg/dL), and <5mg/dL of glucose, with current plasma level of 103 mg/dL. The C-Reactive protein in plasma was 37,91 mg/dL (normal range up to 0,3 mg/dL). The agglutination latex test was negative for the most common pathogens. The blood and CSF cultures became positive 24 hours later with Gram-positive cocci. The shape of colonies on blood agar appeared mucoid and with a wide zone of β -hemolysis. The isolate was identified as *S. equi* ssp. *zooepidemicus* (probability >99%) by automated biochemical tests (Phoenix™ system, Becton Dickinson, USA) and confirmed by mass spectrometry MALDI-TOF (Bruker Daltonics, Bremen, Germany). Antimicrobial susceptibility testing was performed by disc diffusion method on Mueller-Hinton agar with 5% sheep blood, and the isolate was susceptible to penicillin, ampicillin, and vancomycin. After confirming the meningitis diagnosis, the empiric treatment was changed for ceftriaxone, ampicillin e vancomycin. However due to pharmacodermia and angioedema of the lower lip, ampicillin and vancomycin were withdrawn, and the ceftriaxone was continued intravenously for 14 days. After the treatment the patient showed resolution of meningitis symptoms, but remains admitted at HUAP. *Streptococcus equi* is an uncommon cause of bacterial meningitis, but is commonly isolated from bacterial infections in animals, particularly horses. It is noteworthy that the patient had a previously contact with horses. In the present case we could observe the agreement between Phoenix™ and MALDI-TOF *S. equi* ssp. *zooepidemicus* identification, suggesting that the automated system used at HUAP for microbiologic diagnosis is trustworthy, even in cases of infections caused by unusual pathogens.

Keywords: Bacterial meningitis; *Streptococcus* C group; Phoenix™ system; MALDI-TOF.

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