

ENDOCARDITIS WITH STREPTOCOCCUS EQUI CASE REPORT

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Abstract: Native valve endocarditis is most commonly associated with oral streptococcus, unclassified, Enterococcus, Staphylococcus, HACEK group; in 5-10%, the etiology is not specified. We present a rare case of infectious endocarditis with *Streptococcus equi* spp *Zooepidemicus*, localized on the aortic valve, diagnosed from secondary damage - acute meningitis with right hemiplegia and mixed aphasia.

Cuvinte cheie:
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Rezumat: Endocardita infecțioasă pe valve native este asociată cel mai frecvent streptococilor orali nontipabili, enterococilor, stafilococilor, grupului HACEK, 5-10% nefiind precizate etiologic. Prezentăm un caz rar de endocardită infecțioasă cu *Streptococcus equi* spp *zooepidemicus*, cu localizare pe valva aortică, diagnosticată pornind de la afectarea secundară – meningită acută, cu hemiplegie dreaptă și afazie mixtă.

INTRODUCTION

Streptococcus equi subspecies *zooepidemicus* is a Lancefield group C beta-hemolytic streptococcus present within nasopharyngeal area, respiratory tract, genital mucosa in horses (1), cattle, causing respiratory, genital pathology and mastitis in animals. Diseases in humans are exceptional, caused by contact with animals (especially horses), transmitted by aerosols or respiratory secretions, exceptionally by consuming unpasteurized milk, manifested either as localized infection, pharyngitis, cellulitis, purulent arthritis or severe infections, meningitis, septicemia, endocarditis, resulting in death or significant neurologic sequelae. They can be associated with post-streptococcal syndromes similar to the beta-hemolytic streptococcus group A, most commonly with acute diffuse post-streptococcal glomerulonephritis.(2)

Infectious endocarditis on native valves in 40% of cases are caused by streptococci with low virulence from the oral cavity and group D streptococci in 10% of cases, 30% *Staphylococcus aureus*, 10% of cases are caused by coagulase-negative staphylococci, 5% of cases are assigned to HACEK group (*Haemophilus*, *Actinobacillus*, *Actinomycetemcomitans*, *Cardiobacterium*, *Eikenella*, *Kingella*), 5-10% of cases remain with an unspecified etiology, with negative blood cultures.(3)

We intend to present a special case of endocarditis with *Streptococcus equi zooepidemicus* spp, in which the onset of the disease was dominated by secondary meningocerebral impairment, in literature, few similar cases being described.

CASE PRESENTATION

We examined a female patient, 55 years old, from urban areas, unemployed, brought by relatives to the emergency room for fever, rapid alteration of the general condition, confusion, psychomotor agitation and rapid onset of coma. From the medical history of the patient, obtained from the relatives, the disease began a week ago by chills, fever, headache, left earache with otorrhea, for which she did not ask for medical advice and did not follow an outpatient treatment.

From the patient's past medical history we mention stage I high blood pressure and biliary dyskinesia. She is a smoker for 25 years of 20 cigarettes/day, daily coffee consumption and occasionally alcohol consumption

Physical examination: On admission, she reveals rapid alteration of the general condition, coma with extreme psychomotor agitation, suffering faces, sweaty teguments, dry mucosal, white tongue, teeth with gaps and almost complete edentation, normal chest complied, rhythmic heart sounds, well beaten, tachycardia, HR 100/min without cardiac murmurs, BP 100/60 mmHg, hepatomegaly 2 cm, impalpable spleen, signs of meningeal irritation, coma grade I/II, progressing right hemiplegia.

Laboratory examinations performed in the emergency revealed: leukocytes 7000/mm³, erythrocytes 3.63 mil/mm³, HGB =13g/dl, HCT=38.6%, PLT= 172000/mm³, NEU 85.6%, LYM 12, 1%, BUN(Blood Urea Nitrogen) 17mg/dl, creatinine 0.44 mg /dl, glucose 92mg/dl, SGOT 81U/L, SGPT 62U/L, BT (bilirubin total) 0.49 mg/dl, ESR 115mm/h, fibrinogen 438mg/dl, CRP 96mg/dl.

After carrying out cranial CT scan (picture no.1) that excludes the cerebral edema, there were identified collections of fluid in the sinuses and also in the left mastoid cells (left oto-mastoiditis, acute bilateral maxillary sinusitis), an lumbar puncture is performed, obtaining opalescent CSF with hypertension, with 2595 elements/mm³, chlorurochial 109,2mEq/l, glycorrachia 21mg/dl, proteinorachia 2.65 g/l, cytology: smear with rich cellularity, 100% composed of neutrophils on Gram stain, extremely rare Gram positive double cocci. Bacteriological examination evidenced no bacterial growth.

The bacteriological examination of the otic secretion was negative, smear colour on Gram-positive, Gram common flora, rare epithelial cells, absence of fungi.

6 days after admission, the patient presented right hemiplegia with mixed aphasia suggesting either the occurrence

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CLINICAL ASPECTS

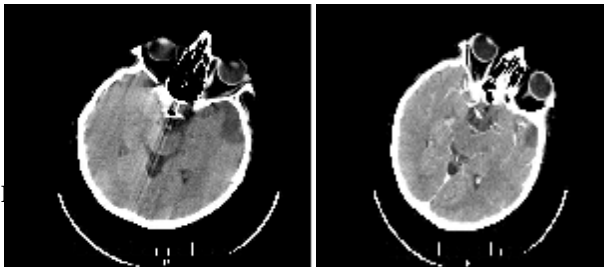
of left hemisphere brain abscess or a left Sylvian embolism in parallel with the development of cardiac breaths quick reshuffle, suggesting endocarditis. Subsequently, she associated anemia, hepatomegaly 3 cm, splenomegaly, linear hemorrhagic lesions under the nail.

Figure no. 1. CT scan



The cranial CT scan is repeated (figure no. 2), native and contrast, with contiguous sections, showing hypodense areas in the left temporal pole and bilaterally parasagittal frontoparietal white matter, in the bilaterally irrigation territories of the pericallosal artery, no detectable areas with focused iodophilia (aspect of ischemic stroke). Bilateral increased pericerebral vascular network. Fluid collections are maintained in the mastoidian cells and sinuses. Conclusions: Ischemic stroke sites in the left temporal pole and bilateral fronto-parietal. Bilateral increased pericerebral vascular network.

Figure no. 2. Native and contrast CT scan



The lumbar puncture is repeated, obtaining normotensive, clear CSF with 30 elements/mm³, mostly small lymphocytes (96%), rare neutrophils 2%, monocytes 2%, chlorurochia 117.8 mEq /L, 54mg glycorrhachia, albuminorachia 0.89 g/l.

Transoesophageal echocardiography is performed in particularly difficult technical terms due to the general condition of the patient and the difficulties of cooperation; fairly accurate images for mitral valve, aortic valve and interatrial sept were obtained. Normal mitral valve without regurgitation or stenosis. Normal tricuspid valve and intact interventricular sept. Free pericardium. Normal upward aorta. The noncoronary aortic valve on the ventricular side: pedicle pear-shaped formation with insertion at the base of the noncoronary valve with aortic valve mobile hypoechogenic formation, non-stenosed aortic valve. Conclusion: vegetation in the ejection path of the left ventricle.

Blood cultures obtained before the initiation of the antibiotic therapy were positive with *Streptococcus equi* spp. zooepidemicus with preserved sensitivity to all beta-lactams, aminoglycosides, glycopeptides, antibiotics that were tested for.

The progress was slow but positive under treatment for electrolyte rebalancing, brain depletion, antibiotic therapy – initial ceftriaxone and ampicillin for suspected pneumococcal meningitis probably from the ear, G penicillin 40 MU/day 4

weeks, associated with gentamicin 2 weeks, pathogenetic medication, symptomatic; the patient was discharged 5 weeks later, improved clinically and to be monitored cardilogically and by ultrasound.

The case presented is particular throughout the etiology of the endocarditis, *Str. equi* with otic starting point, initially suggesting acute meningoencephalitis with Pneumococcal, with septic metastases, with rapid mycotic aneurysms, respectively after a week of evolution, previously to the skin lesions, heart sounds, splenomegaly.

No correlation was found between etiology and a possible contact with animals at risk. The evolution of similar cases is characterised by a significant rate of death and neurological sequelae. The case presented evolved with neurological disabling, respectively right spastic hemiplegia, partially delivered and mixed aphasia corrected. The immediate prognosis was favourable, the consequences of valvular damage and valvular prosthesis opportunity were to be evaluated by ultrasound; it was recommended to remediate the dental outbreaks, as well as an ENT assessment. *Str. equi* has preserved susceptibility to penicillin, allowing the etiological treatment to be continued with penicillin and gentamicin within the first 2 weeks.

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