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Spinal infection caused by a defective strain of *Streptococcus intermedius* diagnosed by multiplex-PCR☆

Infección espinal por una cepa defectiva de Streptococcus intermedius *diagnosticada mediante PCR multiplex*

We present a case of spinal infection due to a defective strain of *Streptococcus intermedius*, whose diagnosis was facilitated by the use of multiplex PCR.

The patient was a 70-year-old male with type 2 diabetes mellitus admitted for 15-day low back pain with deterioration of his general condition and fever. He denied previous trauma. On examination, he presented pain on palpation in the lumbar spine with negative sacroiliac maneuvers, and in the analysis, he presented leukocytosis of 23.9×10^9/l (84.2% neutrophils) with C-reactive protein of 23.24 mg/dl. Empirical treatment with ceftriaxone was initiated.

The MRI performed 2 days later showed images compatible with erosive septic arthritis of the left interapophysial lumbar facets at L4–L5 level and several epidural and paravertebral collections compatible with abscesses. Surgery was performed to drain the paravertebral collections, and samples were sent to microbiology.

Gram staining showed a high number of polymorphonuclear leukocytes, but no microorganisms. Cultures were made on agar-blood and agar-chocolate plates (incubated in CO_2), Schaedler medium (anaerobiosis) and enriched thioglycolate broth. After 18 h of incubation no medium showed growth, so a portion of the sample was diluted with physiological serum and a multiplex PCR was performed (BCID, FilmArray®, Biofire), with a positive result for *Streptococcus* spp., being negative for *S. pyogenes*, *S. agalactiae* and *S. pneumoniae*.

After 48 h of incubation, all solid media remained negative and a Gram stain of the thioglycolate broth showed gram-positive cocci in chains, despite which no growth was obtained in the subcultures to solid media.

On suspicion of a nutritionally deficient strain, new subcultures of the broth were made, placing paper discs (BBLTM TaxoTM) impregnated with 0.001% pyridoxine hydrochloride on the plates. After nocturnal incubation, satellite colonies appeared around the discs (Fig. 1).

A portion of the thioglycolate broth was inoculated in a vial of anaerobic blood culture (BD BACTEC Plus Anaerobic/F), which showed growth at 33 h of incubation. After subcultures of this vial, sufficient growth was achieved in the habitual media, without the need to be supplemented for the subcultures or for carrying out the identification and antibiogram tests.

Identification was made using the API® 20 Strep system (bioMerieux), with a 91.2% success rate for *S. intermedius*, coinciding with that obtained by MALDI-TOF (Bruker) and was confirmed at the National Centre for Microbiology.

In the antibiogram with discs and gradient strips, the strain showed sensitivity to penicillin G, amoxicillin, cefotaxime, erythromycin and clindamycin.

This microbiological finding led to the suspicion of an odontogenic origin of the infection, consulting with the maxillofacial surgery department, which proceeded to extract 7 affected teeth. A transesophageal echocardiogram ruled out the existence of vegetation. The patient evolved favorably, with resolution of the condition after treatment with ceftriaxone IV for 20 days and subsequently oral amoxicillin, until 6 weeks were completed.

S. intermedius is part of the oropharyngeal microbiota, the gastrointestinal tract and the genitourinary tract.[1] More than 40% of clinical isolates come from dental plaque, with haematogenous spread having been reported in both surgical and conservative procedures,[2] and is a major cause of serious infections, including

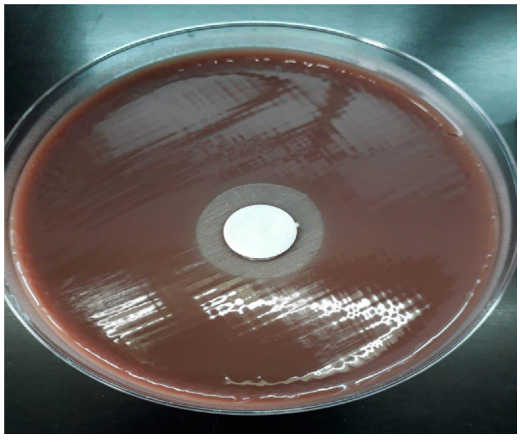

Fig. 1. Agar-chocolate plate showing satellitism around a disk impregnated with 0.001% pyridoxine hydrochloride.

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brain and liver abscesses,[3] particularly in diabetic patients, with cancer or cirrhosis.[2–5] Epidural spinal abscess can be fatal in more than 16% of cases. Patients typically present with fever and acute pain located in the neck or back.[2]

Cases with negative culture have been described when antibiotic therapy is established prior to sample collection,[4,6] but the novelty of our case is that growth was only obtained after supplementation with pyridoxine hydrochloride. The *Streptococcus* strains, known as nutritionally deficient variants, were transferred to other genera in 1995,[7] therefore, our case is the first in which a defective *S. intermedius* strain has been isolated. It is known that commercial media for blood cultures contain pyridoxal and allow the growth of these strains, while the habitual media do not do so unless they are supplemented.

Molecular techniques offer a fast, effective alternative for the detection of pathogens in clinical samples, especially when the culture is negative.[6,8] In our case, the use of FilmArray® equipment allowed us to make the microbiological diagnosis, confirming the usefulness of the BCID panel in samples other than blood, as other authors had suggested.[9]

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Cytomegalovirus papilitis in a child with acute lymphoblastic leukemia☆

Papilitis por citomegalovirus en niña con leucemia linfoblástica aguda

Acute lymphoblastic leukemia (ALL) is the most common neoplasm in children.[1] 15–20% of patients suffer relapses that worsen the prognosis.[2] In addition, due to immunodeficiency derived from chemotherapy or leukemia, opportunistic infections may develop.

Cytomegalovirus (CMV) is a cause of morbidity and mortality in immunocompromised individuals and can affect several organs; eye infection in children is rare[3] and usually appears as retinitis. CMV accesses the eye haematogenously. Histologically, it is characterised by a full-thickness necrotising retinitis. It can spread to the optic nerve, causing papillitis, inflammation of the optic nerve head with focal haemorrhages, with isolated papillitis being rare.[4]

Our objective is to show an atypical manifestation of CMV and the usefulness of aqueous humour analysis for differential diagnosis.

We present the case of a 9-year-old girl diagnosed with ALL who, after finishing maintenance treatment for leukemia, went to the emergency department owing to decreased visual acuity in her left eye.

On examination, she presented a visual acuity of 0.1 in the left eye with afferent pupillary defect. At the bottom of the left eye, papillitis was evident without vitritis or foci of chorioretinitis.

The analysis showed high values of acute phase reactants and in the microbiological study she presented a positive CMV IgM (1.55), with CMV IgG of 143 UA/ml. The CMV PCR in blood was 152,000 copies, but it was negative in the cerebrospinal fluid. It was decided to perform an anterior chamber puncture and repeat the lumbar puncture under general anaesthesia since a leukaemic infiltration could not be ruled out.

The CMV PCR of aqueous humour and cerebrospinal fluid were positive; she was diagnosed with CMV papillitis. She was treated with an injection of intravitreal ganciclovir, a descending corticosteroid regimen and antiviral treatment combined with ganciclovir 5 mg/kg/12 h for 18 days and foscarnet 60 mg/kg/8 h for 7 days. Subsequently, valganciclovir 450 mg/12 h orally was indicated for 8 months.

At one week, visual acuity had improved to 0.8 and improvement in papillitis was observed, which has been maintained until now (12 months).

Patients with ALL and ocular manifestations are a diagnostic challenge, since it is important to differentiate whether it is a recurrence or an opportunistic infection.

In this case, the patient had just finished the maintenance treatment, showed no signs of recurrence and the analysis showed elevated IgM antibodies for CMV. However, the absence of retinitis and the first negative lumbar puncture PCR caused doubt on the diagnosis of CMV papillitis, so it was decided to analyse the aqueous humour and repeat the lumbar puncture.

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