



Figura 1. Carga viral de VHC y VHB tras el inicio del tratamiento y niveles de transaminasas (AST).

causa principal de actividad hepática crónica. Se han postulado diferentes teorías para explicar la inhibición de la replicación del VHB en pacientes coinfectados⁷. La primera de ellas es que parece existir una interacción directa entre ambos virus, de forma que el VHC inhibe la replicación del VHB, inhibición que desaparece al tratar el VHC. También se ha planteado un aumento del espacio disponible para la replicación del virus B después del tratamiento de VHC. La teoría más aceptada por el momento es que la replicación crónica de VHC produce una situación inmune en el organismo favorable para controlar la replicación de VHB, situación que se ve interrumpida por el tratamiento con DAA.

En conclusión, este es el primer caso descrito de fallo hepático fulminante por VHB en el contexto de tratamiento con los nuevos DAA en un paciente con VIH. El paciente había realizado tratamiento previo con IFN durante 4 semanas sin haberse evidenciado reactivación del VHB, por lo que podría plantearse que, debido a su acción contra el VHB, las terapias basadas en IFN podrían mostrarse más seguras en este sentido, a costa de un mayor número de efectos adversos. Además, tampoco se evidenció reactivación al retirar TDF, lo que refuerza la existencia de una relación entre el tratamiento con DAA y dicha reactivación del VHB. Desconocemos si la infección por VIH guarda relación con esta reactivación o con la mala evolución clínica, en concreto en pacientes que no realizan tratamiento con 3TC/TDF. Hay que tener en cuenta que una gran cantidad de pacientes coinfectados realiza tratamiento con análogos de nucleósidos/nucleótidos, lo que podría prevenir la reactivación del VHB. Además, en el caso que presentamos, el

paciente no tenía anti-HBs, por lo que sería interesante valorar el riesgo aislado en personas con anti-HBs negativo. A día de hoy, el manejo óptimo de estas situaciones es desconocido⁷⁻⁹, por lo que consideramos necesarios unos protocolos para una monitorización muy estrecha de los pacientes que reciben AAD para VHC y presentan infección antigua o activa por VHB (HBcAb aislado o HBsAg), independientemente del estadio, el genotipo o el tipo de DAA, para evitar el riesgo potencial de reactivación del VHB en estas situaciones.

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Spondylodiscitis due to *Aerococcus urinae* infection in an elderly immunocompetent patient



Spondilodiscitis debida a Aerococcus urinae en paciente anciano inmunocompetente

In January 2015, a 79-year-old man visited the emergency room complaining of increasingly severe low lumbar pain, which he had had during the previous 2 weeks. The patient presented leg pain,

originating from the buttock region and radiating into the whole thigh, leg and foot. He was afebrile and had lost 18 kg. He had no particular antecedents except for a prostatic adenoma. The patient was hospitalized to control pain. Three days after admission to hospital, blood and urine specimens were taken for culture and magnetic resonance imaging (MRI) was performed. MRI revealed increased signal intensity at the L4-L5 position, compatible with a diagnosis of spondylodiscitis at this location (Fig. 1). Blood cultures were negative, although a urine culture yielded growth of *Enterococcus faecalis*. The patient was initially treated with intravenous



Fig. 1. Magnetic resonance imaging of the spine of a 79-year-old patient with infection due to *Aerococcus urinae*. This sagittal image of the lumbar spine demonstrates the classic appearance of a disk space infection at L4-L5.

ampicillin and gentamicin, assuming that *E. faecalis* was responsible for the discitis. Twelve days after admission to hospital, disk fluid were obtained by aspiration. Gram staining of the substance obtained from the aspiration revealed abundant leukocytes with a few gram-positive cocci. After 24 h, cultures performed on blood agar (bioMérieux, Marcy l'Étoile, France) yielded small alpha-hemolytic colonies. The isolate was identified by matrix-assisted laser desorption ionization time-of-flight (MALDI-TOF) mass spectrometry system (Bruker Daltonics, Leipzig, Germany) as *Aerococcus urinae*. 16S rDNA PCR revealed the presence of *A. urinae* in this sample, confirming a diagnosis of *A. urinae* spondylodiscitis. After isolation of *A. urinae*, gentamicin was discontinued and the patient remained with intravenous ampicillin for 3 weeks. Susceptibility was determined using Clinical Laboratory Standards Institute (CLSI) *Aerococcus* spp. criteria.¹ The following minimum inhibitory concentrations (MIC) were obtained: penicillin, 0.015 mg/L; ampicillin, 0.125 mg/L; cefotaxime, 0.094 mg/L; levofloxacin, 0.5 mg/L; vancomycin, 0.5 mg/L; erythromycin 1 mg/L; and clindamycin, 2 mg/L. The isolate was susceptible to all antimicrobials tested, except to erythromycin and clindamycin. No interpretive criteria for aerococci had been set for erythromycin and clindamycin at that time, so CLSI viridans group streptococci interpretive criteria was used.² During antibiotic therapy, the patient obtained relief from the back pain. Five weeks after admission to hospital, the patient was discharged with oral therapy of amoxicillin (5 months). The follow-up MRI 5 months after discharge showed reduction of the space between the L4-L5 vertebrae and loss of disk space height, but no sign of infection. The patient was followed up during a year and the resolution of the disease was complete, with no severe functional sequelae or neurological deficit. He was autonomous and independent.

Aerococcus species are Gram-positive cocci that grow predominantly in tetrads and clusters, but unlike staphylococci, they are catalase-negative.³ When grown on blood agar media in 5% CO₂, *A. urinae* forms small, alpha-hemolytic colonies that may be confused with viridans group streptococci or enterococci. Due to these similarities, these organisms have often been misidentified, leading to the causes of human infection being underestimated.⁴ Before the introduction of new methods of species identification, only occasional clinical case reports were noted. With the introduction of MALDI-TOF into routine laboratory analyses, however, awareness of aerococci as human pathogens has increased.⁵ When *A. urinae* was isolated from urine culture, the proportion of patients with symptoms indicating urinary tract

infection (UTI) and without symptoms (classified as colonized) was almost the same.⁶ Hence, the isolation of *A. urinae* from urine in symptomatic patients does not formally prove that this is the pathogen causing UTI. However, a UTI focus is frequently suspected in invasive *A. urinae* infections.⁵ The most common presentation of invasive *A. urinae* infection is endocarditis, with a relatively favorable prognosis.⁷ Patients with invasive *A. urinae* infections are typically older men with underlying urinary tract disease, many with a urinary tract catheter.^{5,7} To date, two spondylodiscitis cases caused by *A. urinae* have been reported, probably associated with endocarditis, and the organism was recovered from blood samples.^{8,9} Although gram-positive vertebral infections are frequently associated with endocarditis when a routine echocardiographic study is performed,¹⁰ the absence of bacteremia suggest that this case is the first isolation of *A. urinae* in disk fluid not associated with endocarditis.

Although some studies suggest favorable outcomes with 4–6 weeks treatment course in uncomplicated vertebral osteomyelitis,¹⁰ we treated our patient for a long period, because there are no treatment studies on aerococcal infections.⁴ The β -lactam-aminoglycoside combination is not entirely clear because, although this combination has been shown to be synergistic in vitro for *A. urinae* isolates, a recent study could only demonstrate this synergy in a few cases.⁴ Hence is importance to distinguish *Aerococcus* from *Enterococcus* in these infections, because bone enterococcal infections are difficult to cure and require combination therapy, including ampicillin–aminoglycoside.

The introduction of MALDI-TOF as a routine part of laboratory work will be very helpful for the identification of *A. urinae* in clinical samples. *A. urinae* is only occasionally isolated in clinical specimens, hence this clinical report of spondylodiscitis due to *A. urinae* isolated from disk fluid helps reveal the pathogenic potential of this bacterium as a cause of bone infection.

Conflict of interest

The authors declare no conflict of interest.

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