3. Grupo de expertos SEIMC para el análisis del diagnóstico microbiológico del COVID-19. Recomendaciones institucionales. Documento de posicionamiento de la SEIMC sobre el diagnóstico microbiológico de COVID-19. Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica. 2020, https://seimc.org/contenidos/documentoscientificos/recomendaciones/seimc-rc-2020-Posicionamiento_SEIMC_diagnostico_microbiologico_COVID19.pdf.
4. Böger B, Fachi MM, Vilhena RO, Cobre AF, Tonin FS, Pontarolo R. Systematic review with meta-analysis of the accuracy of diagnostic tests for COVID-19. Am J Infect Control. 2020, https://linkinghub.elsevier.com/retrieve/pii/S0196655320306933.
5. Porte L, Legarraga P, Vollrath V, Aguilera X, Munita JM, Araos R, et al. Evaluation of novel antigen-based rapid detection test for the diagnosis of SARS-CoV-2 in respiratory samples. Int J Infect Dis. 2020;99:328–33.
6. Weitzel T, Legarraga P, Iruretagoyena M, Pizarro G, Vollrath V, Araos R, et al. Head-to-head comparison of four antigen-based rapid detection tests for the diagnosis of SARS-CoV-2 in respiratory samples. bioRxiv. 2020, https://www.biorxiv.org/content/10.1101/2020.05.27.119255v1.
7. Advice on the use of point-of-care immunodiagnostic tests for COVID-19: scientific brief [consultado 16 Jul 2020]. Disponible en: https://www.who.int/publications-detail-redirect/advice-on-the-use-of-point-of-care-immunodiagnostic-tests-for-covid-19-scientific-brief.

Ester Parada-Ricart[a,b,*], Frederic Gomez-Bertomeu[b,c], Ester Picó-Plana[c] y Montserrat Olona-Cabases[b,d]

[a] *Servicio de Pediatría, Hospital Universitari de Tarragona Joan XXIII, Tarragona, España*
[b] *Facultad Medicina y Cirugía, Universitat Rovira i Virgili, Tarragona, España*
[c] *Área de Microbiología, Laboratorio Clínico ICS Camp de Tarragona-Terres de l'Ebre, Hospital Universitari de Tarragona Joan XXIII, Tarragona, España*
[d] *Unidad de Medicina Preventiva y Epidemiología, Hospital Universitari de Tarragona Joan XXIII, Tarragona, España*

* Autor para correspondencia.
Correo electrónico: eparada.hj23.ics@gencat.cat (E. Parada-Ricart).

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Malignant external otitis by *Aspergillus flavus*

Otitis externa maligna por Aspergillus flavus

Malignant or invasive external otitis (MEO) is a rare disease. It is mainly caused by Pseudomonas aeruginosa and typically affects elderly patients with diabetes mellitus (DM) or other immunocompromised individuals.[1]

Aspergillus MEO frequently involves necrosis of the epithelium and subepithelial tissue of the external auditory canal, bone erosion, and perforation of the tympanic membrane.[2]

An 80-year-old patient with a history of high blood pressure and DM was referred to the ENT department for persistent pain in his left ear for 4 months. At the initial evaluation, only medial otorrhea was found and antibiotic drops were prescribed. The ear pain persisted and extended to the left side of the patient's face and left buccal mucosa. He was treated with carbamazepine and tramadol, with no response. At the next visit, he presented with edema of the external auditory canal, left hearing loss, and a tumefaction at the left temporomandibular joint with normal cranial nerve examination results.

A cerebral magnetic resonance imaging (MRI) was performed, with images suggestive of left MEO, inflammatory changes in the middle ear and deep cervical spaces, and a small abscess in the chewing space, osteomyelitis in the left clivus and left occipital condyle (Fig. 1A).

Treatment with intravenous piperacillin/tazobactam and vancomycin was prescribed. A computed tomography (CT) scan of the skull base showed that soft tissue occupied the external auditory canal and middle ear, and it also showed erosion and dehiscence of the tegmen timpani, mastoid sclerosis, and bone erosion in the left jugular foramen, front and lateral wall of occipital condyle, and carotid duct.

A biopsy of the external auditory canal was conducted. Histologically, granulation tissue by non-specific inflammation was observed. A. flavus were found in culture, with no malignancy findings. A. flavus CMI to voriconazole was 0.25 μg/mL. Antibiotic treatment was simplified to ciprofloxacin and voriconazole, which

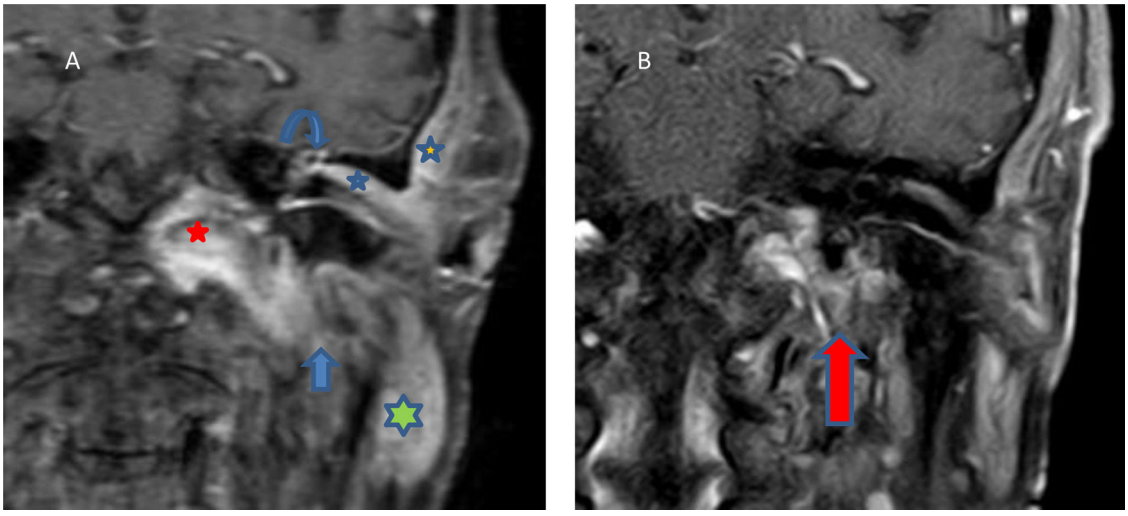

Fig. 1. (A) Coronal T1 sequence, gadolinium. Thickening of the left external auditory canal (blue star) and soft tissues (orange star), parotid gland (green star), temporomandibular joint (straight arrow), occipital condyle (red star) and middle ear (curved arrow)]. (B) Similar section after 18 m. Clear improvement, with disappearance of the occupation of the middle ear and decrease in the volume of the tissues originally affected. Unspecific enhancement at the jugular foramen (red arrow).

was well tolerated. After 2 weeks of hospitalization the patient was discharged with oral voriconazole. At the follow-up visits, he remained afebrile, with complete resolution of the ear pain, but with a mild temporal headache. Treatment with voricozale monotherapy was continued.

A myringotomy and transtympanic drainage in left ear were performed, obtaining retrotympanic mucus. After the procedure, the patient's hearing loss was reversed, and there was complete resolution of the temporal headache. The patient recovered after 6 months of treatment with voriconazole and without the need for surgical debridement. The study was completed 18 months after diagnosis using MRI (Fig. 1B), which showed that the middle ear was no longer occupied and that there was no enhancement of the originally affected tissues.

The usual clinical course of fungal MEO includes painful inflammation of the external ear canal, associated with purulent otorrhea and granulation polyps. Otalgia is the presenting symptom in 75% of cases and purulent otorrhea in 50–80%.[3] Cranial nerve neuropathies are also seen, with particular involvement of the facial nerve.

Histologically, granulation tissue is characterized by nonspecific inflammation with inflammatory cell infiltration and hyperplasia of squamous epithelium.[3]

It can be confused with bacterial MEO that is caused by P. aeruginosa, and as a result, the diagnosis of fungal disease is often delayed. Suspicion of fungal MEO should be raised if recurrence or no response to appropriate antimicrobial therapy.[3]

However, Aspergillus is also frequently isolated from external auditory canal smears and diagnosis of fungal MEO should be based on culture biopsy or histopathologic confirmation.[2,3]

Aspergillus MEO requires long-term antifungal therapy in association with appropriate management of the underlying condition, which is usually DM. In addition, prompt surgical debridement consisting of radical mastoidectomy is required in many cases.[1–3]

Prolonged voriconazole use is an effective treatment for Aspergillus MEO. However, surgical debridement is still necessary for refractory and invasive Aspergillus MEO.[4]

In another series of 14 patients with MEO that was caused by *Aspergillus* spp, only two patients relapsed after 4 and 8-week treatments with voriconazole.[2]

There is no consensus on the antifungal treatment duration; patients usually receive 6–8 weeks of antifungal therapy or more if clinical examination or imaging follow-up supports extending the treatment.[4,5]

Bibliografía

1. Clark JH, Lin FR, Salaria SN, Matthew Stewart C, Francis HW. Temporal bone histopathology case of the month malignant otitis externa caused by *Aspergillus fumigatus*: a case report. Otol Neurotol. 2011;32:e22Ye23.
2. Marchionni E, Parize P, Lefevre A, Vironneau P, Bougnoux ME, Poiree S, et al. *Aspergillus* spp. invasive external otitis: favourable outcome with a medical approach. Clin Microbiol Infect. 2016;22:434–7, http://dx.doi.org/10.1016/j.cmi.2015.12.027.
3. Ho HC, Hsiao SH, Lee CY, Tsai CC. Treatment of refractory *Aspergillus otomycosis* with voriconazole: case series and review. J Laryngol Otol. 2014;128:547–51, http://dx.doi.org/10.1017/S0022215114001273.
4. Moniot M, Montava M, Ranque S, Scemama U, Cassagne C, Arthur V. Malignant *Aspergillus flavus* otitis externa with jugular thrombosis. Emerg Infect Dis. 2019;25:830–2, http://dx.doi.org/10.3201/eid2504.180710.
5. Parize P, Chandesris MO, Lanternier F, PoirEE S, Viard JP, Bienvenu B, et al. Antifungal therapy of *Aspergillus invasive* otitis externa: efficacy of voriconazole and review. Antimicrob Agents Chemother. 2009;53:1048–53, http://dx.doi.org/10.1128/AAC.01220-08.

Sandra Scarleth Mendoza-Lizardo[a], Juan Martinez-San-Millán[b], María del Mar Medina[c], Jesús Fortún[d,*]

[a] *Internal Medicine Department, Alcorcon Foundation University Hospital, Madrid, Spain*
[b] *Radiology Department, Ramon y Cajal University Hospital, Madrid, Spain*
[c] *Ear-Nose & Throat Department, Ramon y Cajal University Hospital, Madrid, Spain*
[d] *Infectious Diseases Department, Ramon y Cajal University Hospital, Madrid, Spain*

* Corresponding author.
E-mail address: fortunabete@gmail.com (J. Fortún).

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First isolation in Spain of *Paracoccus sanguinis* in blood cultures

Primer aislamiento en España de Paracocus sanguinis *en hemocultivos*

The genus *Paracoccus* comprises a group of bacteria that includes more than 40 species, the majority of which are recovered from environmental sources such as soil, mud, sludge, or groundwater.[1] To date, only *Paracoccus yeeii* has been isolated from clinical specimens.[2] A new species, *Paracoccus sanguinis*, was recently identified, with the strains being recovered from blood samples.[3] Few human infections have been attributed to this microorganism. We describe the isolation of this microorganism in the blood of a premature newborn. To our best knowledge, this is the first report on the isolation of *P. sanguinis* in Spain.

The mother gave birth at 32 weeks by elective cesarean section due to multiple gestation. After the delivery, the newborn rapidly developed respiratory distress that required intermittent positive pressure ventilation for three minutes, and she was immediately transferred to the neonatal ICU to receive continuous positive airway pressure. The medical history of the mother was only remarkable for a positive *Streptococcus agalactiae* screening, with no administration of antimicrobial prophylaxis. Physical examination of the newborn was unremarkable, and transfontanellar ultrasound showed no abnormalities. However, chest-X ray revealed a diffuse granular pattern that disappeared on the third day of admission.

At the delivery, blood analysis results were normal except for a high peripheral leucocyte count (19,120/mm^3). A pediatric blood culture (BD BACTEC Peds Plus^{TM}, Becton Dickinson, Sparks, MD) was drawn and sent to the microbiology laboratory for processing. At this time, empirical therapy was initiated with ampicillin (100 mg/kg/6 h) plus gentamicin (4 mg/kg/day). This treatment was stopped after 48 h, because no clinical signs of infection were observed. The sample was inoculated onto the BACTEC FX 40 (Becton Dickinson, Franklin Lakes, NY) monitorization system for culture. On day 4 of incubation, the blood culture was found to be positive. The sample was subcultured in aerobic blood agar (BD Columbia Agar with 5% Sheep Blood, Becton Dickinson, Franklin Lakes, NY) and chocolate agar (BD Chocolate agar, Becton Dickinson). The plates were incubated at 37 °C in an atmosphere of 5% CO_2. Gram staining of the blood cultures exhibited abundant Gram-negative rods and, on the second day of incubation, abundant circular, convex, moist, pale yellow non-hemolytic colonies were observed in