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Scientific letters

Clostridium colicanis bacteraemia in an asthmatic patient diagnosed as acute respiratory infection

Bacteriemia por Clostridium colicanis *en una paciente asmática diagnosticada de infección respiratoria aguda*

Although obligate anaerobes are seldom isolated from patients with bacteraemia, the genus *Clostridium* is in second place behind the genus *Bacteroides* and represents approximately 1% of all positive blood cultures, with *Clostridium perfringens* being the most commonly isolated species. The risk factors associated with its isolation in blood are haemolysis, malignant intestinal neoplasia, inflammatory bowel disease and immunosuppression.[1] In most cases, its clinical meaning is unclear, representing contamination or transient bacteraemia, and its pathogenicity and virulence continue to be a subject of debate. *Clostridium colicanis* is a *Clostridium* species that has been rarely isolated in the blood, the first time in 2008 by Simmon et al., although it was not documented the episode.[2] Thus, we report the first documented case of bacteraemia by this microorganism in an immunocompetent patient diagnosed as acute respiratory infection.

We present the case of a 77-year-old woman with asthma and anticoagulation who was admitted to the Emergency Department due to symptoms of fever of up to 39 °C, chills, malaise, asthenia, dyspnoea, cough and decreased level of consciousness. The abdominal anamnesis was anodyne, and the patient presented no urinary symptoms, heart failure or oedema. The physical examination revealed a blood pressure of 120/63 mm Hg, a temperature of 37.7 °C and an oxygen saturation of 95%. The most noteworthy laboratory data were as follows: leukocytes count of 23.7×10^9/L [4–11] with 89.4% [40–80] granulocytes and 4.6% [20–50] lymphocytes, prothrombin activity of 42% [70–120], international normalised ratio of 1.85 [0.8–1.85], total bilirubin of 1.7 mg/dL [0.2–1.2] and C-reactive protein of 41.9 mg/L [0–5]. Upon her arrival, the patient underwent blood cultures, influenza A/B virus detection using polymerase chain reaction in a nasopharyngeal exudate (negative) and urine culture (negative). Treatment was started with intravenous cefotaxime (1 g/8 h for 10 days) and oral levofloxacin (500 mg/day for 7 days), which resulted in the disappearance of the fever.

The blood cultures were processed in the BD BACTEC™ 9240 system (Becton-Dickinson and Company, NJ, USA). The two anaerobic bottles were positive after 26 h of incubation. Gram staining revealed the presence of long Gram-positive bacilli with straight ends (Fig. 1), which were isolated under anaerobic conditions (Oxoid™ AnaeroGen™ 2.5-L sachet, ThermoFisher Scientific) in Schaedler agar at 48 h. The colonies were round, somewhat irregular, white-grey, catalase-negative measuring approximately 3 mm in diameter. The strain was identified as *C. colicanis* (log score: 2.122) using matrix-assisted laser desorption ionisation time of flight mass spectrometry (MALDI Biotyper® Microflex LT, Bruker Daltonik GmbH), and 16S rRNA sequencing (99%, GenBank accession number FJ957867.1). Antimicrobial susceptibility testing was carried out by the Etest gradient diffusion method (bioMérieux, Marcy létoile, France) using a 0.5 McFarland bacterial suspension and *Brucella* blood agar with hemin and vitamin K1. The plates were incubated anaerobically for 48 h at 35–37 °C. The minimum inhibitory concentration (μg/mL) was interpreted as susceptible according to the recommendations for anaerobic bacteria (EUCAST and CLSI criteria)[3,4]: penicillin (0.016), amoxicillin-clavulanic acid (0.094), cefotaxime (0.015), piperacillin-tazobactam (0.016), clindamycin (2), metronidazole (1), meropenem (0.002) and tetracycline (1.5). After isolating *C. colicanis*, an abdominal ultrasound was requested, which showed no significant abnormalities. The patient progressed favourably and was discharged from the hospital.

C. colicanis is a bacillus measuring approximately $0.9–1.0 \times 3–10$ μm and is Gram-positive, obligate anaerobic, sporulating, nonmotile, and catalase-negative. It can use a considerable number of substrates, producing various acids from glucose, lactose, maltose, mannose, ribose, cellobiose and galactose and can reduce nitrates to nitrites.[5] Its genome consists of a single chromosome (2.6 Mpb) and contains approximately 2160 protein-encoding genes.[6] The colonies measure 3–5 μm in diameter and are round with rippled edges, slightly convex, opaque and white-grey. Its optimal growth temperature is 37–40 °C.

This microorganism was first described after its isolation in the faeces of a male Labrador dog in 2003.[5] The microorganism is closely related phylogenetically with *C. absonum*, *C. baratii* and *Eubacterium multiforme*. *C. colicanis* bacteraemia was first reported in humans in 2008 in a scientific article that studied the genotypic diversity of anaerobic isolates from bloodstream infections.[2] This

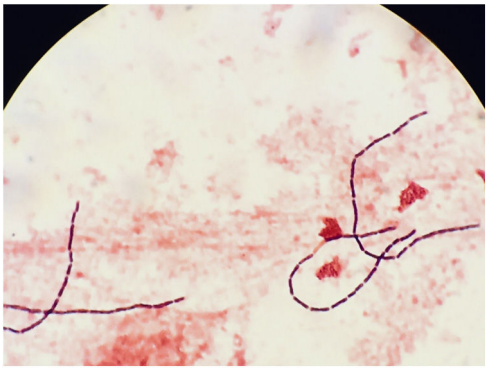

Figure 1. Gram stain of anaerobic blood culture (1000×): **Gram positive** long and straight-ended bacilli.

bacillus was subsequently encountered in 2014, in a study that compared the faecal microbiota of 13 Thai vegetarians and non-vegetarians and was found in a 61-year-old vegetarian who did not eat either yoghourt or eggs but did drink milk.[7] A recent study reported that, in more than half of patients with gastric cancer, the most prevalent microorganisms in the gastric epithelium were bacteria of the species *Fusobacterium nucleatum* (whose pathogenic role in colorectal cancer is well-known) and *C. colicanis*, suggesting a possible contribution of these bacteria in the development or progression of stomach cancer.[8] Our case corresponded to transient bacteraemia in a patient with laboratory data suggesting infection, and to date no signs of gastric or colon neoplasia have been found.

In conclusion, we reported the first documented case of *C. colicanis* bacteraemia in an immunocompetent patient, highlighting the importance of *C. colicanis* as a human pathogen. Further studies are needed to elucidate the pathogenesis and risk factors of *C. colicanis*-related invasive infections such as bacteraemia.

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Conflicts of interest

The authors declare no conflicts of interest.

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Laura Barrado[a,*], Luis Torroba-Álvarez[a,b], Ana Navascués[a,b], Carmen Ezpeleta-Baquedano[a,b]

[a] *Instituto de Investigación Sanitaria de Navarra (IdiSNA), Pamplona, Spain*
[b] *Servicio de Microbiología Clínica, Complejo Hospitalario de Navarra, Pamplona, Spain*

* Corresponding author.
E-mail address: ljbb550@msn.com (L. Barrado).

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Foruncular myiasis. A biting tumor

Miasis foruncular. Un tumor mordiente

Foruncular myiasis is a rare entity in our environment and, as it is usually an imported disease, it is poorly known and suspected in our country. Hence the importance of reporting the very few cases that come across in our health system.

We report the case of a 24-year-old female who presented with a frontal scalp tumor that had grown gradually during the month prior to her admission. She had traveled to Peru a month before and denied fever or other symptoms, except for itching within the lesion. She was assessed by a plastic surgeon showing a lump with a hole which resembled an epidermoid cyst and was scheduled for surgical excision of the mass (Fig. 1a). After incision, a maggot was found (Fig. 1b), and resection was performed without incidents. It was directly sent to the Microbiology Department where it was identified as a *Dermatobia hominis* larva, based on the characteristics of its posterior spiracle (Fig. 1c), with three spiracular slits, each spiracular plate has three split curves directed toward the belly and slightly toward the middle.[1] After extraction, patient was discharged with amoxicilin/clavulanic acid as preemptive treatment of secondary bacterial infection of the wound, presenting no further complications.

Myaisis means invasion of organs and tissues by fly maggots.[2] The most common fly species that cause these affection are *Cordylobia anthropophaga*, original of the African continent, and *D. hominis*, from Central and South America.[3,4] The number of cases of myaisis in countries from continents different to these is increasing due to rise on migration to tropical regions.[5] To our knowledge, there are less than 30 cases of myiasis caused by *D. hominis* reported in Spain.[6]

D. hominis has three forms on its cycle: adult fly, pupa and larva. Only larvae are parasites,[7] and present three different stages. It is interesting that *D. hominis* is unable of biting because of its poorly developed buccal apparatus. Female adult flies capture hematophagous insects of other species and deposit their eggs on them (around 15–20 eggs at a time).[5] As the hematophagous vector bites a mammal, the eggs hatch and larvae fall onto the mammal's skin, where after penetrating and reaching the epidermis, remain growing for 33–41 days. When a 3rd stage larva is under the skin, it fixes its hooks (Fig. 1d) in soft tissue and orientates its respiratory organ, located in its last segment, toward the surface. This respiratory organ is used for species identification,[1,4] based on the morphology of this posterior spiracle (peritrem, button and spiracular slit).[7]