

Carlos Ruiz de Alegría Puig¹
María Macho Díaz²
Jesús Agüero Balbín¹
Jorge Calvo Montes¹

First case of *Arcobacter cryaerophilus* in paediatric age in Spain

¹Hospital Universitario Marqués de Valdecilla. Servicio de Microbiología, Spain

²Servicio de Pediatría, Atención Primaria, Servicio Cántabro de Salud, Santander, Spain.

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Sir,

The genus *Arcobacter*, a producer of gastroenteritis in humans, is one of the so-called emerging clinical pathogens [1]. It is closely related to the genus *Campylobacter* and, as it, has been found to be related to the consumption of vegetables, shellfish, milk, water and meat, both beef and pork as well as poultry [2,3]. *Arcobacter butzleri*, *Arcobacter cryaerophilus* and *Arcobacter skirrowii* are the most related species to clinical pathology, although in the bibliography the most prevalent is *A. butzleri* [4]. In Spain *A. butzleri*, *A. cryaerophilus*, and *A. skirrowii* were detected with an overall prevalence close to 40% and were isolated from (73.3%) shellfish samples, (55%) chicken samples, (42.8%) fresh cow's milk samples, (10%) pork samples, and (5%) beef sample [5]. Molecular and proteomic methods implemented in clinical microbiology laboratories make it significantly easy to identify, which is also necessary by the greater resistance of the genus than *Campylobacter* to antibiotics [6]. The ignorance of the low susceptibility to ciprofloxacin, 51% of the *A. cryaerophilus* strains tested resistant compared with only 13% of *A. butzleri* [7], can make us underestimate the importance of this enteropathogen and fail in treatment in adults. Meanwhile from 25% to 50% of the strains of *Arcobacter* tested in different studies were resistant to macrolides [7,8], which is the usual treatment for diarrhea in Spain for children.

A 12-year-old male who goes to Primary Care consultation referring for two months, coinciding with the confinement derived from the pandemic by COVID-19, liquid bowel movements, in number of 3-4 per day, yellowish, without pathological products; refers to mild intermittent pain prior to emission, without nausea, vomiting or accompanying fever.

Family does not report any symptomatology in the rest of the cohabitants (parents and brother). The family coexists with a domestic cat in perfect condition; they also do not refer to suspicions of having consumed food or beverages suspected of contamination. It was decided to collect stool sample for coproculture and parasite study, and astringent diet and oral rehydration serum on demand is recommended.

From the microbiology laboratory, the negative examination for parasites and positive growth in *Campylobacter* medium (CCDA selective medium, Thermo Fisher Diagnostics, Hemel Hempstead, United Kingdom) was reported after two days under microaerophilia conditions at 37°C. The colonies were identified as *A. cryaerophilus* with a 99.9% confidence level by MALDI-TOF Vitek-MS™ (v3.2 SARAMIS MS-ID, BioMérieux, Marcy-l'Étoile, France) and confirmed by sequencing the 16S rRNA gene (BlastN; Accession number: NR 025905.1). Gradient strips (Etest) were used to determine susceptibility to antibiotics and resulted resistant to cefazolin, erythromycin, amoxicillin-clavulanic and ciprofloxacin. Intermediate for imipenem and sensitive to tetracycline, doxycycline and gentamicin. When reporting the results, given the persistence of the clinic, treatment with doxycycline 100 mg was indicated every 12 hours for 5 days. Four days after the start of treatment the patient clearly improves, by decreasing in the number of bowel movements and increasing in consistency, and on the 10th day of treatment they were completely normalized. Samples were collected for coproculture in the cohabitants and rectal smears in the pet, resulting in negative both coprocultures, parasite study as well as immunochromatography for enteropathogen viruses. In the pet, also, was not identify *A. cryaerophilus* in the rectal smears.

This clinical case serves to alert pediatricians and gastroenterologists to the appearance of this genus of emerging enteropathogens, in which the usual empirical treatment, such as the prescription of quinolones or macrolides, may have no effect, proposing the use of tetracyclines for the treatment of this infection. We would also advise microbiologists not to

Correspondence:
Carlos Ruiz de Alegría Puig
Hospital Universitario Marqués de Valdecilla. Servicio de Microbiología. Avda. Valdecilla s/n
CP: 39008 Santander, España.
Phone: +34 636322882
E-mail: carlosrdap@hotmail.com

incubate *Campylobacter* plates at 42°C but at 37°C, or better between 25 and 30°C since this type of enteropathogens are not thermophilic adapting in this way the protocols of clinical microbiology laboratories to the identification of this type of emerging enteropathogens. And finally, in the face of a case not related to the rural environment, it would remain to be determined the effect that COVID-19 confinement has had on food in Spain, as well as urging the institutions responsible for public health to take greater control measures on the food industries.

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CONFLICTS OF INTEREST

The authors declare that they have no conflict of interest.

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