Discussion

E. histolytica is a protozoan worldwide distributed.[2] In developed countries, institutionalized patients and MSM have a higher risk to become infected.[1,2,4] Our patient was a transgender woman who practiced prostitution as a profession. This could be one explanation for the acquisition route. Her consumption of alcohol through a long period of time could also have influenced the ALA formation.[5]

In non-endemic areas, it is estimated that approximately 50% of patients with symptomatic ALA are misdiagnosed.[8] Since patients present with very unspecific symptoms, a good screening diagnosis is determinant for a correct and prompt treatment approach.

Analysis of stool samples is not reliable in extraintestinal disease, as only 15–33% of them are positive.[2,8] Instead, serology shows up as a reliable marker in the extraintestinal disease, as sensitivity and specificity of ELISA has been reported to range between 80 and 100%.[1–3,5] In the case of our patient, as the serum sample at day 1 was negative the possibility of a false negative result in the first ELISA determination was also considered, therefore, once we had a second sample 7 days later, parallel ELISA determinations were performed, confirming the first negative result and the seroconversion during hospital stay. According to this, it is unknown whether primoinfection occurred in our environment not long ago or in contrast primoinfection occurred years ago in Colombia and the patient stayed colonized until extraintestinal invasion of the parasite occurred. Although in Spain most cases are imported, community acquisition of amoebiasis has also been reported.[9]

Microscopic examination of the abscess content is a very low sensitive technique. The trophozoites are located in the wall of the abscess, therefore they can only be seen when this area is aspirated, although this happens in less than 20% of samples.[7,8,10] In our case, when the fluid arrived in our department, its aspect recalled the typical "anchovy paste" appearance. What is outstanding in this case is that no trophozoites, but cysts were observed under the microscope.

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Emergence of multidrug-resistant *Haemophilus parainfluenzae* in genital specimens: Importance of culture and antimicrobial susceptibility surveillance

Emergencia de Haemophilus parainfluenzae *multiresistente en muestras genitales: importancia del cultivo y vigilancia de sensibilidad antimicrobiana*

Dear Editor:

Haemophilus parainfluenzae is a Gram-negative coccobacillus of the microbiota of the upper respiratory tract. Evidence has recently been found of its role as a pathogen causing non-gonococcal urethritis (NGU), although the pathogenicity is difficult to assess, as it can also be isolated in asymptomatic patients or along with other pathogens.[1,2] The emergence of multidrug resistant (MDR) strains of *H. parainfluenzae* has recently been documented in different countries in Europe.[3–6] As the empirical treatment for urethritis is a third-generation cephalosporin with or without a macrolide, these drugs would not be effective against MDR *H. parainfluenzae*.

We present the isolates of *H. parainfluenzae* obtained from genital samples analysed at Hospital Universitario de Navarra from 2016 to March 2022.

The isolates were identified using MALDI-TOF (Bruker Daltonik, Germany) and the antibiogram was performed using the disc-plate method on Haemophilus Test Medium agar (Becton Dickinson, United States) with 24 h incubation at 37°C in an atmosphere with 5% of CO_2, studying the sensitivity to ampicillin, amoxicillin/clavulanic acid, cefuroxime, cefotaxime, nalidixic acid, ciprofloxacin and cotrimoxazole. We followed the cut-off points established by EUCAST in 2021.[7] Beta-lactamase activity was studied using a nitrocefin disc (cefinase, BD, USA) and/or molecular detection of TEM/ROB enzymes. An MDR strain was defined as resistant to three or more classes of antibiotics.[8]

During the study period, 443 isolates of *H. parainfluenzae* were obtained from genital samples, with or without clinical significance. The mean age of the patients was 34 years (SD: 13 years), and 345 (77.8%) were male.

In the susceptibility study, 13 (2.2%) MDR strains were identified, all in males with a mean age of 32 (SD: 5 years). Table 1 shows how MDR *H. parainfluenzae* has evolved in Navarra.

We found a significant increase in resistance, from not isolating any resistant strains to having 18% MDR strains in seven years. All MDR *H. parainfluenzae* strains were resistant to ampicillin, amoxicillin/clavulanic acid and cefuroxime. One strain also showed resistance to quinolones, five strains to cotrimoxazole, and five

Table 1
Number of *H. parainfluenzae* isolates and MDR strains from genital samples per year of study.

Year	Total number of isolates	MDR isolates	Percentage of MDR isolates (%)
2016	66	0	0
2017	79	1	1.3
2018	84	1	1.2
2019	92	3	3.7
2020	65	0	0
2021	41	5	12.2
First quarter 2022	16	3	18.8

were resistant to all the antibiotics studied. Two types of resistance mechanisms to beta-lactams have been described in this genus: a) enzymatic hydrolysis by TEM-type beta-lactamases, or less frequently ROB-types, a phenotype known as beta-lactamase-positive ampicillin-resistant (BLPAR); and b) resistance due to modifications in penicillin-binding proteins (PBP), beta-lactamase-negative ampicillin-resistant (BLNAR) phenotype.[3,9] In addition, the two mechanisms can coexist in the same strain, also decreasing susceptibility to amoxicillin/clavulanic acid and second-generation cephalosporins. Strains with double resistance mechanism can be detected by positive cefinase test and amoxicillin/clavulanic acid halo diameter $\leq$12 mm.[7] In our study, the resistance to beta-lactams of MDR *H. parainfluenzae* was due in 58.3% to alteration of PBP plus beta-lactamases (66.7% of the cases due to production of TEM) and in 41.7% to PBP alteration only.

In conclusion, as has been reported elsewhere, we have found that in our hospital there has been an increase in MDR *H. parainfluenzae* in genital samples in recent years, mainly in males aged 30–40.[4–6] This increase may be due to the increase in the number of genital samples taken following the opening of the sexually transmitted infection clinic in our department, and the fact that the microorganism is actively looked for in cultures, identifying it and performing a susceptibility study for proper surveillance.

The potential role of *H. parainfluenzae* in urethritis needs to be taken into account, as empirical treatment in monotherapy with ceftriaxone might not be effective against MDR isolates. Therefore, when a patient has symptoms consistent with urethritis, in addition to starting empirical antibiotic therapy, we have to take samples for culture, identify *H. parainfluenzae* as the probable cause of NGU and determine the susceptibility profile, in order to closely monitor the emergence of resistant *H. parainfluenzae* isolates.

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