Sociedad Española de Nefrología

nefrología
Revista de la Sociedad Española de Nefrología
www.revistanefrologia.com

Letter to the Editor

Scombroidosis and bacteriemia in renal trasplant pacient secondary to infection by *Raoultella ornithinolythica*: a case report

Escombroidosis y bacteriemia por *Raoultella ornthinolytica* en paciente trasplantado renal: a propósito de un caso

Dear Editor,

Scombroidosis is a food poisoning caused mainly by the consumption of spoiled fish containing a high concentration of histamine. This occurs because of poor food preservation, which allows the proliferation of bacteria capable of decomposing naturally present L-histidine into histamine. This creates toxic levels of histamine, generating an immediate immune response from histaminergic receptors.[1]

Diagnosis is primarily clinical. Symptoms usually begin less than 60 minutes after ingestion and include diarrhea, nausea or vomiting, pruritus, urticaria, headache, palpitations and dizziness, among others. The involvement is usually mild and self-limited, resolving within 12–48 hours, without the need for treatment.

The pathogens most frequently described as responsible for this condition are gram-negative bacteria belonging to the *Enterobacteriaceae* family, including *Raoultella ornithinolytica*. It is an encapsulated aerobic, facultative anaerobic microorganism found as part of the water flora. However, infections caused by this pathogen in humans are rare and are mainly described in immunocompromised and oncological patients, often related to invasive procedures thanks to its ability to form biofilms.[2,3]

The following is the case of a renal transplant patient who presented with scombroidosis and subsequently developed bacteremia due to *R. ornithinolytica*.

We describe the case of a 59-year-old man with chronic kidney disease secondary to autosomal dominant polycystic kidney disease, renal transplantation in 2022 and immunosuppressive treatment with tacrolimus, mycophenolic acid and prednisone. The patient presented to the emergency department with profuse sweating, dizziness and abundant diarrhea, which began less than an hour after having ingested sardines in apparent poor condition. It is important to note that the other four diners who also consumed the sardines presented the same symptoms, which resolved spontaneously. However, in the case of the patient, the improvement was partial after 24 h, subsequently presenting fever of up to 40 °C at 72 h from the onset of symptoms, at which point he went to the emergency room.

Physical examination revealed sinus tachycardia (120 bpm) and fever of 38 °C, with normal blood pressure (130/70 mmHg). There was no pain and the abdominal examination was unremarkable. Labs showed elevated C-reactive protein up to 191 mg/dl. A stool culture and blood cultures were taken and empirical antibiotic treatment with ceftriaxone and metronidazole was started due to suspicion of intra-abdominal infection. The stool culture was negative and blood cultures showed growth of *R. ornithinolytica* resistant to ampicillin and sensitive to amoxicillin-clavulanic acid, cephalosporins, quinolones and aminoglycosides, with a resistance pattern similar to other cases published in the literature.[4,5]

In view of these results, metronidazole was suspended and ceftriaxone was maintained. The study was completed with abdominal ultrasound, with no findings, and echocardiogram with no evidence of endocarditis. After these measures the patient evolved satisfactorily, with resolution of symptoms and improvement of acute phase reactants. Consequently, antibiotic de-escalation to oral amoxicillin-clavulanic acid was performed for 14 days.

DOI of original article:
https://doi.org/10.1016/j.nefro.2024.11.005.

As mentioned above, *R. ornithinolytica* is a rare pathogen in humans, whose infection occurs more frequently in patients with comorbidities, especially in immunosuppressed and oncologic patients. The clinical spectrum of infections it causes includes urinary tract, gastrointestinal, skin and, to a lesser extent, bacteremia.[6–8]

In addition, histamine poisoning or scombroidosis is an entity that generally causes mild and self-limited clinical manifestations and is not commonly associated with bacteremia. However, there are documented cases in the literature in which, after the ingestion of contaminated fish, bacterial dissemination occurs, triggering infection.[9,10]

This case is of interest because it is the only one of which we are aware of bacteremia due to *R. ornithinolytica* in a renal transplant patient, and it is also the first in which bacteremia due to this germ is described after histaminergic intoxication. We wish to emphasize that scombroidosis is a relatively common but underdiagnosed intoxication in the general population, and renal transplant patients represent a vulnerable population; therefore, early identification and adequate management of this condition is essential to improve the prognosis and reduce complications.

REFERENCES

1. Feng C, Teuber S, Gershwin ME. Histamine (Scombroid) fish poisoning: a comprehensive review. Clin Rev Allergy Immunol. 2016;50:64–9, http://dx.doi.org/10.1007/s12016-015-8467-x.
2. Nevado DL, Delos Santos S, Bastian G, Deyta J, Managuelod EJ, Fortaleza JA, et al. Detection, identification, and inactivation of histamine-forming bacteria in seafood: a mini-review. J Food Prot. 2023;86:100049, http://dx.doi.org/10.1016/j.jfp.2023.100049.
3. Seng P, Boushab BM, Romain F, Gouriet F, Bruder N, Martin C, et al. Emerging role of *Raoultella ornithinolytica* in human infections: a series of cases and review of the literature. Int J Infect Dis. 2016;45:65–71, http://dx.doi.org/10.1016/j.ijid.2016.02.014.
4. Etani T, Kondo S, Yanase T, Morikawa T, Aoki M, Gonda M, et al. Clinical characteristics of *Raoultella ornithinolytica* bacteremia and antimicrobial susceptibility of Raoultellaornithinolytica. J Infect Chemother. 2023;29:554–7, http://dx.doi.org/10.1016/j.jiac.2023.01.023.
5. González-Castro A, Rodríguez-Borregán JC, Campos S, Pérez Canga JL. Bacteriemia relacionada con catéter causada por *Raoultella ornithinolytica*. Rev Esp Anestesiol Reanim. 2018;65:116–8, http://dx.doi.org/10.1016/j.redar.2017.09.007.
6. Sebajang H, Schwenter F, Su SH. *Raoultella ornithinolytica*: emergence and resistance. Infect Drug Resist. 2020;13:1091–104, http://dx.doi.org/10.2147/IDR.S191387.
7. Haruki Y, Hagiya H, Sakuma A, Murase T, Sugiyama T, Kondo S. Clinical characteristics of *Raoultella ornithinolytica* bacteremia: a case series and literature review. J Infect Chemother. 2014;20:589–91, http://dx.doi.org/10.1016/j.jiac.2014.05.005.
8. Chun S, Yun JW, Huh HJ, Lee NY. Clinical characteristics of *Raoultella ornithinolytica* bacteremia. Infection. 2014;43:59–64, http://dx.doi.org/10.1007/s15010-014-0696-z.
9. Lam PW, Salit IE. *Raoultella planticola* bacteremia following consumption of seafood. Can J Infect Dis Med Microbiol. 2014;25, http://dx.doi.org/10.1155/2014/439598.
10. Eskind CC, Doucet CA, Harris BD. Scombroid poisoning with concurrent *Brevundimonas* septicemia: a unique case report and brief literature review. Case Rep Infect Dis. 2019;2019:1–3, http://dx.doi.org/10.1155/2019/2148654.

Sofía López San Román [a,*], Eva López Melero [a], Ángela Rey Cárdenas [a], Nerea Prieto Domínguez [b], Enrique Gruss Vergara [a]

[a] *Servicio de Nefrología, Hospital Universitario Fundación de Alcorcón, Alcorcón, Madrid, Spain*
[b] *Servicio de Medicina Intensiva, Hospital Universitario Fundación de Alcorcón, Alcorcón, Madrid, Spain*

[*] *Corresponding author.*
E-mail address: slsanroman@salud.madrid.org (S.L. San Román).

https://doi.org/10.1016/j.nefroe.2025.02.007