

Eikenella corrodens – Gone with the toothpick

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Introduction

Eikenella corrodens is a facultative anaerobe, non-motile, Gram-negative rod, which is part of the normal flora of the human oral cavity. It's a fastidious and slow-growing organism, which fails to grow on MacConkey agar (MAC). Although it is an uncommon cause of infection, its pathogenic potential has been recognized, being implicated in head and neck, bite wound and respiratory tract infections. It also belongs to the so called "HACEK" group, known to cause subacute endocarditis. *E. corrodens* is usually susceptible to beta-lactam antibiotics.

Case Report

A 53-year-old male was admitted to the Emergency Department with a complaint of colic-like abdominal pain, initially in the left inguinal quadrant (LIQ), then migrating to the periumbilical region, for a month. The pain worsened 2 days prior to admission, accompanied by fever and a loss of appetite.

Emergency Department

Physical examination: tenderness on deep palpation of the LIQ

Blood tests: elevated CRP (247,9 mg/L)

Abdomino-pelvic CT: asymmetric parietal thickening of the colon at the level of the splenic flexure, associated with a marked densification of the adjacent fat, and a linear hyperdense image of about 19 mm surrounded by a heterogenic liquid collection, compatible with a **perforation and a subsequent pericolic abscess**.

Surgery

The patient began empiric antibiotic therapy with **piperacillin/tazobactam**, and an exploratory laparoscopy was performed, during which a wooden toothpick was extracted. The abscess was drained, and pus was sent to the department of Microbiology for analysis.

Microbiology Lab

- The pus was cultured in 2 selective and differential media (MAC and Mannitol salt agar), an enriched one (Columbia blood agar - COS) and in an enrichment broth (thioglycolate broth with resazurin).
- After 3 days of incubation, growth was detected only in COS, in the form of small colonies which pitted the agar. Through the Gram coloration method, it was revealed that the organism in question was a Gram-negative rod.
- The identification of the microorganism was initially attempted with Vitek® 2 system without success, therefore a bacterial strain was sent to an external microbiology laboratory, where through matrix assisted laser desorption ionization-time of flight mass spectrometry it was identified as *E. corrodens*.
- Antimicrobial susceptibility testing was performed evaluating its susceptibility to amoxicillin/clavulanic acid, piperacillin/tazobactam, cefotaxime and it was susceptible to all 3.



(1): *Eikenella corrodens*. Microbiota Research Group of Iran, <https://microbiomology.org/microbe/eikenella/>

(2): Laparoscopic removal of a toothpick from the large intestine by Dr Iraniha. Surgical Oasis Institute, <https://www.surgicaloasis.com/laparoscopic-removal-of-a-toothpick-from-the-large-intestine/>

Clinical Outcome

The patient evolved favorably after surgery and intravenous antibiotic therapy with piperacillin/tazobactam. After hospital discharge, the patient kept oral antibiotic therapy with amoxicillin/clavulanic acid for another week. Three months later, the patient came for a follow-up appointment. There were no symptoms and test results were unremarkable, so he was referred to his primary care physician for routine follow-up.

Conclusion

E. corrodens is not a common cause of abdominal infection. In this case, it was assumed as the causative agent as it was the only microorganism isolated. Consequently, it was hypothesized that the organism was transported through the digestive system via a toothpick, which perforated the colon and then developed an abscess around it. Thus, in perforations or other complications caused by foreign bodies which dwelled in the mouth, *E. corrodens* should always be considered as a possible infection agent.