

A Case of Enterococcus Infective Endocarditis Following Parasitic Gastroenteritis in a Previously Healthy 20-Year-Old Male

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Keywords: Infective Endocarditis, Enterococcus, Cardiology, Gastroenterology

Published: 14 December 2023

Introduction: Infective endocarditis is a life-threatening condition stemming from various bacterial and viral origins, presenting most commonly in hospital settings. The most common bacterial pathogens contributing to the development of infective endocarditis include staphylococci and streptococci, with *Enterococcus faecalis* being the third most common cause (1). *Enterococcus faecalis* is a part of normal gastrointestinal and genitourinary flora but can sometimes extravasate into the bloodstream following damage to the gut mucosa due to trauma, malignancy, or infection (2). The resultant *Enterococcus* bacteremia predisposes patients to infective endocarditis (3). *Enterococcus faecalis* contributes to the development of about 5-10% of infective endocarditis cases, and presents predominantly in elderly males as a subacute illness (1).

Case Report: We present a rare case of a 20-year-old male patient with a history of parasitic gastroenteritis six months prior to presenting with symptoms of infective *Enterococcus faecalis* endocarditis involving the atrial surface of the anterior leaflet of the mitral valve. The gastroenteritis was preceded by a history of travel to Cancun and consumption of octopus, which was suspected to be the source of the gastrointestinal infection.

Conclusion: *Enterococcus faecalis* tends to lead to infective endocarditis and septicemia primarily in elderly males or patients with in-hospital procedures that can introduce the bacteria into the bloodstream (4). Our case illustrates an exception in which a previously healthy, young male experienced gut mucosal damage allowing *Enterococcus faecalis* to invade and spread hematogenously to his heart.

References

1. Liesman RM, Pritt BS, Maleszewski JJ, Patel R. *Laboratory Diagnosis of Infective Endocarditis*. J Clin Microbiol, 2017 Sep. 55(9): pp.2599-2608. doi: 10.1128/JCM.00635-17. Epub 2017 Jun 28. PMID: 28659319; PMCID: PMC5648697. <https://pubmed.ncbi.nlm.nih.gov/28659319/>

2. Dubin K, Pamer EG. *Enterococci and Their Interactions with the Intestinal Microbiome*. Microbiol Spectr, 2014 Nov. **5**(6): pp. 10.1128/microbiolspec.BAD-0014-2016. doi: 10.1128/microbiolspec.BAD-0014-2016. PMID: 29125098; PMCID: PMC5691600.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5691600/>
3. Berge, A., Krantz, A., Östlund, H., Naucmér, P., Rasmussen, M. *The DENOVA score efficiently identifies patients with monomicrobial Enterococcus faecalis bacteremia where echocardiography is not necessary*. Infection, 2019. **47**: pp. 45–50. <https://doi.org/10.1007/s15010-018-1208-3>
4. Megran DW. *Enterococcal endocarditis*. Clin Infect Dis, 1992 Jul. **15**(1): pp. 63-71. doi: 10.1093/clinids/15.1.63. PMID: 1617074. <https://pubmed.ncbi.nlm.nih.gov/1617074/>