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LETTER TO THE EDITOR

Review and analysis of the report: *fungal multivalvular endocarditis*

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Dear Editor:

We have read and analyzed the report on "*Fungal multivalvular endocarditis: literature review and case report*" by Herrera-Salgado et al.[1]. The clinical case and its analysis are interesting, on a clinical entity that is difficult to think of and more complicated to confirm by mycological tests. Most of these cases go unnoticed or are confused with bacterial infections, which are the most frequent. In this particular case, however, the identification was not reached due to the morphology presented in the periodic acid-Schiff (PAS) and Grocott stains, which correspond to blastoconidia or yeasts, without the presence of pseudohyphae, which rules out an infection by the various species of *Candida,* with the exception of *Candida glabrata*, which does not form these structures and which has now been classified as *Nakaseomyces glabratus* by phylogeny studies. Because in this case the agent could not be isolated, it is impossible to confirm the species; however, due to the morphology it presents, it is most likely an infection by *Malassezia* yeasts*,* which are integral parts of the microbiota of many parts of the body[2].

In general, *Malassezia* endocarditis is exceptional and complicated to confirm; the two most involved species are *Malassezia furfur* and *Malassezia restricta*, these as well as others are strict lipophilic, that is, they depend on fat sources, hence the culture media that are required, are special media that incorporate lipids such as Sabouraud + olive oil or Modified Dixon medium; both media are not inside of the series that should be done for cases of endocarditis and are only incorporated when the suspicion is high, so an image, such as the one put in the article, is highly suggestive of this infection[2].

It is worth highlighting the issue with a couple of recent publications, Houhamdi-Hammou et al.[3] and Zhang et al.[4], in the first one highlighting the diagnosis of this type of endocarditis, when conventional cultures are negative (as in the case presented), and the second is an analysis of the literature with 86 cases from 37 studies, where most were premature infants (44.2%), followed by adults (31.4%). The fungemia was caused by *M. furfur* in 79.1% and it should be noted that in just over half of the cases, the infection was obtained from blood from the catheter. The report highlights catheter-related infections, pneumonia, peripheral thromboembolism, endocarditis, meningitis, peritonitis, and disseminated infections. Another source that may be the origin of this is parenteral feeding that is rich in lipids, and that can favor *Malassezia* infections; in this analysis, it was associated in 80.2% of cases. In general, *Malassezia* spp. is sensitive to amphotericin B and to triazoles, particularly voriconazole, but not to echinocandins.

We conclude our commentary by indicating that it is good to see this type of report, because it allows us to analyze the problem of diagnosing fungal endocarditis, particularly when fungi and yeasts cannot be isolated by conventional methods, and incorporate *Malassezia* spp. infections into the possible causes.

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Declaration on the use of artificial intelligence. The authors declare that no generative artificial intelligence was used in the writing or creation of the content of this manuscript.

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