Reviewer's report

Title: Rhinocerebral Mucormycosis Treated with 32 gram Liposomal Amphotericin B and Incomplete Surgery: a case report

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Reviewer: Dr Rodney Adam

Level of interest: A paper whose findings are important to those with closely related research interests

Advice on publication: Accept after revision, which I do not need to see

The authors present a case of rhinocerebral mucormycosis in a diabetic male treated with Ambisome (liposomal amphotericin). The patient had presumptive mucormycosis based on the finding of invasive disease by physical exam and MRI and the identification of a fungus of appropriate morphology by KOH. Generally, histologic proof is required to have a definitive case and histologic documentation is actually lacking in this case. Apparently, the organism did not grow in cultures but that is true in approximately 20% of cases of documented mucormycosis. His treatment included fairly extensive debridement as well as initial therapy with amphotericin B followed by liposomal amphotericin B (Ambisome). The Ambisome was continued for a total of six months followed by three months of fluconazole. Overall, this is a fairly standard case of mucormycosis treated with surgical debridement in addition to amphotericin B, this time in the form of liposomal
amphotericin at a higher dose and for a longer duration than is usually used. After
six months of amphotericin treatment, he was treated with fluconazole for an
additional three months, although it is quite unclear what role the fluconazole played.

Comments:

1. The role of fluconazole is inappropriately over emphasized in this manuscript. First
of all, the agents of mucormycosis are generally resistant to this agent so there is
little theoretical basis for the idea of usefulness. The authors quote three articles
proposing the use of fluconazole in treatment of mucormycosis. These consist of a
total of five cases. Two were reports of single cases. The third is a collection of three
cases submitted in a letter format (Ref. 2). Case 1 had the diagnosis made on the
basis of drainage of nasal contents. This is generally not a definitive diagnosis. In
addition, that patient had steroids discontinued which occasionally can reverse a
case of mucormycosis. Case 3 appeared to have noninvasive sinusitis. Case 2 had
truly invasive mucormycosis; although with an organism that could not be cultured. It
was a fairly indolent case and may have represented a fungus different from the
usual agents of mucormycosis. The revision should remove implications of
significant efficacy of fluconazole in the absence of better documentation. For
example, I do not understand why in a patient who had already been treated with six
months of amphotericin in the liposomal form at a total of 32 grams why an additional
three months of fluconazole was thought to be efficacious.

2. Rhizopus arrhizus is stated as the causative organisms in most cases. That is
somewhat of an overstatement. Although it is the most common organism, it does
not necessarily cause most of the cases of mucormycosis. In addition, the species
name, oryzae, should be used in place of arrhizus.

3. It is generally well written but there a few minor grammatical corrections to be
made.

4. It is difficult to see detail adequately on the MRIs that I had available. The
adequacy of the images should be confirmed. Perhaps a smaller version with a
correspondingly higher number of pixels per inch would be better.

5. Infiltrate is not the best term in describing a radiograph, since it is a pathologic
term.
Competing interests:

None declared.