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ABSTRACT SUBMISSION TITLE: *D2 - Management Strategies and Outcomes in Mucormycosis Infections of the Hand: A Systematic Review*

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Abstract Text:

PURPOSE:

Cutaneous invasive fungal disease such as Mucormycosis is a rare and deadly infection that typically manifests in the craniofacial region of immunocompromised patients or those with significantly poorly controlled diabetes mellitus. Soft tissue involvement of the upper extremity is even more rare, with only a limited number of case reports documenting this pathology, and even less in the literature in the way of concrete management principles. This review focuses on synthesizing prior data in the literature regarding optimal management of this infection in the upper extremity.

METHODS:

For our case report, we followed the SCARE Surgical Case Reports Guidelines - checklist of information to include when writing a surgical case report. Additionally, we followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) reporting guideline. Our qualitative analysis was performed using the Critical Appraisal tools for use in JBI Systematic Reviews for Case Series and Case Report. We searched for studies with the following MeSH terms: "Surgical Debridement", "Wound Debridement", "Reconstructive Surgical Procedures", "Mucormycosis", and "Upper

Extremity” on MEDLINE/PubMed, EMBASE, and Cochrane Library, from inception to December 2025.

RESULTS:

Our initial search yielded a total of 63 studies with 15 studies being included. Additionally, six references were included throughout backward snowballing. Ultimately, a total of 21 studies were included. Our results showed that the frozen section's status did not meaningfully act as a predictor to amputation rate ($p > 0.80$). Our pooled analysis showed an amputation rate with an incidence of 50% - 0.5 (95% CI [0.35; 0.66]; $I^2 = 0\%$), the need for reconstructive surgery found an incidence of 33% - 0.33 (95% CI [0.20; 0.49]; $I^2 = 0\%$, and a mortality rate with an incidence of 0.45 (95% CI [0.29; 0.62]; $I^2 = 0\%$) with 45% of our treated population having an outcome of mortality.

CONCLUSIONS:

Despite aggressive efforts in early debridement, approximately half of the patients in this review required formal amputation to manage their angioinvasive fungal infection; furthermore, more guidance is needed on the use of intraoperative frozen samples to guide margin assessments during resection.

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