Disseminated Fusariosis Presenting with Mucosal Ulcers

Alicia M. Quesnel, M.D. 1, Julia T. Geyer, M.D. 2, Daniel G. Deschler, M.D. 1

1 Department of Otolaryngology - Head and Neck Surgery, Massachusetts Eye and Ear Infirmary and Harvard Medical School
2 Department of Pathology, Massachusetts General Hospital and Harvard Medical School, Boston, MA, U.S.A.

ABSTRACT

A 52 year-old man, with end stage liver disease and neutropenia, was admitted with odynophagia, tongue ulcers, hepatic hydrothorax, and progressive ascites. He had four weeks of progressively worsening odynophagia, and was no longer able to swallow solid foods due to the sore throat. He underwent esophagogastroduodenoscopy (EGD) which showed a normal esophagus with no mucosal lesions. Bone marrow biopsy revealed agranulocytosis, presumably drug-related, as the cause of his neutropenia, and he was treated with granulocyte colony-stimulating-factor (G-CSF). Notably, he had no fevers, epistaxis, rhinorrhea, nasal or facial pain.

On examination, he had two small tender ulcers on his anterior tongue with a yellow base and raised erythematous border, and a similar appearing ulcer on the medial surface of the left arytenoid. Nasal exam revealed an incidental 5 mm lesion on the right anterior nasal septum, consisting of erethematous friable mucosa underlying a crust. Biopsy of the nasal lesion showed invasive fungal rhinitis, though the fungal species could not be identified without further staining and culture. An urgent maxillofacial CT showed no sinus disease or bony erosion.

After consultation with an infectious disease specialist, he was started on liposomal amphotericin and taken emergently to the operating room for debridement that day. After wide local debridement of the nasal septal lesion, frozen section pathology of the margins showed no evidence of invasive fungal disease at the margins. The laryngeal and tongue ulcers were also biopsied. His post operative course was complicated by nasal bleeding in the setting of severe coagulopathy related to liver failure. In the following three days, he had persistent neutropenia despite ongoing granulocyte colony stimulating factor (G-CSF) therapy, and developed large pleural effusions and amphotericin-related renal failure. At that point, a culture from the original nasal biopsy showed *Fusarium* species. Final pathology confirmed fungal morphology and scattered foci of necrosis consistent with invasive fusariosis in both the septectomy specimen (Figures 1a and 1b) and the laryngeal ulcer (Figures 2a and 2b). Given this diagnosis of invasive disseminated fusariosis, ongoing neutropenia, and pre-existent co-morbidities, his prognosis was very poor. He passed away the following day after withdrawing ventilator support per patient’s health care proxy.

DISCUSSION

• *Fusarium* species are a pathogenic mold that may cause a range of infections, from localized to invasive to disseminated, depending primarily upon the immunocompetency of the host.1

• Invasive fusarial rhinosinusitis is clinically indistinguishable from invasive *Aspergillus* or *Mucor* species sinuses. Angioinvasion by the fungus causes microvesSEL thrombosis and results in the hallmark of necrotic mucosa.1, 3

• In this case, the patient had no sino-nasal symptoms, and discovery of the lesion was incidental upon otolaryngologic assessment for odynophagia. In addition, the lesion was not classically necrotic appearing upon gross inspection.

• Initial frozen section identified tissue-invasive and angioinvasive non-pigmented septate fungal hyphae, with acute and right angle branching, and marked variation in caliber ranging from broad to slender. Differential diagnosis based on fungal morphology included Fusarium, Pseudallescheria, Scedosporium and rare subtypes of Aspergillus species.

• The fungal species was identified two days later, when culture data and pathology from other biopsy specimens were available.

• Invasive fusarial rhinitis should be treated with prompt initiation of antifungal treatment and surgical debridement in the immunocompromised patient.4

• Despite aggressive surgical and medical treatment, disseminated fusarial infection is often lethal in the immunocompromised host.

CONCLUSIONS

• Biopsy of laryngeal and other aerodigestive tract ulcers should be considered in the immunocompromised host with possible invasive fusariosis.

• Surgical management of localized invasive fusarial infection, like other invasive fungal infections, requires emergent debridement.

• Despite aggressive surgical and medical treatment, disseminated fusarial infection is often lethal in the immunocompromised host.

REFERENCES


