INTRODUCTION

Invasive Aspergillosis infection of the sphenoid sinus is uncommon and even more rare in immunocompetent hosts. Here, we present a case report of a patient who suffered severe complications from Aspergillosis infection of the sphenoid sinus.

Case Presentation

A 68-year-old Spanish-speaking male with past medical history of diabetes, cirrhosis secondary to alcohol use complicated by esophageal varices and thrombocytopenia, and recent hospitalizations for COVID-19 infection and Salmonella bacteremia complicated by DVT/PE status post inferior vena cava filter placement presents to the hospital with three weeks of right-sided headaches and right-sided eye pain, now with acute-onset diplopia and blurred vision. Exam was notable for a pupil sparing cranial nerve III palsy. CT head demonstrated a right sphenoid sinus opacification and changes consistent with acute sinusitis. Additional imaging to include MRI brain and CT sinus revealed near complete mucosal opacification of the right sphenoid sinus and focal dehiscence of the superior lateral right sphenoid sinus with minimal extension of the adjacent inferior cavernous segment of the right internal carotid artery. He subsequently underwent endoscopic sinus surgery with sphenoidotomy. During his procedure, a right sphenoid fungal ball with surrounding mucopurulence was found; histopathology demonstrated fungus ball fragments consistent with Aspergilloma, although cultures were negative. No evidence of fungal invasion into the soft tissue or bone was identified. The patient was treated with hepatic-dose voriconazole (IV followed by PO) for over sixteen weeks. He unfortunately was re-admitted four months later with complaint of new headache and dizziness and found on MRI to have a cavernous sinus thrombosis and new small frontal and parietal lobe infarcts in the setting of voriconazole non-adherence.

Sphenoid Sinus Aspergillosis with Associated Cranial Nerve III Palsy: A Rare and Potentially Deadly Combination

Nicholas Jennelly, MD; Fazad Mohamed, DO; Gretchen Rickards, MD, MPH
ChristianaCare, Newark, DE

Discussion

Isolated sphenoid sinusitis is a rare disease representing less than 3% of all nasal sinus infections; approximately 15-20% are fungal in origin. Few cases of sphenoid sinus aspergillosis have been documented, with approximately less than 75 published cases in the literature; this condition is even more rare in immunocompetent hosts. The most common symptoms of invasive sphenoid sinusitis include headache, visual impairment, ophthalmoplegia, and facial and orbital pain. Without treatment, morbidity can be as high as 80%. The anatomic proximity of the sphenoid sinus to critical surrounding structures can result in significant complications to include local extension to the cranial nerves, cavernous sinus, and internal carotid artery, as well as meningitis, cerebritis, and cavernous sinus thrombosis. Therefore, early diagnosis and intervention is key to improved patient outcomes. Due to the paucity of cases in immunocompetent hosts, there are no set treatment guidelines. However, surgical intervention is critical and a prolonged course of voriconazole is typical. Unfortunately, once structural damage has occurred, return of normal cranial nerve is atypical and will leave patients with lasting deficits.

Citations

