

¹⁸F-FDG PET/MRI of Rhinosporidiosis of the Upper Airways

Diego Cazzador, MD,* Diego Cecchin, MD,† Roberta Colangeli, MD,*
Filippo Crimi, MD,‡ and Enzo Emanuelli, MD*

Abstract: A 41-year-old man from South Asia presented with a several months' history of unilateral nasal obstruction and bleeding. At nasal endoscopy, two strawberry-like, friable, polypoid masses in the upper airways were detected. The patient's clinical trait was compatible with an infectious disease. ¹⁸F-FDG PET/MRI was performed to evaluate the disease extension. Two lesions occupying the nasal cavity and the nasopharynx, slightly hyperintense in T2-weighted sequences, with intense radiopharmaceutical uptake were evidenced. Endoscopic resection was performed with histopathologic diagnosis of rhinosporidiosis, a chronic granulomatous disease caused by *Rhinosporidium seeberi*. Although rare, rhinosporidiosis should be considered in the differential diagnoses of sinonasal hypermetabolic lesions.

Key Words: rhinosporidiosis, *Rhinosporidium seeberi*, PET, PET/MRI, infection, granulomatous disease

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From the *Unit of Otorhinolaryngology, Department of Neurosciences, †Nuclear Medicine Unit, Department of Medicine, and ‡Radiology Unit, Department of Medicine, University of Padova, Padova, Italy.

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Correspondence to: Diego Cazzador, MD, Unit of Otorhinolaryngology, Department of Neurosciences, University of Padova, Via Giustiniani 2, 35128 Padova, Italy. E-mail: diego.cazzador@unipd.it

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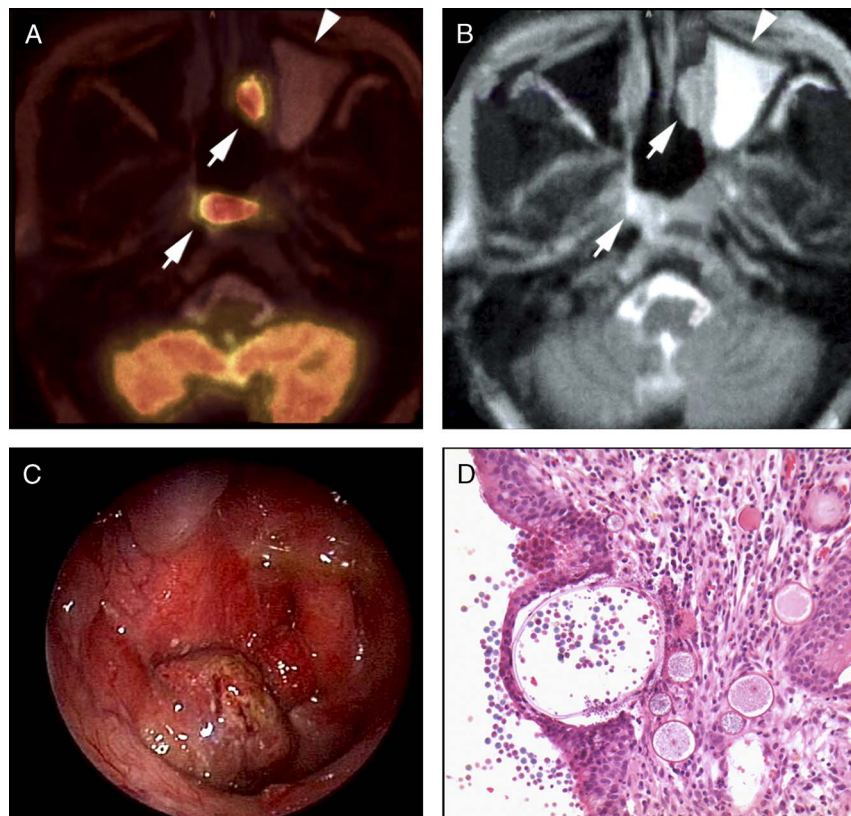


FIGURE 1. A 41-year-old man from South Asia presented to the outpatient clinic with a several months' history of progressive unilateral nasal obstruction, relapsing epistaxis, and purulent rhinorrhea. Endonasal endoscopic evaluation showed two reddish and friable masses within the left nasal fossa and the nasopharynx, with strawberry-like macroscopic appearance. Once the acute rhinosinusitis was solved after appropriate antibiotic treatment, the patient underwent ^{18}F -FDG PET/MRI to evaluate the extension of the disease. The presence of two solid lesions arising from the mucosal lining (A, arrows) of the nasopharynx and the left nasal cavity was confirmed. No evidence of bone involvement was observed. Both showed intense ^{18}F -FDG absorption, with an SUV_{max} between 12.3 and 14. At T2-weighted MRI, the lesions appeared slightly hyperintense, with smooth margins (B, arrows). The left ostiomeatal complex was occluded by the nasal lesion, resulting in a left maxillary sinus mucus retention (A and B, arrowheads). The patient underwent endoscopic resection of the endonasal masses (C) with diode laser, with the aim of removing their base of implant. At histopathologic examination, multiple cysts containing spores were identified in the epithelium, consistent with the diagnosis of rhinosporidiosis (D). Rhinosporidiosis represents a chronic mucocutaneous granulomatous disease determined by *Rhinosporidium seeberi*. The taxonomic classification of *R. seeberi* has been contentious so far, but recent reports defined the organism as an aquatic parasite belonging to the order of Dermocystida and the class of Mesomycetozoea, which is endemic in tropical regions of South Asia.^{1,2} The infection likely occurs through transepithelial penetration of the pathogen.³ The head and neck region is mainly affected, especially concerning the nasal cavities, nasopharynx, larynx, trachea, and conjunctiva. Occasionally, the infection occurs in the skin, lung, liver, brain, bone, genitourinary tract, and anal canal.⁴ The disease typically presents with a slow-growing, strawberry-like polypoid mass, easily bleeding on touch. Histopathologically, sporangia surrounded by endospores at different stages of development in the context of mucosal inflammation are evidenced.⁵ As most chemotherapeutic drugs are ineffective against *Rhinosporidium*, surgical excision is the mainstay of treatment. Surgery is intended to eradicate the lesions with free margins, to reduce the rate of relapsing disease. However, 10% recurrence rate has been reported after surgical treatment alone.⁶ Among anti-infectious agents, long-term treatment with daily 100 mg oral dapsone is currently prescribed as a surgical adjuvant to prevent recurrence.⁷ Very few cases of spontaneous regression have been reported so far.⁸