

Fungal infection in pediatric neurosurgery

Invasive [mycosis](#) of the [central nervous system](#) represent a diverse group of [diseases](#) that have gradually emerged as not only [opportunistic infections](#) in [patients](#) with immune susceptibility due to congenital and acquired deficiency, [immunomodulation](#), solid organ and [stem cell transplantation](#), hematological malignancies, and chronic [steroid](#) use but also in selected risk populations such as low weight preterm infants, patients with [shunted hydrocephalus](#) and [external ventricular drainages](#), [skull base surgery](#), and [head injury](#).

The purpose of a review is to familiarize the pediatric neurosurgeon with the most common mycosis and their clinical scenarios which can be encountered in the clinical practice, with special emphasis on clinical, radiological, and laboratory diagnosis beyond classical microorganism cultures as well as options in medical and surgical treatment given the high incidence of morbidity and mortality associated with these challenging entities.

Caceres et al., conducted an online database review (Ovid, PubMed) gathering relevant English language literature published in the last 20 years with special emphasis on recent breakthroughs in the diagnosis and treatment of invasive mycosis of the CNS as well as reported cases within the pediatric neurosurgical literature and their surgical management.

Fungal agents capable of invading the CNS can behave as aggressive entities with rapid progression manifesting as overwhelming meningoencephalitis with vascular compromise or can lead to space-occupying lesions with abscess formation which require prompt diagnosis by either laboratory identification of the components of these biological agents and their host response or by obtaining tissue specimens for microbiological identification which may not be straightforward due to prolonged culture time.

Following a high degree of suspicion with prompt initiation of antifungal agents and reversal of potential immunosuppressant therapies along with neurosurgical evacuation of intracranial collections or removal of infected hardware (CSF shunts) can lead to more optimistic outcomes of these complex clinical scenarios ¹⁾.

¹⁾

Caceres A, Avila ML, Herrera ML. Fungal infections in pediatric neurosurgery. Childs Nerv Syst. 2018 Aug 18. doi: 10.1007/s00381-018-3942-3. [Epub ahead of print] PubMed PMID: 30121829.

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