OPEN ACCESS Freely available online

Pediatrics & Therapeutics

ISSN: 2161-0665

Commentary

Pediatric Neurotuberculosis: A Challenging Diagnosis and Management

Joseph A Iocono*

Department of Surgery, The University of Kentucky, Markey Cancer Center, Lexington, USA

DESCRIPTION

Pediatric neurotuberculosis is a serious condition that affects the Central Nervous System (CNS) in children under 15 years of age. It is caused by *Mycobacterium tuberculosis* and can lead to severe neurological disabilities or death if not diagnosed and treated promptly. Despite the availability of effective treatment options, the diagnosis and management of pediatric neurotuberculosis remain challenging due to its nonspecific clinical presentation and the need for special diagnostic tools and expertise.

Pediatric neurotuberculosis is a rare but severe manifestation of tuberculosis that affects the CNS. It usually occurs in children who live in areas with high tuberculosis prevalence or have a history of contact with tuberculosis patients. The transmission of the bacteria to the CNS can occur *via* hematogenous spread or direct extension from an adjacent infected site, such as the lungs or lymph nodes. The symptoms of pediatric neurotuberculosis are variable and depend on the site and extent of CNS involvement. Common clinical features include fever, headache, vomiting, altered consciousness, seizures, and focal neurological deficits. However, these symptoms are not specific to neurotuberculosis and can mimic other neurological conditions, making diagnosis challenging.

The diagnosis of pediatric neurotuberculosis requires a high index of suspicion and a combination of clinical, laboratory, radiological, and microbiological investigations. The laboratory tests commonly used include Cerebrospinal Fluid (CSF) analysis, which may show lymphocytic pleocytosis, increased protein, and decreased glucose levels. CSF Acid-Fast Bacilli (AFB) smear and culture can detect *M. tuberculosis* in about 20-50% of cases. However, the sensitivity of these tests is limited, and the diagnosis may require other diagnostic modalities, such as imaging studies like Computed Tomography (CT) or Magnetic Resonance Imaging (MRI), which can identify CNS lesions and their location. In some cases, a brain biopsy may be required for definitive diagnosis.

The management of pediatric neurotuberculosis should involve a multidisciplinary team comprising pediatricians, neurologists, infectious disease specialists, and neurosurgeons. The treatment of pediatric neurotuberculosis is based on the standard tuberculosis treatment regimen, which includes a combination of four drugs-isoniazid, rifampicin, pyrazinamide, and ethambutol-for a period of 6-9 months. The management also involves symptomatic treatment for complications such as seizures and hydrocephalus.

One of the major challenges in the diagnosis and management of pediatric neurotuberculosis is the lack of specific diagnostic criteria and guidelines. The current diagnostic tools are limited in their sensitivity and specificity, and the diagnosis may require invasive procedures such as brain biopsy. The management of pediatric neurotuberculosis also requires a multidisciplinary team approach and specialized expertise, which may not be available in resource-limited settings. In addition, the long duration and potential adverse effects of the tuberculosis treatment regimen can pose challenges in the management of pediatric neurotuberculosis.

To address these challenges, there is a need for further research to improve the diagnostic tools and guidelines for pediatric neurotuberculosis. This includes the development of more sensitive and specific diagnostic tests, such as nucleic acid amplification tests, and the establishment of standardized diagnostic criteria and guidelines. There is also a need for better access to specialized expertise and facilities for the diagnosis and management of pediatric neurotuberculosis in resource-limited settings. In addition, there is a need for improved awareness and education among healthcare providers and the general public regarding the signs and symptoms of pediatric neurotuberculosis.

Correspondence to: Joseph A Iocono, Department of Surgery, The University of Kentucky, Markey Cancer Center, Lexington, USA, E-mail: aioconojoseph@gmail.com

Received: 02-Jan-2023; Manuscript No. PTCR-23-23174; **Editor assigned:** 04-Jan-2023; PreQC. No. PTCR-23-23174 (PQ); **Reviewed:** 18-Jan-2023; QC. No. PTCR-23-23174; **Revised:** 25-Jan-2023; Manuscript No. PTCR-23-23174 (R); **Published:** 03-Feb-2023, DOI: 10.35841/2161-0665.23.13.490.

Citation: Iocono JA (2023) Pediatric Neurotuberculosis: A Challenging Diagnosis and Management. Pediatr Ther. 13:490.