

# Postoperative Meningitis: The Necessity of Establishing a National Comprehensive Program

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Postoperative infections are the most common cause of morbidity and mortality in neurosurgical patients (1-3). Among these infections, postoperative meningitis (POM) is the most serious and dreaded catastrophic complication, requiring immediate recognition and extended antibiotic treatment. POM is associated with increased ICU/hospital length of stay and increased total costs, and it results in different levels of physical and psychological disability (4-6) which urges a proper preventive strategy. Previous studies have described certain risk factors for post-neurosurgical central nervous system (CNS) infections, such as implantation of a foreign body, cerebrospinal fluid (CSF) leakage, previous neurosurgical infection, absence of antibiotic prophylaxis, duration of surgery > 4 hours, interventions involving the nasal sinuses, emergency surgery, and previous radiation therapy (6, 7).

According to the authors' experience, there seems to be a higher rate of POM at their educational institute compared to other reported rates. In addition, higher rates of negative CNS smears and cultures are seen in patients suspected to have POM at this institute than those reported for another center (8). While it is possible that this is due to contamination in operating rooms, which is more common in educational centers, we have also encountered other issues, such as insufficiency in applying and/or monitoring of ICU infection-control protocols, the open model of ICU management, and the use of wide-spectrum prophylactic antibiotics.

Subtle and unusual manifestations, nonspecific CNS characteristics, and the development of aseptic meningitis due to meningeal inflammation after neurosurgical manipulation (9, 10) make the definitive diagnosis of POM challenging. Thus, a final diagnosis of POM is currently based on the clinical judgment of the physician, his/her concept of the most prevalent microflora isolated in the

ward, and the patient's response to empirical antibiotic therapy. Timely administration of antibiotics, adjunctive steroid therapy, and the optimization of antibiotic delivery to the CSF are essential in the management of POM (11, 12).

The authors believe that a national comprehensive guideline designed through a multidisciplinary approach, which considers proper prevention, definitive diagnosis, sufficient treatment, precise prognosis, and good rehabilitation, is indispensable. This program should clarify the changing patterns of POM, as well as its causative microorganisms and their resistance to different antibiotic regimens. We propose the creation of a national POM electronic databank in collaboration with scientific associations of neurosurgeons, infectionists, and intensivists.

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