



## Post-Surgical Infection in Neurosurgical Management: Bangladesh Perspective

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Infection is an old enemy of the surgeons. Every surgery has risk of infection. Before the invention of the “magic bullet” it was very much dreaded and much deadly. For neurosurgery, infection after surgery is of great consequence. The central nervous system is protected by natural physiological mechanisms. However, surgery exposes these areas, by breach of the barriers, to infection. The result of this infection ranges from prolonged hospital stay to neurological deficit, increased cost even death. Infection in neurosurgical patients increases burden to the families, hospitals, caregivers and the country.

The infection of the neurosurgical patients can be divided into cranial, spinal and peripheral nerve surgery. The cranial infections can be meningitis, encephalitis and ventriculitis. This spectrum is progressively difficult to treat and ultimately life threatening for the patient. Other infections to the skin results in surgical site infection, bone flap infection resulting in osteomyelitis of the bone, infection to the ventriculoperitoneal shunt system and brain abscess. In spinal neurosurgery, infection ranges from surgical site infection to discitis, myelitis, hardware infection and spinal abscess. The peripheral nervous system is also prone to infection. These are surgical site infection, abscess formation and failure of anastomosis and/or graft. Children and the elderly are much prone to infection. Malnutrition and other co-morbidities also make them susceptible to infection.

Prevention of post-operative infection is very difficult and it requires a unified team effort. Every member of the team has to show 'zero tolerance' to infection. The members of the operating room have to follow proper 'rituals'. This starts from hand

washing, clothing, and dressing up for OT, and also maintaining strict to and fro movement of personnel.

The instruments need to be properly sterilized. The autoclave machine needs to be well maintained. Chemical sterilizing agents need to be in proper concentration and for adequate duration after preparation. When ethylene oxide is used, the packaging and proper handling has to be ensured. All instrument needs to have sterilization marker tape as a safeguard.

The operation room and the adjacent area have to be properly cleansed with antiseptic solution regularly. It is a good practice to fumigate the OT area at regular intervals. The post-operative ward needs to be clean and also adhere to strict discipline regarding disinfection. No patients, other than post-operative cases, should be admitted in this area. Also the post-operative patients need to be shifted out as soon as possible.

The hospital authority has a role to play in this regard. They have to generate and implement the rules needed. For example, visitor control, removal of waste and used drapes from OT and so on. A team of committed persons should be brought together in this regard. This may comprise of the hospital staffs, representative from departments of surgery, microbiology, anesthesiologists, nursing staff, cleaners and sterilizing department staffs.

Infection in neurosurgical patients are difficult to treat. If we can control the infection of neurosurgery patients, this will result in decreased morbidity, decreased treatment cost and reduced hospital stay. Then we can serve more patients. They can return to their families and their job

sooner. Thus they can contribute to the development of the country.

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