Case Reports and Reviews

Case Report

Case Study of an Ommaya Reservoir

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Abstract

Oncology patient with Ommaya reservoir shows documentation of "sleeping" for past 5 hours and "snoring". Further examination finds dilated pupils, unresponsiveness, and upon pulling back the bed covers reveals decerebrate rigidity. Diagnosis was increased intracranial pressure. Immediate intervention was accessing the Ommaya resulting in the patient becoming awakened and alert.

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Introduction

The Ommaya Reservoir was developed by Pakistani neurosurgeon Ayub Khan Ommaya in 1963 to deliver antifungal medicines directly to the cerebrospinal fluid [1]. The Ommaya reservoir is made up of two parts, 1) a small container that's shaped like a dome that is placed under the scalp and is about the size of a quarter and 2) a catheter that's placed in the brain's ventricle. CSF circulates within this space and chemotherapy and other medications like antibiotics, antifungals, antineoplastic, and analgesics can be administered through this catheter [2]. Besides an avenue for delivering medications the Ommaya reservoir can be used to take CSF samples for analysis (infection, abnormal cells), to measure pressure in the brain, and to drain excess CSF. The use of the reservoir to treat neoplastic meningitis occurs but prognosis remains poor [3]. However, the reservoir shows promise in treating brain cancers [4]. Complication incidence overall is 10% [5] and includes bleeding, catheter obstruction (9.1%) [6], failure of the reservoir, infection (8%) [2], and neurological impairment. The most significant complication is infection due to the reservoirs direct access to the nervous system. Approximately 60% of infections occur within 10 days of accessing the device [7]. The most common manifestations are cellulitis, meningitis, or meningoencephalitis.

Case study

A 54-year-old female, diagnosed with lymphoma and brain metastasis was admitted to the hospital for lethargy, decreased level of consciousness and inability to eat. She has an Ommaya reservoir and a chest port catheter. On morning rounds it was noticed on her flow sheet that she was "sleeping" and "snoring" for the past 5 hours (somewhat unusual on a busy oncology unit). Further immediate assessment indicated unresponsiveness, dilated pupils and upon removing the bed covers a decerebrate posturing. Immediate accessing of the Ommaya with a Huber needle under sterile conditions ensued using a 10 mL syringe. Upon connecting the syringe to the end of the huber line the plunger of the syringe blew off hitting the wall behind the patient and CSF began to drain from the barrel. The patient regained consciousness shortly and asked "Where is my husband, did he go to lunch already?". A sterile sample of CSF was sent to the laboratory for analysis and Emergency physician was notified who saw the patient within 5 minutes. The patient was reassured we would go look for her husband.

Conclusion

In patients with an Ommaya reservoir always look for patterns of ICP indicators like sleeping at long intervals and snoring, and include in your assessment turning back the bed covers to assess for neuronal signs like decerebrate posturing. Immediate intervention is required to relieve pressure on the brain.

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