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Tension Pneumocephalus
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Introduction

Tension pneumocephalus was first described as the presence of air within the cranial vault; tension pneumocephalus occurs when air within the cranial vault becomes trapped and causes increased intracranial pressure (ICP). Symptoms due to increased ICP from air can include vomiting, headache, mental status changes, and altered neurologic function (Simmons & Luks, 2013). However, tension pneumocephalus can occur postoperatively or in any other patient with raised ICP, including those with nontraumatic ICP elevations (Daly & May, 2004).

Pathophysiology

Tension pneumocephalus is a rare but deadly condition that can occur after head trauma, neurosurgical procedures, or other conditions that cause increased ICP. When air enters the cranial vault and becomes trapped, it can cause a rapid rise in ICP, leading to symptoms such as headache, vomiting, altered mental status, and in severe cases, death. Imaging studies such as contrast CT scan or MRI may be used to diagnose pneumocephalus, and management includes prompt intervention to reduce ICP and prevent herniation (Sheptak, 2005).

Nursing Implications

Tension pneumocephalus, though a very rare occurrence, can be a deadly condition that requires prompt intervention. Nurses need to be aware of the signs and symptoms of pneumocephalus, including changes in mental status, altered neurologic function, and headache, so that prompt intervention can be initiated (Sheptak, 2005). Early recognition and intervention can help prevent herniation and improve outcomes (Sheptak, 2005).

References


Conclusion

Tension pneumocephalus is a rare but deadly neurological complication. If it is not diagnosed and treated promptly, it is very important to remember that early detection is key. Nurses need to be alert for subtle changes in a patient's condition and be prepared to assess for similar signs as well as educate the patient and family to the patient's condition. As such, various signs of neurogenic compression should be noted at all times. The patient should be monitored closely for decreased mental status, and the nurse should be prepared to intervene quickly to prevent herniation (Sheptak, 2005).