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Subarachnoid Hemorrhage caused by a Ruptured Aneurysm

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Introduction

- Subarachnoid hemorrhage is a type of stroke that can be caused by a ruptured aneurysm, arteriovenous malformation, or trauma, and it can be life threatening. It is a hemorrhage that appears within the subarachnoid space.

- Researchers have found that one-third of the patients will survive this type of stroke (Serrone, J.).

- Many Patients experience symptoms of a sudden onset of a severe headache.

- Treatment is key to pursue good outcomes with this kind of stroke.

- Treatment that will be included will be strict blood pressure parameters to keep good blood flow to the brain.

- Endovascular coiling the aneurysm or surgically clipping the aneurysm to stop the bleeding, relieving pressure that is occurring.

- The only way to prevent this condition from happening is identify potential problems with the brain.

Pathophysiology

- Subarachnoid hemorrhage rupture commonly occurs from uncontrolled high blood pressure, heavy alcohol abuse, smoking, cocaine, and inherited conditions that cause weakening of blood vessels.

- Other causes of a subarachnoid hemorrhage include head trauma and brain infections.

- Subarachnoid hemmorhages may be spontaneous or traumatic.

- Saccular aneurysms occur at the bifurcation of the large to medium size intracranial arteries (Bekelis, K.).

- When a brain aneurysm ruptures, it causes bleeding into the compartment that surrounds the brain, the subarachnoid space, and is therefore known as a subarachnoid hemorrhage.

- Blood can get into the cerebral spinal fluid which can cause an increase pressure on the brain.

- Blood from the torn aneurysm can cause blood to get in the cerebral spinal fluid circulation. This can lead to fluid build up around the brain known as hydrocephalus.

- Hydrocephalus is abnormal build up of cerebral spinal fluid in the ventricles of the brain.

- The blood can irritate, and damage brain skills, which can lead to problems with body functions and skills.

Pathophysiologically Significant

- Health care providers need to be aware of the risk factors, pathophysiology, diagnostic criteria, and early treatment for subarachnoid hemorrhages.

- By knowing the pathophysiology and signs and symptoms of a subarachnoid hemorrhage health care providers can provide diagnostics and detection of the aneurysm to help maintain effective tissue perfusion in the brain.

- Time is brain, early detection and treatment will lead to better outcomes and quality of life.

Implications for Nursing

Diagnostics will include:

- The patient will undergo a CT scan to help identify the source of the aneurysms rupture as well as hydrocephalus.

- Lumbar Puncture

- Cerebral Angiography, which will define the source of the bleed.

- The nurse will provide care that will maintain effective tissue perfusion and prevent further complications.

- Further complications may include, re-bleeding, hydrocephalus, intraventricular hemorrhage, increased intracranial pressure, seizures, and cerebral vasospasm.

- Medical management includes:

  • Surgical management- which includes clipping and coiling the aneurysm (Bekelis, K.).
  • Giving a calcium channel blocker known as Nimodipine to prevent vasospams in the brain (Hockel, K.).
  • Controlling blood pressure
  • Triple H Therapy- Hemodilution, Hypertension, and Hyperemia.
  • Performing transcranial Dopplers daily to check for spasms.

Conclusion

- A subarachnoid hemorrhage should be suspected in somebody with a sudden onset of a severe headache.

- The only way to prevent this condition from happening is identify potential problems with the brain.

- Prognosis of a subarachnoid hemorrhage is better with early management.

- Treatment is not guaranteed some people do not make it even after the most aggressive medical treatment.

- The early you seek emergent care the better your chances are for surviving.

- Time is Brain!

References


