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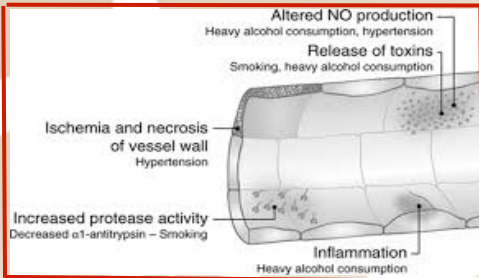
Subarachnoid Hemorrhage caused by a Ruptured Aneurysm

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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 pressing on the brain by lowering blood pressure as well as placing either a ventricular drain or lumbar drain, and preventing vasospasm from occurring by Triple H therapy and giving the patient specific medications.



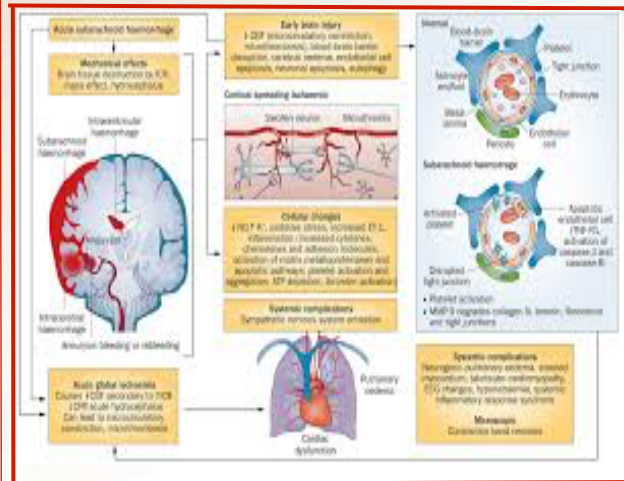
(Image retrieved from stroke.ahajournals.org)

Signs and Symptoms

- Generally appear 10-20 days prior to rupture include a headache, dizziness, orbital pain, difficulty speaking, and visual loss (Cohen-Gadol, A).
- Ruptured brain aneurysms can cause symptoms such as a headache that is described as the worst headache of your life, loss of consciousness, nausea, vomiting, stiff neck, blurred vision, change in mental status, weakness, numbness, seizure, and ptosis.

Pathophysiology

- Subarachnoid hemorrhage 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 traumas and brain infections.
- Subarachnoid hemorrhages 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.



(Image retrieved from nature.com)

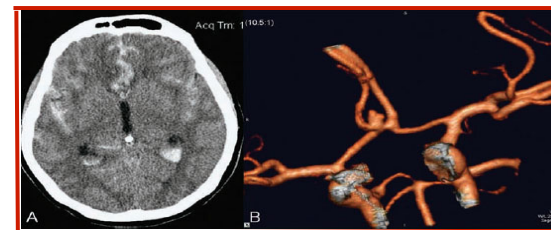
Pathophysiological Significance

- 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 vasospasms in the brain (Hockel, K).
 - Controlling blood pressure
 - Triple H Therapy- Hemodilution, Hypertension, and Hypervolemia.
 - Performing Transcranial Dopplers daily to check for spasms.



(Image retrieved from radiologykey.com)

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 re for surviving.
- Time is Brain!

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