Vasculasure





Optimizing the treatment and prevention of cerebral vasospasm

WHAT IS VASOSPASM?

When an aneurysm ruptures, blood begins to build up in the space between the brain and the skull. After surgeons operate to stop the bleeding, patients face 2-3 weeks of recovery in the ICU. During this period, patients risk developing vasospasm—the spontaneous narrowing of cerebral blood vessels caused by inflammation and tissue damage—which can cut off blood flow to the brain (Mascia, 2009). The resulting damage can lead to long-term disability or even death (Shah, 2023).



30,000

estimated aSAH patient in the U.S. every year (Ziu, 2023)



(Ziu, 2023)



(Bracard, 2008)

vasospasm die

median cost burden for aSAH patients in the U.S. (Thompson, 2022)

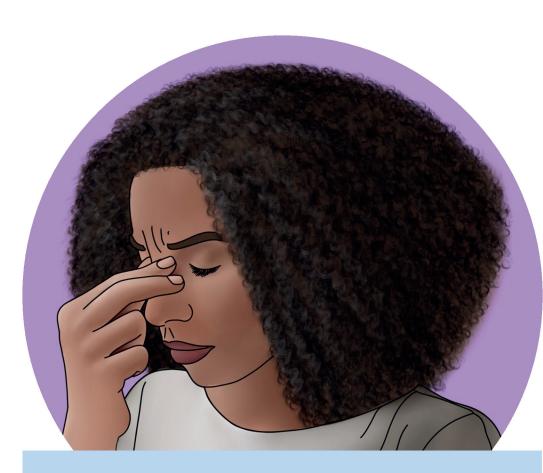
THE NEED

Neurocritical care providers need a method of minimizing ischemic damage from vasospasm in subarachnoid hemorrhage patients in order to improve survival rates and prevent longterm decline in quality of life.

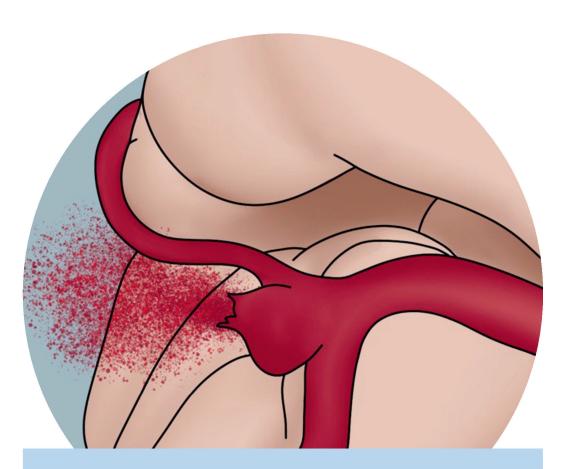
USER NEEDS

- adequate dilation of cerebral blood vessels
- easily implementation into clinical workflow
 - no required transport out of the neuro-ICU

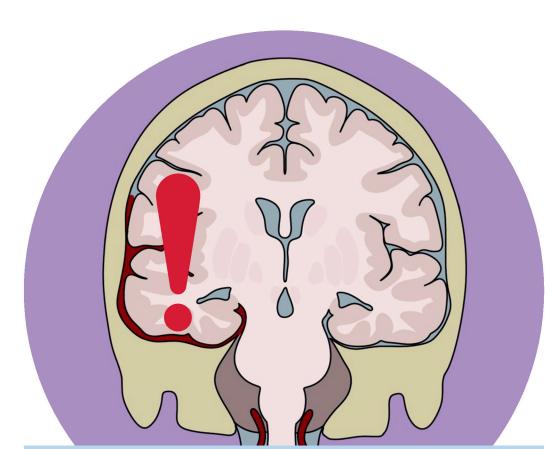
PATIENT JOURNEY



This is Laura. One day, Laura starts experiencing the worst headache of her life.



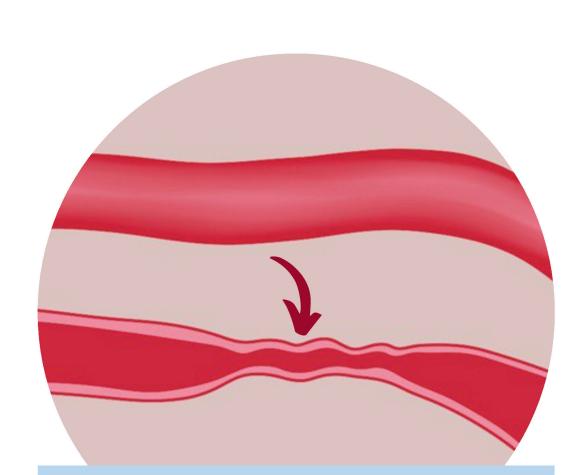
She is rushed to the hospital, where it is found that she has a ruptured aneurysm of one of her cerebral blood vessels.



Blood begins to collect between the brain and the skull, a phenomena called subarachnoid hemorrhage.



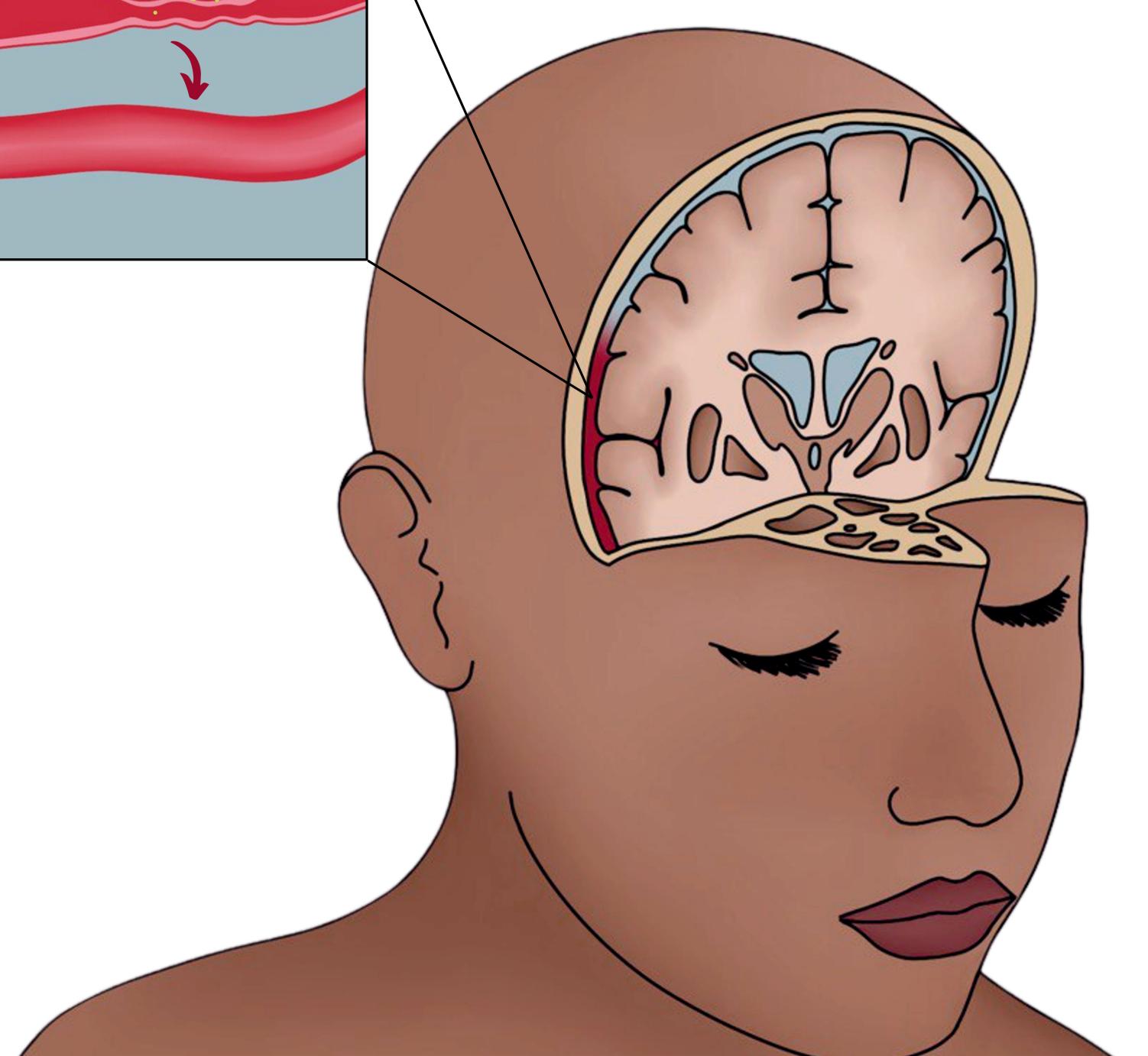
Laura undergoes emergency surgery to seal the aneurysm and spends the next three weeks recovering in the ICU.



While recovering, Laura is at risk of developing vasospasm, cutting off vital blood flow to parts of her brain.

OUR APPROACH

VasculaSure is a drug delivery system that continuously releases a vasodilating agent directly into the ventricles of the brain over the course of three weeks. Once released into the cerebrospinal fluid, the vasodilator circulates around the brain and exerts therapeutic effects on blood vessels in spasm, restoring healthy blood flow to brain tissue.



UNLIKE OTHER OPTIONS...

- VasculaSure acts locally, bypassing the systemic side effects seen in other routes of drug delivery.
- The VasculaSure system can be implemented through an existing step of patient treatment.
 - VasculaSure acts continuously and does not require multiple administrations.

1. Mascia L, Del Sorbo L. Diagnosis and management of vasospasm. F1000 Med Rep. 2009;1:33. Published 2009 Apr 29. doi:10.3410/M1-33 2. Shah VA, Gonzalez LF, Suarez JI. Therapies for Delayed Cerebral Ischemia in Aneurysmal Subarachnoid Hemorrhage. Neurocrit Care. 2023;39(1):36-50. doi:10.1007/s12028-023-01747-9 3. Ziu, E. et. al. (2023, June 1). Subarachnoid hemorrhage. StatPearls - NCBI Bookshelf.

4. Bracard S, Schmitt E. Vasospasm and delayed consequences. Interv Neuroradiol. 2008;14 Suppl 1(Suppl 1):17-22. doi:10.1177/15910199080140S105 5. Thompson, J. C. et. al (2022). Economic and Humanistic Burden of Cerebral Vasospasm and Its Related Complications after Aneurysmal Subarachnoid Hemorrhage: A Systematic Literature Review. Neurology and Therapy, 11(2), 597-620.