

UNC surgeons pioneer new approach to aneurysms: Go through the nose

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(PhysOrg.com) -- Dr. Anand V. Germanwala and Dr. Adam M. Zanation have published a paper describing a surgery they performed that is believed to be the first reported clipping of a ruptured brain aneurysm through a patient's nose.

During breakfast one Sunday, Alfreda Cordero was struck suddenly and violently by the worst [headache](#) she had ever experienced. A day later, she would make medical history as the first person to have a [ruptured brain aneurysm](#) treated through the nose.

Cordero's surgeons at UNC Health Care and the University of North Carolina at Chapel Hill School of Medicine, Dr. Anand V. Germanwala and Dr. Adam M. Zanation, report on the innovative surgery in a paper published online ahead of print in the journal *Neurosurgery*. It will also be published later in the March 2011 print edition of the journal.

"It really pushes the entire field forward," said Zanation. "This isn't going to change all [aneurysm](#) treatment tomorrow, but it gets the ball rolling so we may provide an additional option to future aneurysm treatment."

Treating a ruptured aneurysm often requires sawing through the skull and performing open brain surgery. But in Cordero's case the surgical team saw an opportunity to try a different approach. Instead of navigating around her brain, they threaded their tiny equipment through her nose to reach two aneurysms sitting just behind her nasal cavity.

Two years later the aneurysms haven't returned, and doctors consider the surgery a success.

“We’ve proved that it can be done safely, it can be done effectively, and we can treat multiple aneurysms,” said Germanwala. “It is something we can certainly consider in the future.”

Aneurysms — small bulges in the blood vessels in the brain — occur in about one in 50 people. Many remain symptomless, and relatively harmless, for years. But if one bursts, as one of Cordero’s two aneurysms did during breakfast that day, the situation quickly turns deadly. About 40-50 percent of patients with a burst aneurysm die as a result.

Doctors typically weigh two options for treating a ruptured aneurysm. The most permanent fix is to insert a small metal clip at the neck of the aneurysm to cut off its blood supply. But “clipping” requires open brain surgery, a maximally invasive option with a longer recovery.

The second option is to thread tiny platinum coils into the aneurysm, causing the blood to clot. “Coiling” isn’t as invasive as open brain surgery, but it can be less permanent.

The location and orientation of Cordero’s aneurysms made her a perfect candidate for a new approach: “clipping” the aneurysms through the nose.

“It’s taking the best from the coiling procedure, because it’s minimally invasive, and taking the best from the clipping procedure, because it’s more permanent—and putting them together,” Germanwala said.

It’s also putting together the right mix of surgical skills. Zanation, a head and neck surgeon, navigated Cordero’s nasal cavity. Germanwala, a neurosurgeon, completed the team and together the two surgeons

performed the surgery.

Although no one had performed this operation on an aneurysm before, the team had used a similar procedure to remove brain tumors several hundreds of times. Using the approach to treat a ruptured aneurysm was a logical next step given their combined experience.

Still, everyone was astounded when Cordero was up and walking mere hours after the surgery. “Her recovery was remarkable,” said Germanwala. Today, she remains healthy.

Although they’re celebrating the success of the pioneering [surgery](#), the doctors caution that the approach isn’t right for every aneurysm. The size, orientation, and location of an aneurysm determine the safest treatment option, and more study is needed to know when it’s best to go through the nose. “We’re at the very beginning stage right now,” said Germanwala. “I think people have opened their eyes to what this technique affords.”

“Our first step was a big step,” added Zanation. “I hope that other surgeons will continue to build on our work.”

Provided by University of North Carolina at Chapel Hill School of Medicine

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