

**GIUSEPPE**

I'm Giuseppe Lanzino, a neurosurgeon at the Mayo Clinic in Rochester, Minnesota. And I specialize in the treatment of patients with brain aneurysms. We will be talking today about aneurysmal subarachnoid hemorrhage from rupture of a brain aneurysm. This condition is one of the most complex-- if not the most complex-- acute condition that we encountered in medicine.

**LANZINO:**

In a patient with a ruptured brain aneurysm, the health care team has to face difficult and important issues associated with neurological complications, but also, many systemic complications and issues related to a prolonged ICU and hospital stay, in some cases. Because of these issues, rupture of an intracranial aneurysm traditionally was often associated with a poor prognosis. And among survivors, many patients were left with important physical and cognitive disability.

In the past few decades, there have been several improvements in critical care, treatment modalities for the ruptured aneurysms, and better understanding of all the processes surrounding these disorders. All these improvements have led to the recognition that many patients who suffer a rupture of a brain aneurysm indeed have the potential for a full physical and cognitive recovery.

Treatment of this condition involves a highly specialized team composed by individuals with different background and subspecializations, which is available in a few selected centers. This collaboration and highly specialized team is available here at Mayo Clinic in Rochester. And recently, we have published and documented excellent outcomes in a very high percentage of known selected patients admitted after aneurysm rupture. And this work has been published in 2015 in the *Journal of Neurosurgery*.

**ALEJANDRO**

Hello, my name is Alejandro Rabinstein. I'm a neurologist and intensivist at Mayo Clinic. I work closely with Dr.

**RABINSTEIN:**

Giuseppe Lanzino, who's the neurosurgeon that you just heard from. And I want to emphasize a few points about this very challenging condition, aneurysmal subarachnoid hemorrhage. It used to be-- and that is the way I learned when I was in medical school-- that when an aneurysm ruptured in the brain and the patient had subarachnoid hemorrhage, it was often considered that that was a sentence, either to death or permanent disability.

That is no longer the case. Advances in medical and surgical care have allowed for a significant proportion of patients with subarachnoid hemorrhage to achieve excellent recovery. In fact, as we have published, over six out of 10 patients with subarachnoid hemorrhage from a ruptured aneurysm can recover excellent function, with minimal or no symptoms at six months under our care. And we are very proud of that.

We achieved these outcomes thanks to a multi-disciplinary approach to the disease. The multidisciplinary team includes neurosurgeons, neurologists with a particular expertise on the disease, and the care is conducted in a dedicated neuroscience ICU with specialized nurses who have training and interest the care of this disease. And this is fundamental to optimize outcomes for any patient with this condition.

And it is primarily about clinical expertise. There are other ICUs that rely very heavily on technology-- invasive monitoring devices and different type of machines-- to do the work that we try to do based on our clinical expertise. We try to wake patients up as soon as they can be awakened, and we try to rely on our examination, first and foremost-- old fashioned, but it works better.

We try to consolidate the care of these very complicated cases in a few hands, because that is the way that we enhance our expertise. We have a very reasonable volume of cases, and high volumes of cases of subarachnoid hemorrhage has been associated with better outcomes. You need to see a lot of these cases to understand them well and be able to deliver the best care to the patients.

And first and foremost, we set a very high bar on ourselves to try to achieve the best possible outcome for all the patients with this condition. This is very important. We are not satisfied with the patient who was comatose in the ICU, and then can walk, can talk, but is not back to the previous level of functioning. We want to return patients to the full function that they had before the hemorrhage.

That is why we not only deliver expert care in the hospital, but we follow the patients very, very closely in the outpatient setting. I just came from seeing a patient that I had in the hospital a couple of months ago. And this is my fifth follow-up with her, trying to improve her residual symptoms as much as possible. And she's getting better.

We are always glad to receive transfers for subarachnoid hemorrhage. We think that we do a very good job in these cases. We want to help as many patients as possible with this condition. And we think we are very well-prepared to do so. Thank you.