

# neurobulletin



Dandy Netherlands Neurosurgical Club



## Case: Worst headache of your life

A 54-year-old male with a history of hypertension presents to the emergency department with a sudden-onset severe headache described as "the worst of his life," followed by transient loss of consciousness. On arrival, he is drowsy (GCS 13), with mild neck stiffness but no focal neurological deficits. A non-contrast CT scan reveals diffuse subarachnoid hemorrhage, predominantly in the anterior interhemispheric fissure. CT angiography identifies a 6 mm saccular aneurysm at the anterior communicating artery. The patient undergoes digital subtraction angiography (DSA), confirming the aneurysm's morphology. Given the rupture risk, the multidisciplinary team opts for microsurgical clipping. A right pterional craniotomy is performed, and the aneurysm is successfully clipped without complications. Postoperatively, the patient is monitored in the neuro-ICU. Vasospasm prophylaxis is initiated, and he remains neurologically intact. A follow-up angiogram shows complete aneurysm occlusion. He is discharged with antihypertensive therapy and scheduled for outpatient follow-up.

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## NEUROSURGEONS THROUGH HISTORY

### --JUHA HERNESNIEMI--

"Simple, clean, and fast neurosurgery while preserving normal anatomy." This mantra defined the career of Juha Hernesniemi (born 1947), a world-renowned Finnish neurosurgeon celebrated for his exceptional skill in cerebrovascular and skull base surgery. Over a career spanning decades, he made profound contributions to neurosurgery, particularly in the management of intracranial aneurysms, arteriovenous malformations (AVMs), and complex brain tumors. His meticulous technique, emphasis on efficiency, and unwavering commitment to teaching have left a lasting mark on neurosurgical practice worldwide.

### Early Years and Training

Born on October 18, 1947, in a small Finnish village, Hernesniemi developed a strong work ethic early on, briefly working at a car factory in Germany—a role that honed his fine motor skills. His formative education took place in Ruovesi, where an inspiring local physician encouraged him to pursue medicine.

In 1966, he began his medical studies at the University of Zurich, a pivotal period that introduced him to the world of neuroscience and research. There, he encountered two of neurosurgery's greatest figures: Professor Hugo Krakenbühl and M. Gazi Yaşargil, the pioneer of microsurgery. Watching Yaşargil perform intricate vascular procedures ignited Hernesniemi's passion for neurosurgery and set the course for his future career.

After completing medical school, he returned to Finland to train in neurosurgery at Töölö Hospital before taking on the role of assistant chief physician at Kuopio University Hospital.

### Contributions to neurosurgery

Hernesniemi was a driving force in the advancement of microsurgical techniques, refining his philosophy through decades of hands-on experience. Over 50 years, he performed an astounding 16,000+ surgeries, each reinforcing his core surgical principles:

- Simplicity – Avoid unnecessary complexity in approach and execution.
- Cleanliness – Maintain precise, bloodless, and controlled surgical fields.
- Speed – Operate efficiently without compromising safety.
- Anatomic Preservation – Prioritize the protection of normal structures.

Beyond his technical mastery, Hernesniemi cultivated a unique surgical environment, emphasizing not just the approach and instruments but also elements like music in the operating room, believing it enhanced focus and rhythm during procedures.

His legacy extends far beyond the operating table—through his commitment to education and mentorship, he has shaped generations of neurosurgeons worldwide.

He became the Professor and Chair of Helsinki Neurosurgery between 1997 and 2015. In this period, he realized that live presence and Open Access video were ideal to portray these philosophies and minimalistic approach. With this idea, the Helsinki Live Demonstration Course in Operative Microneurosurgery came to fruition. This quickly became one of the most highly regarded courses in the neurosurgical community. Through these courses, participants witnessed complex, life-changing surgeries firsthand. Many internationally prominent microneurosurgeons, Heads and Professors included, came to see him. These live demonstrations started in 2001 and continued up until the pandemic.

### Globalizing neurosurgery

Recognizing that neurosurgical education should not be limited to Helsinki, Hernesniemi extended his philosophy worldwide. Through international workshops, visiting professorships, and collaborations, he helped shape neurosurgical practice across Europe, Asia, and South America. His philosophy of microsurgical minimalism (stripping procedures down to their most essential elements while maintaining safety and precision) became a guiding principle for countless surgeons.

Recognizing the need for accessible neurosurgical training, he focused on expanding education beyond high-income countries. He conducted live demonstrations in resource-limited settings, helping young neurosurgeons refine their skills despite technological constraints. His impact was particularly profound in China, where he helped establish advanced neurosurgical programs, and in South America, where he mentored surgeons seeking to improve cerebrovascular care in their own hospitals.

### Beacon of inspiration

His commitment to spreading knowledge and improving global neurosurgical standards has earned him international recognition and respect. Even as neurosurgery evolved with newer imaging and robotic assistance, Hernesniemi remained an advocate for the human touch in surgery, emphasizing that technology should support—but never replace—the fundamental principles of patient-centered surgical care.

Even after retiring from his position in Helsinki, Hernesniemi has continued to operate and teach in various countries, including China and South America. His dedication to neurosurgery remains unwavering, as he continues to inspire the next generation of surgeons with his expertise, discipline, and surgical philosophy. His legacy in neurosurgical education and cerebrovascular surgery ensures that his influence will be felt for years to come.



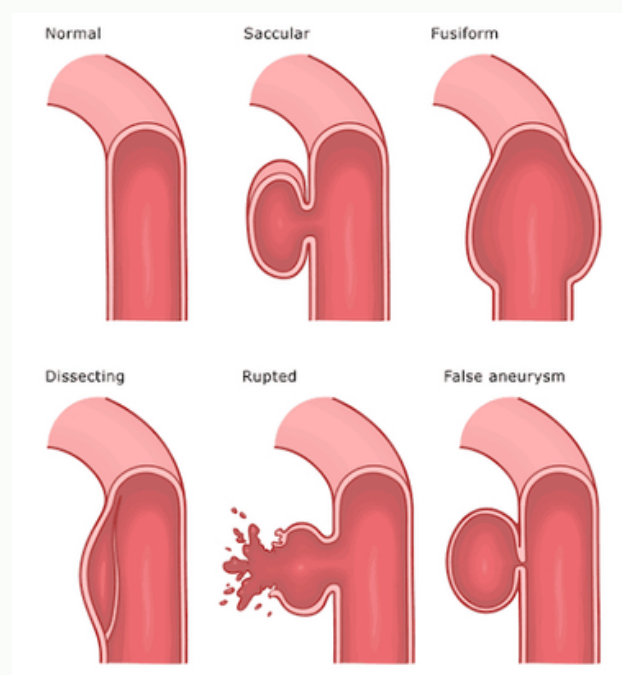
**WRITTEN BY: PAWAN RAVINDRAN**

## CEREBRAL ANEURYSMS

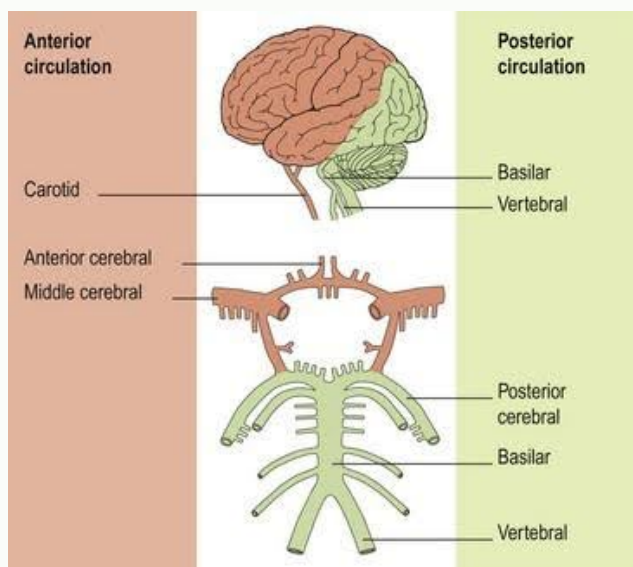
The word “aneurysm” is derived from the Greek word “aneurysma” (ἀνεύρυσμα), meaning “a widening” or “a dilation”. An intracranial aneurysm (IA) is a ballooning rising from a weakened part in the wall of a blood vessel in the brain. An IA has a risk of rupturing, which leads to a subarachnoid hemorrhage (SAH). This rupturing comes with high mortality and morbidity, where 25% of cases die within the first day. Worldwide aneurysms occur in 3.2% of the population, and in 10/100.000 the aneurysm ruptures. An aneurysm that hasn't ruptured mostly doesn't give any symptoms. Only if the aneurysm is big enough to affect nearby structures, patients can present with headaches, pain around the eye, vision problems or numbness of one side of the face. Patients suffering an aneurysmal SAH (sSAH) will complain often of a sudden severe headache, loss of consciousness, stroke-like symptoms and specific symptoms depending on the affected blood vessel. Risk factors for developing an IA are being female; smoking; older age; a positive family history; high blood pressure; high cholesterol; a comorbidity of connective tissue disease/diabetes/polycystic kidney disease; or drug (ab)use. Interestingly the Finnish and Japanese are more likely to rupture an IA than other populations, even though the prevalence of IA's is similar. For this reason, neurosurgeons in these countries are generally very experienced in treating IA's.

### Neurosurgery vs. Endovascular Treatment

We used to treat aneurysms with neurosurgical clipping mostly. This is an invasive treatment, where a metal clip is carefully placed over the “balloon” like aneurysm bulging, which occludes the aneurysm immediately. Later we learned that there was an endovascular approach as well. Interventional radiologists can treat IA's in a less invasive way, which involves e.g. placing metal coils inside the aneurysm. But how do we decide which treatment to use for which case?

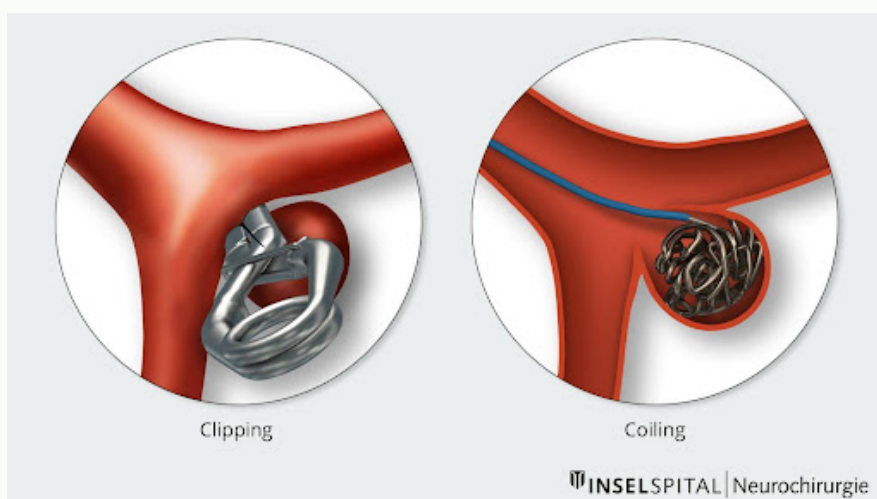


Firstly, there are different types of aneurysms, considering the anatomical location, shape, size and configuration. The four main types are saccular aneurysms (known as the “berry aneurysm”), fusiform aneurysm (that bulges on all sides of the artery), dissecting (when a tear occurs in the intima layer, causing blood to collect in subadventitial space) and a mycotic aneurysm (caused by infection). Saccular aneurysms are mostly seen, accounting for about 90% of all IA's. They are commonly located in the anterior circulation, at the junction between the anterior communicating artery (ACOM) and the anterior cerebral artery (ACA), the bifurcation of the middle cerebral artery (MCA), and the junction between the posterior communicating artery (PCOM) and the internal carotid artery (ICA). About 15% occur in the posterior circulation, commonly at the basilar apex, at the junction between the basilar artery and the superior cerebellar (SCA) or anterior inferior cerebellar artery (AICA), and the junction of the vertebral and posterior inferior cerebellar arteries (PICA).



Surgical clipping was, as far as we know, performed for the first time in 1937. Up until the 1960's it was performed under the naked eye which required considerable exposure of the brain, causing significant morbidity. Nowadays it is performed under the microscope, leading to much better results. Also more approaches, other than the frontotemporal, were introduced to decrease the distance of the surgical opening to the aneurysm. These include the pterional, lateral suboccipital (LSO), lateral subtemporal and orbitozygomatic approaches. Also, the clip in itself evolved into a variety of chapes, sizes, materials and fenestrations. An ideal case for surgical clipping is a young patient with a small aneurysm located in the anterior circulation. In these cases the occlusion rates are around 95% (long term effect). Since the less invasive method of interventional radiological coiling was introduced, surgical clipping is now frequently performed for giant aneurysms with more complex anatomy, decreasing the occlusion rate to about 87% (on CT imaging, published in 2020). As clipping is an invasive procedure it comes with a significant risk of inadequate exposure, injury to the brain matter, vessel injury leading to hemorrhage and vessel occlusion causing ischemia. The big advantage of clipping however, is the low rates of residual and recurrent aneurysms.

Endovascular coiling for IA's was approved by the FDA in 1995. Just like clips, coils have evolved over time, offering softer and smaller coils which can treat smaller aneurysms that have high risk of rupturing. Larger coils were developed for larger aneurysms to be able to use fewer coils. Also, the materials used for coils were researched and changed over time to improve embolization and occlusion rates. Initially large, complex, wide-necked and fusiform aneurysms were untreatable via coiling. For this, advent stent-assisted coiling was invented. The major advantage of endovascular coiling is the accessibility to the posterior circulation aneurysms. Due to their deep location and close relation to important structures like the brain stem, they are hard to treat surgically. They are less common than in the anterior circulation (accounting for 8-15%), but their risk of rupturing is higher. An ideal patient for endovascular coiling is a middle-aged or elderly patient with a small, narrow-necked saccular aneurysm in the posterior circulation, especially if they have medical comorbidities that make surgery riskier. In the case of advent stenting the patient should be able to tolerate dual antiplatelet therapy (DAPT).



### 3D Exoscope

I visited the Helsinki University Hospital (HUS) to learn more about aneurysm surgery. During my visit I learned about the exoscope, a new technology replacing the microscope, that provides huge benefits for the ergonomics of the neurosurgeons. HUS is one of the only centers that uses this technique. I had the honor of contributing to articles that demonstrated the exoscope's effectiveness, showing it to be non-inferior to the conventional microscope.

The integration of visual enhancement technology has revolutionized neurosurgery. Since its introduction in the late 1950s, the operating microscope (OM) has become the gold standard for intraoperative visualization, providing superior illumination and magnification of surgical anatomy. However, despite its advantages, the OM presents several limitations, including restricted operative mobility, limited accessibility, and high costs. Additionally, its use is confined to the operating and assisting surgeons, requiring them to maintain a fixed, often uncomfortable posture, which can contribute to intraoperative fatigue.

To address these challenges while retaining the benefits of the OM, the extracorporeal telescope (exoscope) was developed. This system consists of a scope positioned outside the surgical field, projecting a high-definition (HD) image onto a two-dimensional (2D) or three-dimensional (3D)

high-resolution monitor. The introduction of the 3D exoscope system further improved visualization by preserving stereopsis, enhancing depth perception.

The increasing adoption of 3D exoscopes in various neurosurgical procedures, including cranial and spinal surgeries, has demonstrated their safety and effectiveness as an alternative to the OM. Clinical studies suggest that the 3D exoscope maintains excellent illumination and magnification while offering superior ergonomic benefits, reducing surgeon fatigue. Additionally, it enhances visualization for the entire surgical team, making it a valuable educational tool for trainees.



**WRITTEN BY:**  
**CAMILLE GALLÉ**

## MEET THE BOARD: PAWAN RAVINDRAN

Every month, we will highlight another member of our board, so you get to know us better. This month you can read about Dandy's treasurer, Max van Helsdingen

### Getting to Know Max

#### How old are you and how old do you feel?

I am 24 years old and I actually feel like the age I am.

#### Which faculty are you in, and what year are you in? And what do you like most about your faculty?

My faculty is the medicine faculty at the Rijksuniversiteit Groningen, what I like about my faculty are the teaching professors!

#### Where are you from, and where do you currently live?

I am from Wassenaar and I currently live in Groningen!

### Neurosurgical questions

#### What sparked your interest in neurosurgery?

My interest in neurosurgery was sparked during the first OR I attended, which was the removal of a brain tumor! Although I always thought the brain was really fascinating.

#### What is your favourite brain structure and why?

Favorite brain structure might be the thalamus because of it's important relay function.



#### If you could share one neurosurgical fact with everyone in the Netherlands, what would it be?

It's not really a neurosurgical fact but what most fascinated me during that first OR was the fact that the brains just doesn't have any pain receptors.

#### What do you enjoy the most about being treasurer of Dandy?

As treasurer I am also involved in planning activities, which I really enjoy!

#### What would you want to specialize in as a neurosurgeon?

OAs a neurosurgeon I would love to specialize in neuro-oncology.

## INTERVIEW WITH MAX- CONT'D

### Off the Cuff Questions

**What's one place (real or fictional) that you've always wanted to visit?**

I've always wanted to visit Tokyo, because of it's futuristic technology and the very different culture!

**What's your go-to study playlist?**  
a playlist called 'best piano music'

**What did you want to be when you were growing up?**

I've always wanted to be a doctor so I'm headed in the right direction haha!

### Rapid Fire Round 🔥

**Hot or cold?**

Cold

**Car or bike?**

Bike

**Night shifts or day shifts?**

Day shifts

**Apples or bananas?**

Bananas

Excited to meet the rest of the board?  
Subscribe to the newsletter and tune in every month!



## DANDY IS LOOKING FOR NEW BOARD MEMBERS!

Are you interested in organizing neurosurgical activities for interested med students in the Netherlands? Dandy Netherlands is looking for new board members! Below you find a description of all available positions.

### PRESIDENT

**5 hrs/week**  
**Prepare meetings**  
**Preside meetings**  
**Organise activities and assign tasks**  
**Contact for the entire board**  
**Join meetings of the activities committee**

### VICE-PRESIDENT

**4 hrs/week**  
**Prepare meetings**  
**Preside meetings when the president is absent**  
**Monitor progress of other board members and assist when necessary**  
**Join meetings of the promotion committee and help with promotion material**  
**Organize Drive, Calendar and Trello w/ secretary**

### SECRETARY

**4 hrs/week**  
**Write monthly newsletter**  
**Take minutes during meetings**  
**Take minutes during activities**  
**Administrative tasks**  
**Help with promotion material**

### TREASURER

**3 hrs/week**  
**Responsible for board finances**  
**Join meetings of the activities committee**  
**Organise activities**  
**Make yearly planning for all activities**  
**Maintain a baseline quality for all activities**

## DANDY IS LOOKING FOR NEW BOARD MEMBERS!

### COMMISSIONER OF ACQUISITIONS

**2.5 hrs/week**

**Responsible for all promotion**

**Preside meetings of the**

**promotion committee**

**Make a promotion plan for all**

**activities**

**Weekly posts**

### Promotion committee:

- vice-president
- secretary
- commissioner of acquisitions
- commissioner of creative IT

### Activities committee:

- president
- treasurer
- commissioner of activities
- commissioner of external relations

### COMMISSIONER OF EXTERNAL RELATIONS

**2.5 hrs/week**

**Responsible for all external**

**communication, including**

**lecturers**

**Join meeting of the activities**

**committee**

**Organise activities**

**Assist secretary with newsletter**

### COMMISSIONER OF CREATIVE IT

**3.5 hrs/week**

**Responsible for the website**

**Assist commissioner of**

**acquisitions with social media**

**Take minutes at meetings of the**

**promotion committee**

**Responsible for merchandise**

**ARE YOU INTERESTED IN A BOARD POSITION? SEND YOUR CV AND MOTIVATION LETTER TO [APPLY@DANDYNETHERLANDS.NL](mailto:APPLY@DANDYNETHERLANDS.NL)**

**QUESTIONS ABOUT JOINING THE BOARD? SEND US AN EMAIL ON [INFO@DANDYNETHERLANDS.NL](mailto:INFO@DANDYNETHERLANDS.NL) OR SEND US A DM ON INSTAGRAM!**

## RECAP: JANETTA PROCEDURE

At the end of February, we organized a hybrid lecture given by Dr. Han, a neurosurgeon from the UMC Utrecht hospital. This event took place in the hospital of Utrecht where  $\pm$  15 students joined live and another  $\pm$  15 students joined online. He explained all the ins and outs of the neurosurgical treatment options for patients suffering from a neurovascular compression syndrome.

He explained that the Janetta procedure is a surgical technique used to treat neurovascular compression syndromes, where a blood vessel compresses a cranial nerve, leading to conditions like trigeminal neuralgia, facial spasm, and glossopharyngeal neuralgia. Trigeminal neuralgia is the most common, affecting primarily women over 50, causing sudden, severe, and brief facial pain. Facial spasm, often starting with small eye spasms, affects mainly women over 40. Dr. Han was unsure as to why this specific patient group is affected mostly. Glossopharyngeal neuralgia causes sharp throat pain, triggered by swallowing or coughing.

A rarer condition is neuralgia of the intermediate nerve, which causes intense ear pain without clear neurological deficits, often misdiagnosed by specialists. These conditions are commonly caused by nerve compression due to an abnormal blood vessel, though tumors, aneurysms, or multiple sclerosis can also play a role.

The Janetta procedure was presented through videos of real surgeries, during which Dr. Han went into detail about the surgery steps and anatomy. It involves moving the blood vessel and isolating it from the nerve with a small piece of material, like Teflon, preventing further compression. Neuronavigation, as presented on slides with interesting visuals, is used during surgery to minimize bone removal, and cerebrospinal fluid is drained to lower cerebellum pressure. While precise, there is a risk of bleeding, especially at the vein of Dandy.

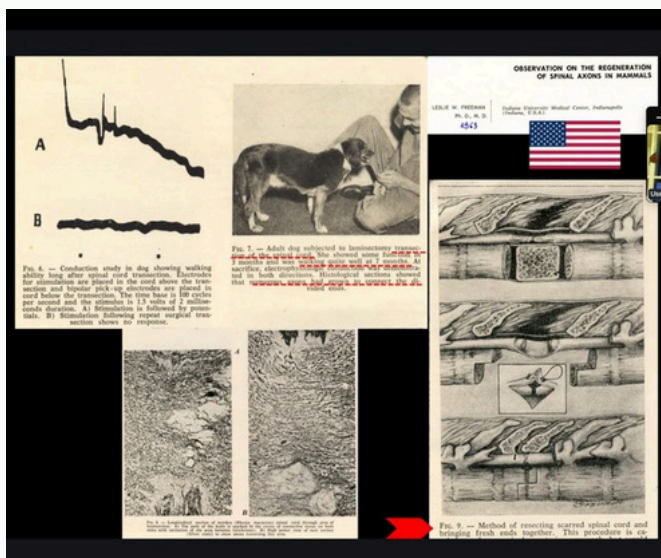
The Janetta procedure is the gold standard treatment, often leading to near-complete symptom remission. Alternatives, such as Gamma Knife, can cause nerve damage, and the older Dandy procedure is rarely used due to severe side effects. There are no better surgical alternatives, and future treatments will likely focus on less invasive methods. The procedure offers valuable insight into neurosurgery for students interested in the field.



**WRITTEN BY:**  
**CAMILLE GALLÉ**

## RECAP: TRANSPLANTATION NEUROSURGERY

At the beginning of March, VCMS Rotterdam and Dandy Netherlands joined forces to organize a special event for all interested students. Dr. Canavero, a neurosurgeon from Italy, came online to speak about transplantation neurosurgery, a new area of neurosurgical research that focuses on the treatment of tethered spinal cords and the role that transplantations can play in this.



While the field of transplantation neurosurgery is quite recent and unknown, many steps have already been made. Dr. Canavero explained that there are 2 main problems: the mechanical attachment of spinal cords or neurological regions to the recipient; and “rebooting” the connection. For the latter they found a possible solution: PEG. PEG, or polyethylene glycol, is a substance that has been shown to restore axolemmal membranes. Back in the 1980s, this substance was first introduced and used to restore motor and sensory nerves in animals. According to Dr. Canavero, PEG shows promising results to eventually be used for the treatments of humans.

So what about the mechanical attachment? Currently, nobody is walking around with someone else’s head, and this doesn’t seem to happen anytime soon. However, Canavero explained, new research shows promising results. He told the audience about some interesting studies, where dogs were operated on to create a tethered spinal cord. After reattachment (and after administering PEG), the dogs were able to run, walk and jump again. Similar studies are said to be done on monkeys and even cadavers. What the exact results are of these experiments, is still unknown.

The topics Dr. Canavero is fascinated by are considered controversial by the wider public, and he explained how he has received backlash for his research. Nevertheless, he is determined to keep working towards better results with PEG, and he is excited to eventually move the research along towards (living) humans.

While the field of transplantation neurosurgery is exciting, promising and to some even truly futuristic, many steps still have to be made and we are nowhere near clinical trials. That being said, it was extremely interesting to hear about something that I thought only happened in movies.

We would like to thank VCMS Rotterdam for the nice collaboration for this lecture.



**WRITTEN BY:  
REBECCA VISCHJAGER**

## FUTURE EVENTS

In the next few months, we have a few activities lined up for you. Keep an eye on our socials for the latest news surrounding our lectures.

### April 29th - OR tour

17.30, Amsterdam (ACIBADEM IMC)

Never been in the OR, or never been able to appreciate all that the OR has to offer? On April 29th, Dr. Abu Saris will take you on a hybrid tour of the OR and tell you something about the materials and machines used. Besides that, ACIBADEM is able to offer you some food and drinks to enjoy the masterclass even more!

This is a hybrid activity.

#### NEXT ISSUE

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**A DEEP-DIVE INTO THE  
HISTORY OF NEUROSURGERY**

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**NEW BRAINTEASER**

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**RECAP OF PAST EVENTS**

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**FUTURE EVENTS**

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**AND MORE!**

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