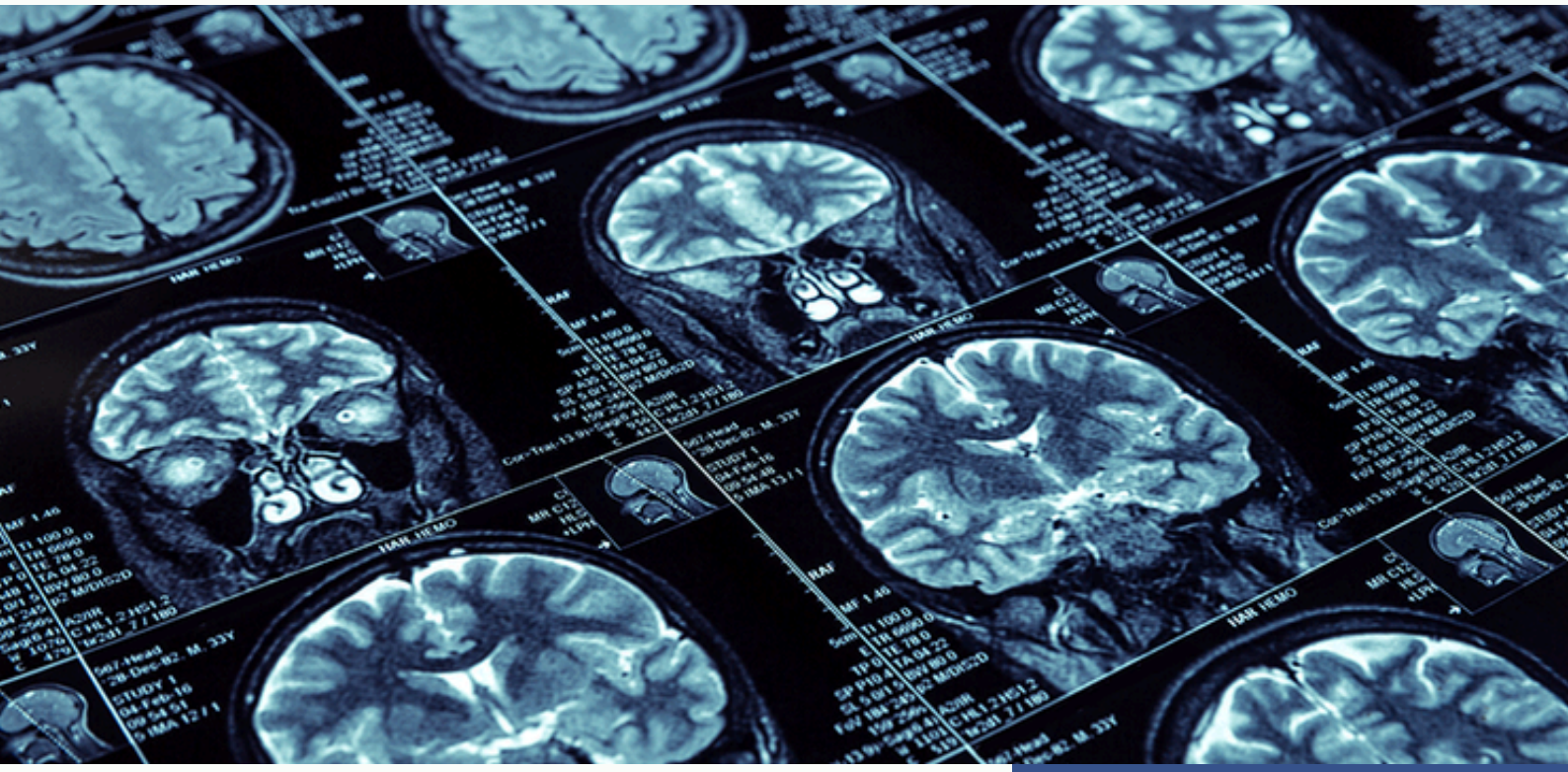
neurobulletin

Dandy Netherlands Neurosurgical Club



Case:

A 59-year-old woman presented with progressive right leg weakness and new-onset focal seizures. She had undergone a Simpson grade II resection of a left parasagittal meningioma five years prior. Follow-up MRIs had remained stable until a recent scan revealed a 2.8 cm enhancing lesion at the previous resection site with adjacent edema. Given the lesion's location near the motor cortex and superior sagittal sinus, a multidisciplinary team opted for reoperation with neuronavigation and motor mapping. Gross total resection was achieved, and histopathology confirmed WHO grade II atypical meningioma. Adjuvant radiotherapy was initiated. At 6-month follow-up, the patient remained seizure-free with improved motor function and no radiological evidence of recurrence.

This case underscores the importance of long-term surveillance in meningioma patients, especially with higher-grade histology, and highlights the role of tailored surgical planning in eloquent regions.

IN THIS ISSUE

NEUROSURGEONS THROUGH HISTORY
--WILLIAM MACEWEN--

This month we pivot our spotlight to one of the pioneers of modern neurosurgery – Sir William Macewen. Often hailed as one of the founding fathers of brain surgery, Macewan pushed the boundaries of neurosurgery by performing the first documented successful resection of a brain tumor at a time where neurosurgical intervention was considered nearly unthinkable due to the high mortality rates and limited anatomical understanding.

Early Years

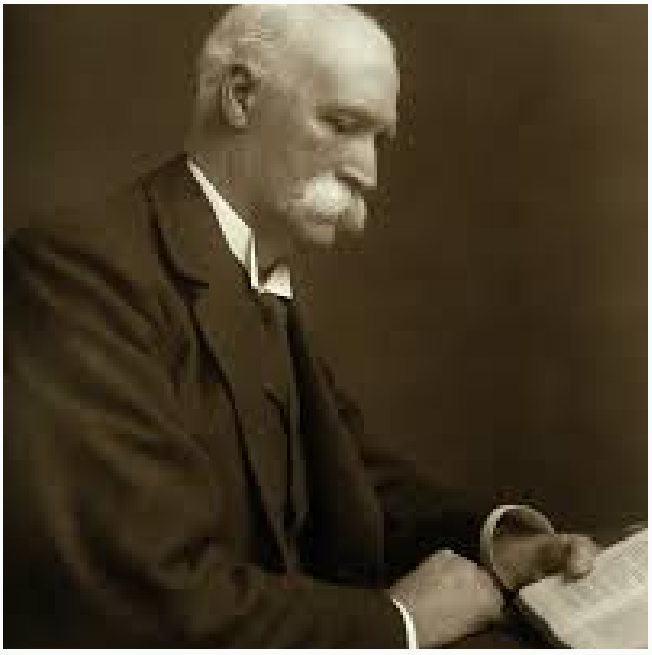
Sir William Macewen was born on June 22, 1848, on the Isle of Bute in Firth of Clyde, Scotland, to a loving household. He was the youngest of 12 children. For most of his childhood, Macewen was raised by his elder sister after the untimely and early death of his mother. His youth was spent in athletic pursuits, typically in traditional Scottish sports such as stick fighting, fencing, and sailing. Despite his later career, Macewen was more at ease in the gymnasium than in a classroom while growing up.

His early academic performance was unremarkable, yet his interest in medicine led him to the University of Glasgow, where he graduated from medical school in 1872. During his time as a student, Macewen displayed an intense curiosity and a thirst for learning. He spent much of his time examining anatomical specimens and was known for his hands-on approach to education, often staying late into the evening in the dissection room.

Contributions to medicine

Macewen made contributions across several fields, including aseptic technique, orthopedic surgery, and bone grafting. After medical school, he trained under George H. B. Macleod, a student of Joseph Lister. Deeply influenced by Lister's revolutionary work on antisepsis, Macewen embraced the use of sterilization, carbolic acid sprays, surgical gowns, and adequate hand hygiene—at a time when these practices were still controversial. He completed his training in 1877 and, in 1880, initiated one of the first formal training programs for nurses, emphasizing aseptic technique at Glasgow Royal Infirmary.

In general surgery, he devised a radical and effective new technique for repairing inguinal hernias. In orthopedics, he conducted the first homologous bone graft, using tibial bone from a child with rickets to reconstruct a humerus damaged by infection— this laid the foundation for modern bone grafting. His osteotomies for correcting bone deformities are still referenced today, and the "Macewen's sign" remains a clinical clue in cases of hydrocephalus. The Macewan's sign is heard when percussing the pterion area of the skull, which will produce cracked pot sound in the case of hydrocephalus. A positive test is indicative of separated sutures – due to increased intracranial tension.



Contributions to neurosurgery

Macewen's most celebrated contribution came on July 27, 1879, when he performed the first documented successful intracranial surgery for a brain tumor. The patient, Barbara Watson, had a long-standing history of seizures and neurological decline. Diagnosis was made entirely through clinical reasoning—based on symptomatology and cortical localization theories, particularly those advanced by David Ferrier.

A skilled nurse noted the specific pattern of convulsions, and Macewen, interpreting this data, accurately pinpointed the tumor's location. Operating under antiseptic conditions, he identified a subtle bulge on the skull's surface. Beneath it, he discovered and excised a tumor arising from the dura mater. Though the surgery was technically successful, postoperative complications including fever, seizures, and transient aphasia occurred. Nonetheless, Barbara ultimately recovered well and survived for another eight years, eventually dying of unrelated renal disease.

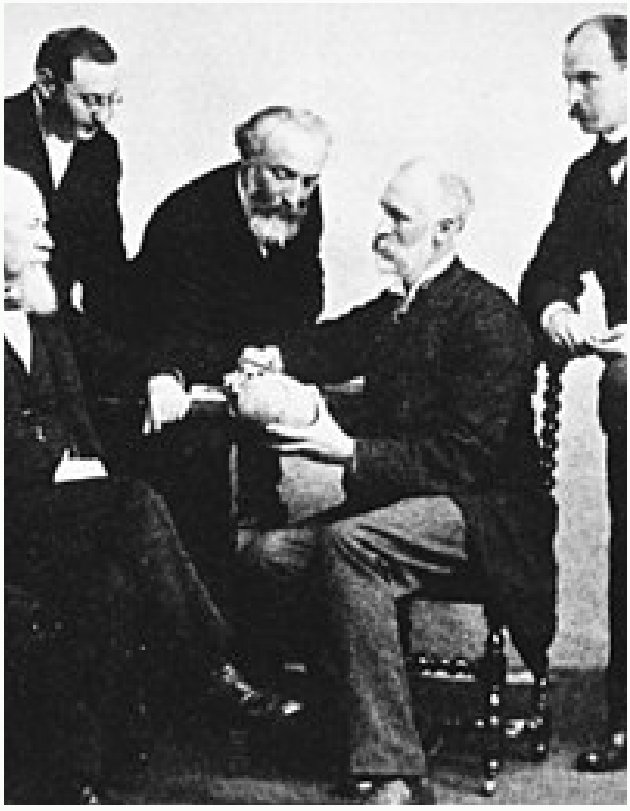
This landmark surgery proved that intracranial intervention was not only possible but could be curative—effectively opening the door to the field of operative neurosurgery. Macewen's success demonstrated that neurosurgery could evolve from a theoretical field into a practical and lifesaving specialty.

WRITTEN BY: PAWAN RAVINDRAN

Macewen's influence

Sir William Macewen was knighted in 1902 for his contributions to medicine. He was appointed Regius Professor of Surgery at the University of Glasgow and remained a prominent teacher and mentor throughout his career. During World War I, he organized and led surgical care for wounded soldiers, further applying his principles of brain surgery and trauma management on the battlefield.

Macewen's legacy continues to influence modern neurosurgery. His courage to operate on the brain without the safety net of modern imaging or antibiotics, and his emphasis on antisepsis and localization, exemplify the blend of science, skill, and daring that define the field. As we advance into an era of robotics, neuro-navigation, and minimally invasive procedures, Macewen's groundbreaking achievements remind us that every great leap in medicine begins with one bold step into the unknown.



AN ACADEMIC OVERVIEW OF INTRACRANIAL NEOPLASMS AND CONTEMPORARY NEUROSURGICAL RESECTION PARADIGMS

Intracranial neoplasms constitute a morphologically and biologically heterogeneous group of lesions that may originate from diverse cell lineages within the central nervous system (CNS) or represent metastatic dissemination from systemic malignancies. These lesions range from indolent, benign tumors—such as meningiomas and low-grade gliomas—to highly aggressive, infiltrative entities typified by glioblastoma (GBM), the most malignant form of glioma. The clinical symptomatology is dictated by the lesion's anatomical locale, proliferative velocity, and propensity to induce mass effect, with manifestations encompassing cephalalgia, seizure activity, focal neurological deficits, neurocognitive deterioration, and signs of raised intracranial pressure.

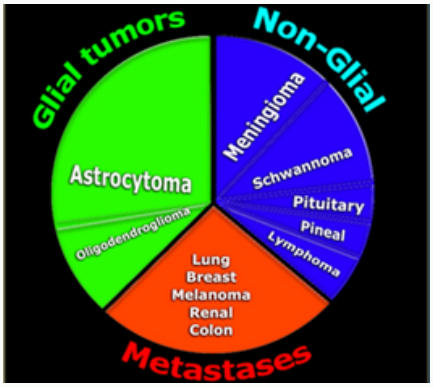
Diagnostic Workup and Neuropathological Classification

High-resolution magnetic resonance imaging (MRI), particularly with gadolinium-enhancement, remains the diagnostic modality of choice, facilitating nuanced characterization of lesion morphology, vascularity, and peritumoral edema. Supplementary imaging techniques—such as functional MRI (fMRI), diffusion tensor imaging (DTI), and positron emission tomography (PET)—enhance the preoperative assessment by delineating functional anatomy, white matter tracts, and metabolic activity, respectively. Histopathological examination, inclusive of immunohistochemistry and molecular profiling (e.g., IDH1/2 mutations, 1p/19q co-deletion, MGMT promoter methylation), is imperative for definitive diagnosis and grading, in alignment with the World Health Organization's (WHO) integrated classification schema.

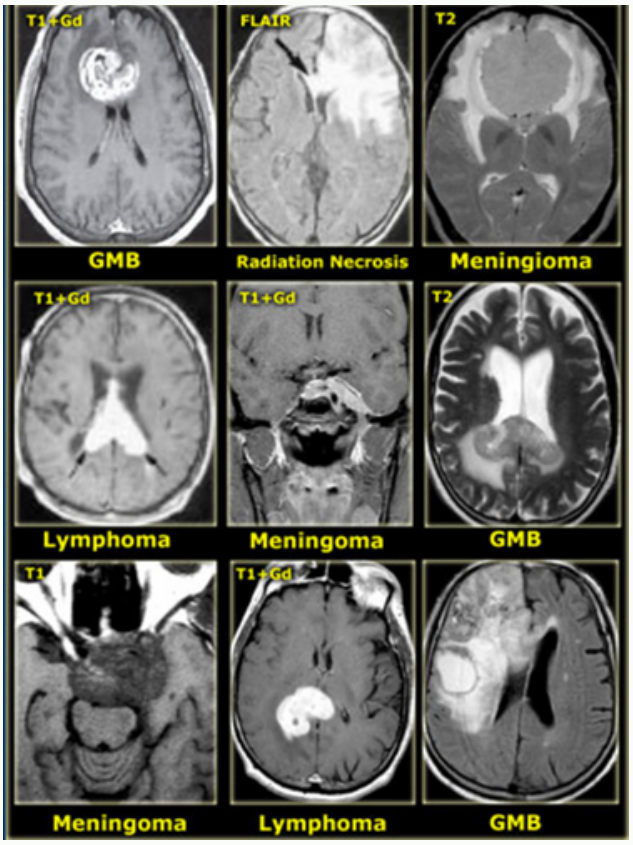
Principles and Evolution of Neurosurgical Resection

Surgical intervention remains a cornerstone of therapeutic strategy in the management of intracranial tumors, with goals encompassing maximal safe resection, amelioration of mass effect, and procurement of diagnostic tissue. The extent of resection (EOR) is of paramount prognostic significance, particularly in high-grade gliomas, where even marginal gains in EOR are correlated with prolonged progression-free and overall survival. Modern neurosurgical practice is underpinned by a suite of advanced intraoperative adjuncts designed to enhance surgical precision and mitigate iatrogenic injury:

1. Microsurgical Techniques: Utilization of high-powered operative microscopes permits magnified, illuminated visualization of tumor margins and neurovascular structures, thereby facilitating meticulous, atraumatic dissection.
2. Stereotactic Neuronavigation: These systems synthesize preoperative imaging with real-time spatial tracking, functioning as an intraoperative GPS to localize lesions and guide trajectory planning with millimetric precision.
3. Awake Craniotomy with Electrophysiological Mapping: Particularly vital in lesions adjacent to eloquent cortex, this technique allows direct cortical and subcortical stimulation to delineate functional boundaries, thereby optimizing oncological resection while preserving essential neurological function.
4. Fluorescence-Guided Resection (FGR): Administration of tumor-selective fluorophores such as 5-aminolevulinic acid (5-ALA) enables intraoperative visualization of malignant tissue under violet-blue excitation, enhancing margin delineation and cytoreduction.



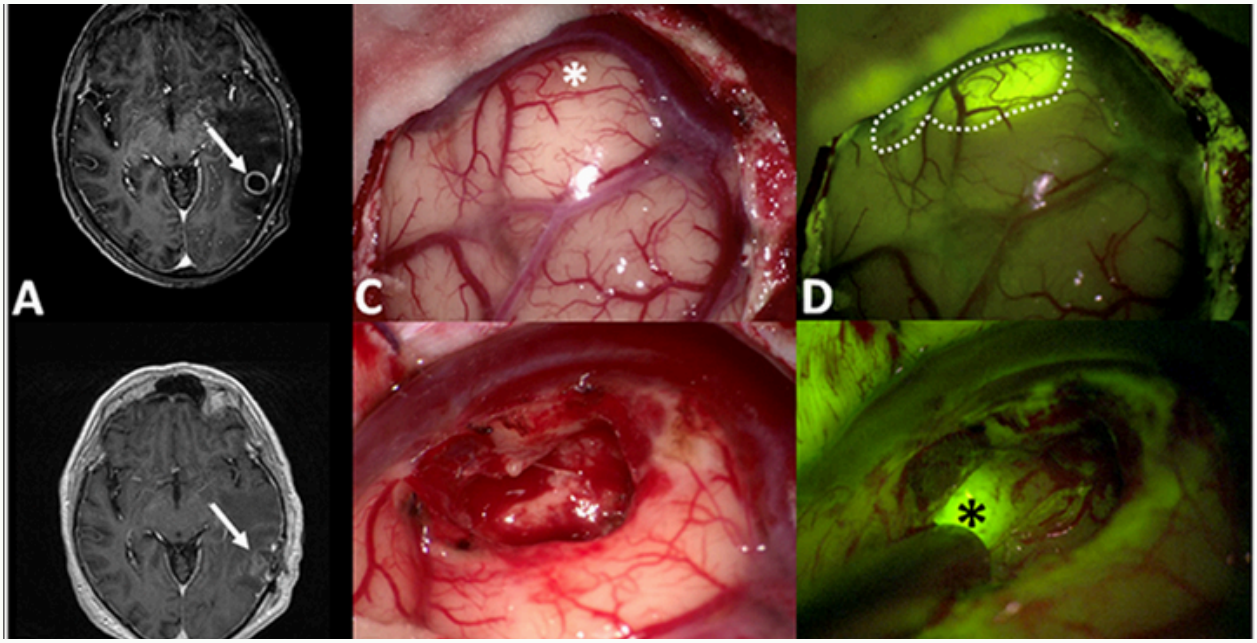
5.Endoscopic and Minimally Invasive Approaches: Particularly suited to intraventricular and skull base pathology, these techniques afford reduced operative morbidity via smaller craniotomies or transnasal corridors, without compromising oncological efficacy.



Postoperative Trajectory and Therapeutic Adjuncts

Post-resection management is individualized and typically encompasses adjuvant radiotherapy and chemotherapy, most notably the Stupp protocol for GBM (concurrent temozolomide with radiotherapy followed by adjuvant temozolomide). Prognosis is contingent on multiple variables, including histological subtype, molecular profile, patient age, performance status, and EOR. Despite technological and therapeutic advancements, outcomes remain dismal in high-grade neoplasms, underscoring the exigency for translational research in areas such as immuno-oncology, precision medicine, and gene-targeted therapeutics. Ultimately, optimal management of intracranial tumors necessitates a multidisciplinary approach, incorporating the expertise of neurosurgeons, neuro-oncologists, neuroradiologists, pathologists, and rehabilitation specialists to deliver evidence-based, patient-centered care that balances oncological control with functional preservation and quality of life.

WRITTEN BY:
JOOST BERTENS



MEET THE BOARD: ELISE BROERSEN

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 Commissioner of Acquisitions, Elise Broersen.

Getting to Know Elise

How old are you and how old do you feel?
I'm 21 years old and, well, I feel 21 too. When I'm traveling, I sometimes feel younger, because I do a lot of new stuff. But the moment I'm working, I suddenly feel like I'm 30 with back pain and I start going to bed at 10 pm.

Which faculty are you in, and what year are you in? And what do you like most about your faculty?
I studied in Groningen and recently completed my bachelor's degree, so I'm currently enjoying a gap year. What I love most about studying in Groningen is the cozy, close-knit vibe. Even though there are around 400 students, the tutor system—where we teach each other in small groups—really helps you connect with a lot of people quickly.

Where are you from, and where do you currently live?
I'm originally from Haarlem (the most beautiful city in the Netherlands), and now I live in Groningen (the best student city in the Netherlands).

Neurosurgical questions

What sparked your interest in neurosurgery?
Honestly, I couldn't tell you exactly. When I was 14, I just randomly decided I wanted to be a neurosurgeon. As I've learned more over time, it turns out I actually do find it the most fascinating field. The brain and nervous system control nearly every function in the

body, which is already fascinating on its own. But what draws me in is the incredible structure that surrounds and protects it—the skull and spine. Their detailed design isn't just functional, it's a example of how form meets purpose. Together, they make up what I see as the most captivating and impressive system in the human body.

What is your favourite brain structure and why?
The brainstem—hands down. It's the oldest part of the brain and controls all the essential functions we literally can't live without. Although... the amygdala is a very close second.

What do you enjoy the most about being the commissioner of Acquisitions of Dandy?
Designing the newsletter layout was a lot of fun! I've developed a bit of a Canva addiction at this point, and I genuinely enjoy playing around with it.

What would you want to specialize in as a neurosurgeon?
Honestly, I don't know yet. There are so many areas I find fascinating, and I want to experience them in practice before I decide. That said, I'm particularly intrigued by cranial and vascular neurosurgery at the moment.

INTERVIEW WITH ELISE- CONT'D

Off the Cuff Questions

You have a long surgery coming up. Which genre of music do you listen to?
Rap, no question. Especially Kanye West. His music always hypes me up—and has gotten me through more than one exhausted, post-OR bike ride home.

What's your favourite season?
Spring! I love seeing everything bloom again. And the weather is that "warm but not melting" weather.

If you had to get a tattoo with the name of a celebrity, who would it be, and why?
Oh god... ideally, no one. But if I **had** to pick, I'd go with Léon—a Swedish singer. I really like her music, and at least the name is aesthetically pleasing.

Rapid Fire Round 🔥

Salty or sweet popcorn?
Sweet, no doubt. I like the crunchy caramel coating.

Lectures or self-study?
Self-study. It's way more efficient for me—no offense to lecturers.

Coffee or tea?
Coffee! I'll take a cappuccino or a Vietnamese salt coffee or coconut coffee any day.

Physical or digital textbooks?
Tough one. If I don't have to carry it, physical all the way. But if I'm carrying it around? Then digital, please.

DANDY HAS A NEW BOARD!

After an extensive search, Dandy Netherlands has found its new board members for the coming year!

PRESIDENT

VICE-PRESIDENT

SECRETARY

TREASURER

COMMISSIONER OF ACQUISITIONS

COMMISSIONER OF ACTIVITIES

COMMISSIONER OF EXTERNAL RELATIONS

COMMISSIONER OF CREATIVE IT

EXCITED TO MEET THE NEW BOARD? STAY TUNED!

QUIZ: DANDY-EDITION

Q1. Walter E. Dandy is credited with co-founding modern neurosurgery along with which of the following figures?
A. Wilder Penfield
B. Harvey Cushing
C. Victor Horsley
D. Santiago Ramón y Cajal

Q2. What major diagnostic innovation did Dandy introduce in 1918 to visualize the ventricular system?
A. Myelography
B. MRI
C. Pneumoencephalography
D. Ventriculography

Q3. Which of the following surgical interventions did Dandy first perform successfully?
A. Stereotactic thalamotomy
B. Pineal tumor resection
C. Functional hemispherectomy
D. Radiosurgery

Q4. The Dandy-Walker malformation primarily involves abnormalities in which anatomical structure?
A. Thalamus
B. Cerebellum
C. Pituitary gland
D. Medulla

Q5. What innovation did Dandy contribute to the treatment of intracranial aneurysms?
A. Coiling
B. Surgical bypass
C. Endovascular stenting
D. Microsurgical clipping

Q6. Dandy made significant contributions to the understanding and surgical management of which cerebrospinal fluid disorder?
A. Syringomyelia
B. Chiari malformation
C. Hydrocephalus
D. Meningitis

Q7. At which institution did Walter E. Dandy conduct most of his groundbreaking neurosurgical work?
A. Massachusetts General Hospital
B. University of Chicago
C. Johns Hopkins Hospital
D. Columbia-Presbyterian Medical Center

Q8. Which of the following procedures did Dandy not pioneer?
A. Ventriculography
B. Pineal tumor removal
C. Transsphenoidal pituitary surgery
D. Intracranial aneurysm clipping

Q9. What gas did Dandy initially use to perform ventriculography?
A. Nitrous oxide
B. Oxygen
C. Air
D. Carbon dioxide

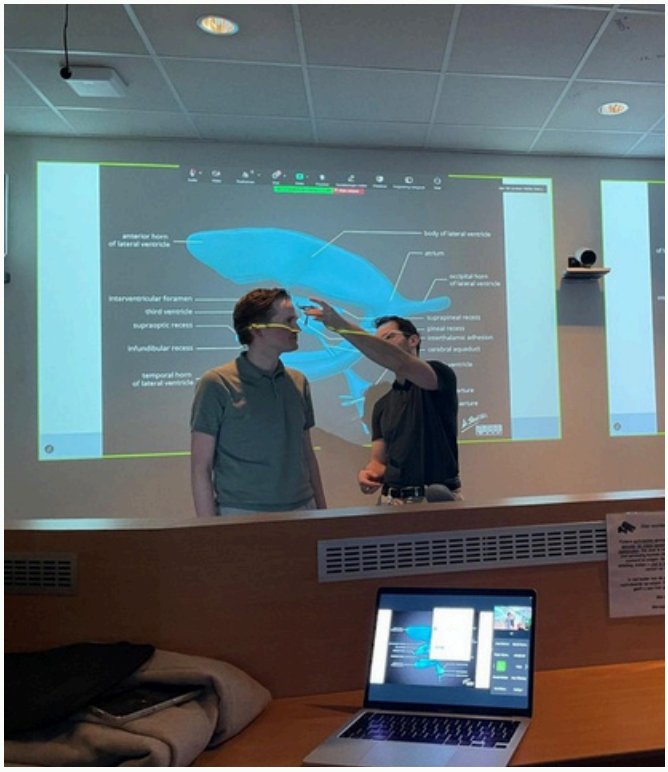
Q10. Which of the following best describes Walter E. Dandy's approach to neurosurgery?
A. Conservative, non-invasive
B. Primarily focused on psychiatric applications
C. Aggressively surgical and pioneering in techniques
D. Limited to animal model research

ANSWERS REVEALED IN NEXT ISSUE!

A GLIMPSE INTO THE FUTURE OF NEUROSURGERY - AR WORKSHOP WITH PATRICK O'DONNELL

On Friday, March 29th, a special and educational afternoon took place at Amsterdam UMC, where Dandy Netherlands hosted an exclusive hands-on workshop on Augmented Reality (AR) in neurosurgery. The workshop was led by none other than Patrick O'Donnell, an expert in AR technology within the medical field.

During this interactive session, Patrick guided participants through the world of AR—an innovative technology with promising applications in surgery. In particular, AR significantly enhances the surgeon's perioperative anatomical orientation. By projecting three-dimensional anatomical structures into the space around them, surgeons can operate with greater precision and safety—a true revolution in neurosurgery.



In addition to clinical applications, the session also highlighted the value of AR in medical education. The technology is already being used in training modules for medical students, offering a clear and interactive way to understand complex anatomical structures. Its didactic value is unmistakable.

One of the highlights of the day was the moment participants got to try the AR headset themselves. Through the headset, they saw 3D anatomical structures projected in their surroundings, allowing for interactive practice. This experience brought the future of medicine to life—a powerful demonstration of how technology can enhance medical education.

We proudly look back on an afternoon filled with innovation, interaction, and inspiration. Our sincere thanks to Patrick O'Donnell for sharing his expertise and to Amsterdam UMC for their warm hospitality.

WRITTEN BY:
FEDDE WEENINK

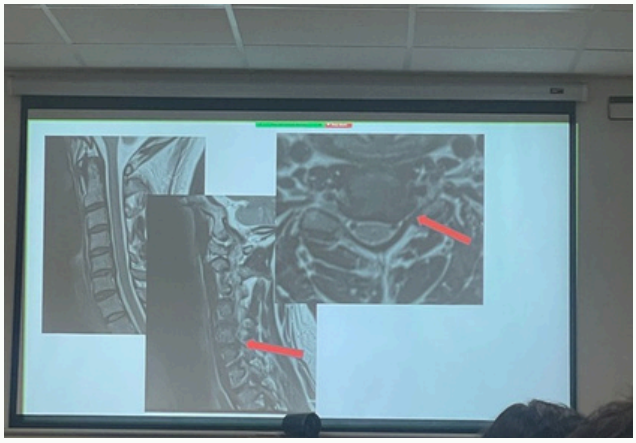
HYBRID LECTURE ON SPINAL NEUROSURGERY AT ACIBADEM IMC – AN EVENING FULL OF KNOWLEDGE AND PRACTICE

On an inspiring evening, Dandy Netherlands was welcomed at ACIBADEM International Medical Center in Amsterdam for an educational session on spinal neurosurgery. This hybrid lecture was delivered by Dr. Abu Saris, a neurosurgeon, who introduced the audience to the complex field of cervical spine surgery.

The lecture provided a clear overview of common conditions such as cervical herniated discs and spinal stenosis, with special attention given to the surgical approach through ACDF (Anterior Cervical Discectomy and Fusion). This technique involves removing a degenerated disc and fusing the adjacent vertebrae. The combination of clinical insights, surgical techniques, and practical examples made this session extremely valuable for all participants—both on-site and online.

What made the evening especially remarkable was the rare opportunity for students to observe surgical instruments up close and to practice under a surgical microscope themselves. This hands-on experience offered an extraordinary bridge between theory and practice.

The evening concluded with a tour of the clinic, where participants got a behind-the-scenes look at the operating rooms and facilities of ACIBADEM IMC. Naturally, this inspiring event ended with a delicious sandwich, soup, and a drink.



We extend our heartfelt thanks to Dr. Abu Saris for his time, expertise, and enthusiastic presentation, and to ACIBADEM IMC for their hospitality. Evenings like these underscore the importance of practice-based, interactive education for the future generation of physicians.

WRITTEN BY:
FEDDE WEENINK

FINAL WORDS DANDY BOARD 2024-2025

As we reach the end of the board year, the 2024-2025 board would like to speak to all members one last time.

Dear Dandy members,

We had an incredible year, packed with activities and new innovations. This year, we increased the amount of activities, revamped the website and newsletter, and were able to get exciting new (and international) speakers to inspire you all. We had a great time and we are sure that the next board will make Dandy Netherlands even bigger and better. Thank you for your excitement, engagement on social media, and your attendance at activities, whether it was online or in person. Feel free to approach us if you see us at activities or in the hospital - we're always excited to see more of the society we've built.

We hope you had just as much fun as we did.

Love from the 2024-2025 board,
Fedde, Rebecca, Pawan, Max, Elise, Romilda, Joost and Camille

NEXT ISSUE

A DEEP-DIVE INTO THE HISTORY OF NEUROSURGERY

NEW BRAINTEASER

RECAP OF PAST EVENTS

FUTURE EVENTS

AND MORE! (FROM THE NEW BOARD)

STAY UP-TO-DATE WITH DANDY NETHERLANDS AND FOLLOW US ON SOCIAL MEDIA:

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Dandy Netherlands Neurosurgical Club

ARE YOU INTERESTED IN A COLLABORATION WITH DANDY NETHERLANDS? CONTACT US VIA EMAIL: INFO@DANDYNETHERLANDS.NL