MAY, 2025

SANS NEWSLETTER

IN THIS ISSUE...

- **SANS Annual Meeting Review**
Where Innovation Meets Collaboration: Highlights& Breakthroughs
- **Spotlight:** Exclusive Interview Dr. Essam AlShail
- **Community Pulse:** News & Updates

QUOTE OF THE ISSUE:

From ignited ideas to pioneers' vision — we turn insight into impact, weaving progress into Saudi neurosurgery's future.

sans.newsletter

sans.newsletter@sans.org.sa

MAY 2025 | Issue 2

SANS NEWSLETTER

THE OFFICIAL NEWSLETTER OF SANS

ISSUE' MESSAGE

DEAR COLLEAGUES,

This edition highlights progress in Saudi neurosurgery, featuring breakthroughs from the SANS Annual Meeting and an exclusive interview with Dr. Essam AlShail—a visionary who bridges ethics, innovation, and mentorship. His insights on pediatric neurosurgery and a pioneering sutureless device remind us that excellence is a collective effort.

Within these pages, Dr. Yazid Maghrabi graces us with an article on epigenetics in neuro-oncology, delving into how epigenetic biomarkers are revolutionizing brain tumor management by weaving together molecular insights with surgical practices.

As you explore these narratives, immerse yourself in the tales of discovery and unity that shape our vibrant community.

We eagerly await your voices! Share your ideas, research, and triumphs for future editions of the SANS Newsletter. Together, let us forge 2025 into a year of growth and remarkable achievement for neurosurgery in Saudi Arabia.

News from SANS: Leadership Transition & New Executive Board

The Saudi Association of Neurological Surgery (SANS) proudly announces the conclusion of its 2025 Executive Board Term Elections. We extend our deepest gratitude to the outgoing Executive Board for their unwavering dedication and transformative leadership, which propelled SANS's mission to advance neurosurgical excellence, education, and innovation across the Kingdom.

During the **General Assembly on February 1, 2025**, the newly elected Executive Board was unveiled, marking a new chapter in SANS's journey. The 2025 Board comprises:

Stay Connected

Join us in welcoming the new leadership and supporting SANS's vision to shape the future of neurosurgery in Saudi Arabia and beyond.

Dr. Fawaz Al Motairi
President

Dr. Abdulkarim Al Rabie
Vice President

Dr. Mubarak AlGahtany
Secretary General

Dr. Ashwag AlQurashi
Treasurer

Dr. Yahya Khormi
Member

Dr. Ahmed Al Jishi
Member

Dr. Khalid Bajunaid
Member

Dr. Mohammad AlShardan
Member

Dr. Abdulhadi AlGahtani
Member

From Riyadh to the World: Charting Neurosurgery's Next Frontier

The 19th Annual Meeting of the Saudi Association of Neurological Surgery (SANS 2025) concluded as a resounding success, uniting over 900 attendees from across the globe under the theme "Ai: Revolutionising Neurosurgical Frontiers." Held under the leadership of Dr. Fahd AlSubaie (Conference President), the event showcased groundbreaking research, advanced surgical techniques, and transformative discussions shaping the future of neurosurgery.

We extend our deepest gratitude to every collaborator who joined us in co-creating the vision of the 19th Annual SANS Meeting.

While this review captures moments, the true measure of our success lies ahead—in how we channel shared knowledge into action and transform inspiration into innovation.

Let's turn insights into impact, together.

DR. FAHD ALSUBAIE
President of SANS 2025

"

#SANS 2025

What an amazing journey. Thankful for the great opportunity and time spent listening to inspiring mentors !

2025 attendee referring to the 19th annual SANS meeting

2025 SANS Highlights

95%

of the attendees are from the Middle East

983 people attended the 19th Annual Meeting of the Saudi Association of Neurological Surgery (SANS 2025)

100+

Total Scientific Program Components

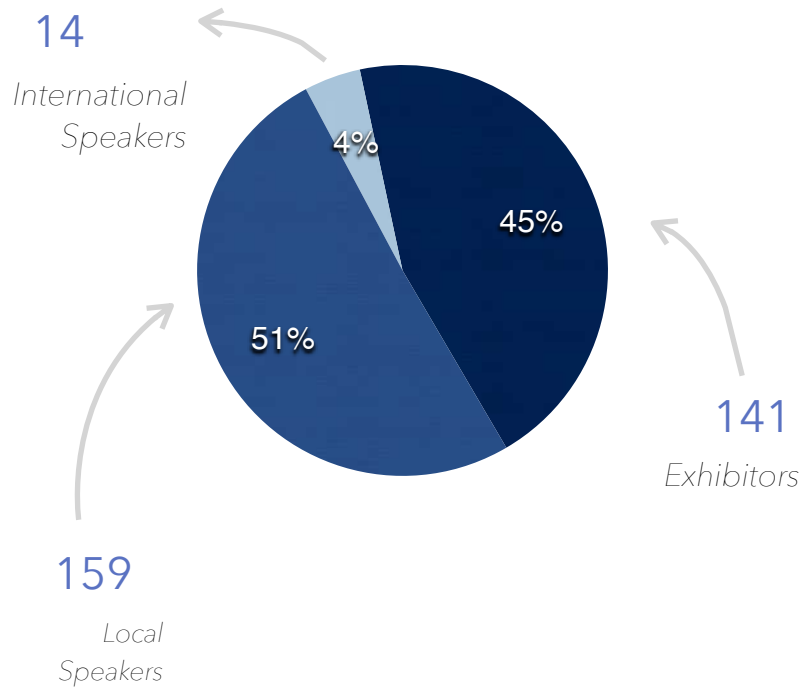
Including workshops, sessions and discussions

Conference Quick Facts

SNAPSHOT OF SANS 2025

The Neuroanatlas Group Led by Dr.Bafaquh

Professor **Ahmed Al Khani** has been selected as the 2025 recipient of the SANS Gold Medal for his longstanding contributions to the field of neurosurgery



"Excited"

Captured in a moment of pure excitement, two aspiring neurosurgeons share a smile at SANS 2025—proof that curiosity are contagious

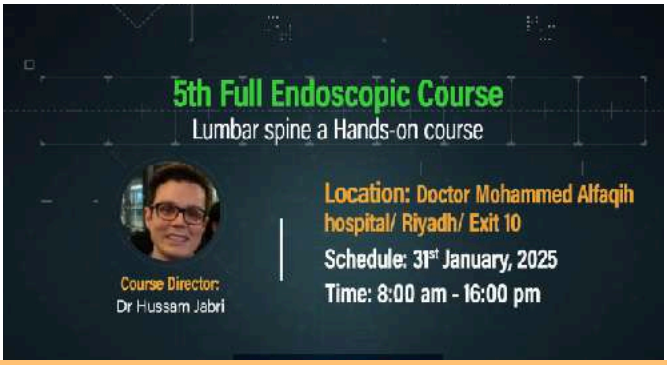
2025 SANS Highlights

#SANS2025

19th ANNUAL SANS MEETING (SANS 2025)

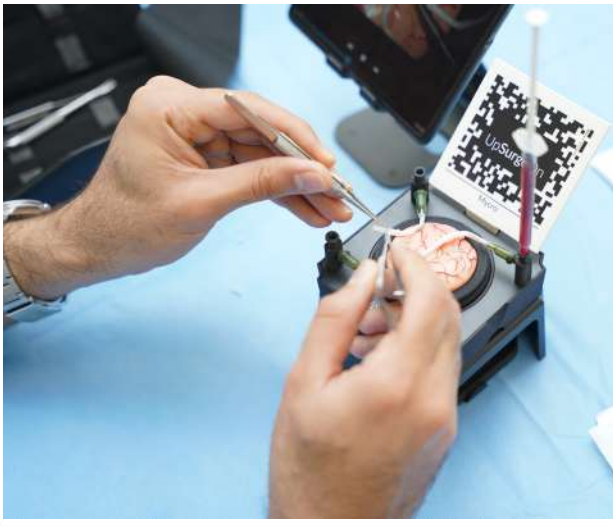
The first day of the conference (31 January 2025) was dedicated for the workshops

These workshops were:



PHOTOS FROM THE WORKSHOPS

#SANS2025



KEYNOTE SPEECHES

#SANS2025

Legacy in Motion: Honouring Neurosurgical Pioneers Prof. Al Motaire & Prof. Jamjoom Through Visionary Keynotes

Prof. Kalaf Al Motaire's Lecture

- Speaker: Dr. Michael Lim
- Topic: " Translating Finding From the Bench To The Clinic and Back Again"
- Key Message: Bridging clinical care to accelerate patient-centred breakthroughs

Prof. Zain Alabedeen Jamjoom's Lecture

- Speaker: Dr. Mahmoud AlYamany
- Topic: " AI & Computation Reshaping Healthcare"
- Key Message: AI is amplifying the healthcare precision and speed

AWARD WINNERS

#SANS2025

PROFESSOR AHMED AL KHANI RECOGNISED WITH 2025 SANS GOLD MEDAL FOR DEDICATED NEUROSURGICAL SERVICE

The Saudi Association of Neurological Surgery (SANS) proudly honours Professor Ahmed Al Khani as the 2025 SANS Gold Medal recipient, celebrating his visionary leadership and transformative contributions to neurosurgery.

A luminary in stereotactic and functional neurosurgery, Prof. Al Khani bridges global excellence with regional advancement as Chairman of the WFNS Stereotactic Committee and President of the Pan Arab Neurosurgical Society. His pioneering work at the Ministry of National Guard Health Affairs (MNG-HA), where he leads the neurosurgery division, has elevated Saudi Arabia's neurosurgical standards. Simultaneously, his academic rigour as a Professor at Alfaisal University and his role shaping the Saudi Board in Neurosurgery (SCFHS) underscore his dedication to nurturing future pioneers.

From Riyadh to the world, Prof. Al Khani's contributions is a testament to innovation, education, and relentless advocacy for advancing brain health.

AWARD WINNERS

#SANS2025

NEUROGRAPHIA

The Saudi Association of Neurological Surgery (SANS) recently unveiled the fifth edition of NeuroGraphia at its latest meeting—an art competition redefining the synergy between neuroscience and art. This competition shows us how scalpels and sketchpads blend to reveal the brain's hidden beauty.

NeuroGraphia capture the essence of neurosurgery through two dynamic categories: Scientific Illustration and Artistic Abstract.

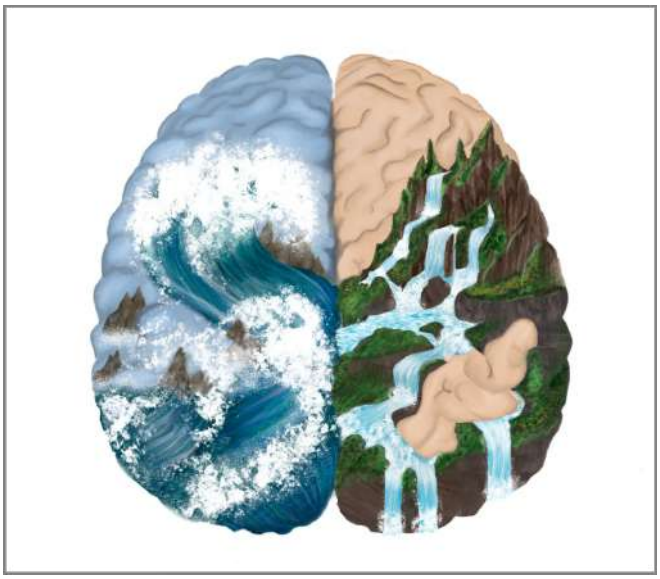
Let us celebrate this year's incredible NeuroGraphia winners!

Art Category

1. **1st Winner:** Belal Momen Sharab

2. **2nd Winner:** Noran Alawami

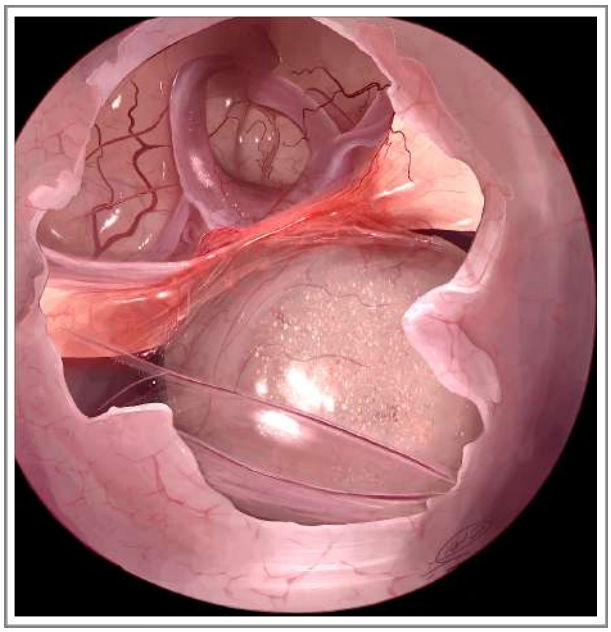
3. **3rd Winner:** Lama Alghamdi



NEUROGRAPHIA

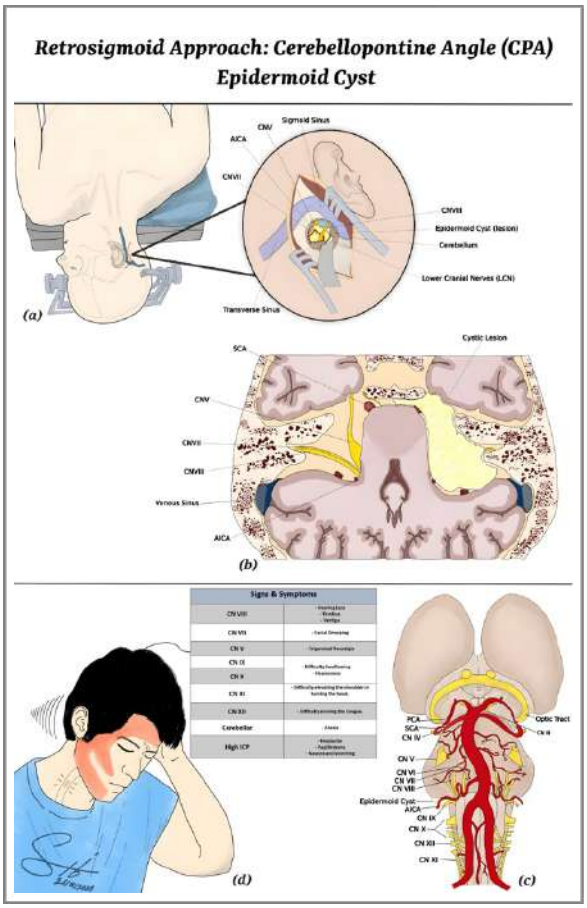
Scientific Illustration Category

1. **1st Winner:** Fatimah Alghabban



2. **2nd Winner:** Zahra Al Ghazwi

3. **3rd Winner:** Saad Alsuwayhib



A heartfelt *thank you* to **Dr. Abdulrahman Sabbagh** and the entire NeuroGraphia team for crafting a competition where science and art unite.

Feeling inspired? *Let us see your masterpiece at NeuroGraphia 2026!*

SANS2025 IN PHOTOS

#SANS2025

SANS2025 IN PHOTOS

SANS2025 IN PHOTOS

A picture speaks a thousand words

Transfixed by the screen, two future neurosurgeons felt the pulse of possibility.
For them, SANS 2025 wasn't just a conference—it was the dawn of their neurosurgical legacy.
The promise?
'We're next.'

Her phone snaps a moment of innovation. This isn't just a photo—it's the start of her own neurosurgical story

Mark your calendar for our 20th Annual Meeting of SANS 2026. For more information, visit our website. ***Stay Tuned***!

SANS2025 IN NUMBERS

7
Pre-conference workshops

20
Sessions

30
Discussion

59
Topics

141
Exhibitors

173
Speakers (international & Local)

983
people attended the 19th Annual Meeting of SANS 2025

Did You Know?
The human brain processes information at 268 mph—faster than a Formula 1 car.
At SANS 2025, innovation raced even faster.

Building on SANS 2025's momentum, we look ahead to 2026—where neurosurgery's leaders will unite to redefine possibilities. Save the date and join the future. See you in SANS2026!

Interview

Exclusive Interview: Dr. Essam AlShail on Ethics, Innovation, and Building a Legacy in Pediatric Neurosurgery

A Conversation With a Visionary

Dr. Essam AlShail—architect of Saudi pediatric neurosurgery—shares his journey from groundbreaking innovation to mentoring tomorrow's leaders. Dive into his insights on ethics, global collaboration, and the human side of surgical excellence.

SANS Newsletter: What inspired you to pursue a career in neurosurgery, and how did your journey begin?

Essam Al Shail: My journey began with a profound fascination for the complexity of the human brain and a desire to make a meaningful difference in patients' lives. After completing my MBBS at King Saud University, I joined the inaugural neurosurgery residency program in Saudi Arabia, a collaborative effort involving King Faisal University, the military hospital, and King Faisal Specialist Hospital & Research Centre (KFSH&RC). Training under pioneers in the field and subsequently pursuing fellowships in Canada, including pediatric neurosurgery and craniofacial surgery at the Hospital for Sick Children in Toronto, solidified my commitment to neurosurgery. Witnessing the transformative impact of surgical interventions on children with congenital disorders inspired me to dedicate my career to pediatric neurosurgery.

SN: Are there any books, movies, or TV shows that you find particularly inspiring or relatable to your work or life?

ES: While my work is deeply rooted in science, I draw inspiration from narratives that emphasise resilience and ethical integrity. Books such as *Principles of Biomedical Ethics* by Beauchamp and Childress resonate with my commitment to healthcare ethics. Documentaries on medical breakthroughs, like *The Miracle Workers*, underscore the significance of innovation and collaboration in advancing neurosurgical care.

SN: What's your personal motto or philosophy that guides you through challenging times?

ES: My guiding principle is Primum non nocere (First, do no harm). Beyond technical precision, this philosophy encompasses a commitment to patient-centred care and ethical decision-making. During challenges, I remind myself that perseverance, humility, and a dedication to lifelong learning are essential for overcoming obstacles.

SN: What hobbies or interests do you enjoy outside of neurosurgery?

ES: Outside the operating room, I am passionate about mentoring the next generation of neurosurgeons and contributing to healthcare policy. I also take pleasure in strategic planning—whether it involves advancing international healthcare collaborations or exploring innovations such as my patented sutureless microvascular device. These activities keep me intellectually engaged and aligned with my mission to elevate global neurosurgical standards.

Interview

Dr. Essam Al Shail

SN: If you weren't a neurosurgeon, what career do you think you would have pursued, and why?

ES: With an MBA in Healthcare Management and experience in leadership roles within international affairs, I would have likely pursued a career in healthcare administration. My involvement in leading transformative initiatives, such as the establishment of Saudi Arabia's first pediatric neurosurgery fellowship program, has demonstrated the significant impact of strategic vision on the enhancement of healthcare systems.

SN: How do you balance the demands of your profession with your personal life?

ES: Balancing a demanding career requires discipline and prioritisation. I delegate responsibilities whenever possible, maintain a structured schedule, and carve out time for family and self-reflection. Morning walks and evening reviews of the day's accomplishments help me stay grounded.

SN: Outside the operating room, what life lesson has neurosurgery taught you?

ES: Neurosurgery has taught me the value of collaboration. Whether leading multidisciplinary teams or founding organisations such as the Arab Pediatric Neurosurgical Society, success depends on uniting diverse expertise toward a common goal. This lesson extends beyond medicine; embracing teamwork enhances every aspect of life.

SN: Can you share a moment with a patient that fundamentally changed how you approach medicine?

ES: Early in my career, I treated a child with a severe neural tube defect. Despite the success of the surgery, the family's socioeconomic challenges hindered their ability to access follow-up care. This experience motivated me to co-found the Child Brain Health Association, which emphasizes a holistic approach to care that addresses medical, social, and educational needs. It reinforced my belief that healing extends beyond the operating room.

SN: Can you share a story about a mentor who had a profound impact on your career or life?

ES: During my fellowship in Toronto, I had the privilege of being mentored by Dr. James Rutka, a renowned pediatric neurosurgeon, who taught me the importance of balancing technical excellence with compassionate care. His emphasis on innovation, particularly in utilizing frameless stereotaxy for skull base tumors, significantly shaped my approach to integrating technology into surgical practice. Dr. Rutka continues to be a lifelong source of inspiration for me.

SN: Can you share a research project or publication you're most proud of, and how it has influenced the field?

ES: I am particularly proud of developing the *sutureless microvascular anastomosis device*, which has been patented in 16 countries. This innovation reduces operative time and complications in delicate pediatric surgeries. Additionally, my research on *neural tube defect epidemiology* in Saudi Arabia has informed national prevention strategies, significantly reducing incidence rates through advocacy for folate supplementation.

Interview

Dr. Essam Al Shail

SN: What advice would you give to young neurosurgeons just starting their careers?
ES: Never stop learning. Embrace both technical mastery and soft skills—such as empathy, communication, and ethical judgment. Seek out mentors, contribute to research, and remember that each patient's story is unique. Balance ambition with humility; the field evolves rapidly, and adaptability is essential.

SN: As neurosurgery evolves, what innovations excite you most, and what challenges keep you up at night?
ES: Innovations such as AI-driven surgical planning and minimally invasive techniques excite me, as they promise safer and more precise interventions. However, disparities in global access to advanced care continue to pose significant challenges. Ethical dilemmas, including resource allocation in low-income regions, require urgent attention to ensure equitable progress.

SN: What's one thing on your bucket list that you haven't had the chance to do yet?
ES: I aspire to establish a pan-Arab consortium for pediatric neurosurgery that unifies training standards and research across the region. On a personal note, I would love to author a memoir documenting the evolution of neurosurgery in Saudi Arabia, with the aim of inspiring future generations to push the boundaries of medicine.

With over 25 years of experience, Dr. Essam Al Shail specializes in treating complex neurological conditions using advanced surgical methods. At King Faisal Specialist Hospital & Research Centre (KFSH&RC), he leads projects to improve neurosurgical care. He also contributes to national and international medical groups focused on pediatric neurosurgery, craniofacial surgery, and neuro-oncology. Recognized for his expertise, he has been invited to speak at or chair scientific committees for 70+ conferences, sharing knowledge and guiding advancements in the field.

Feature Article

EPIGENETICS IN NEURO-ONCOLOGY:

Unlocking the Future of Personalised Neurosurgical Care

By Dr. Yazid Maghrabi, MBBS, SBNS
King Abdulaziz Medical City | KAMC
Jeddah, Saudi Arabia

The Tumour Knows More Than It Reveals

A tumour may look benign under the microscope, and its borders may seem clean on an MRI. However, a deeper examination of its molecular soul can reveal a completely different narrative.

What if two patients have the same glioma histology, yet one survives for five years while the other lives only fifteen months? The answer may not be found in the anatomy, but rather in the epigenetics- the invisible code that shapes a tumour's behaviour, resistance, and progression.

In neurosurgery, we have traditionally relied on histology and imaging to inform our decisions. However, a new era is upon us. Epigenetic profiling is redefining the way we diagnose, plan, and treat brain tumors, providing a level of precision that cannot be achieved by the scalpel alone.

What Is Epigenetics, and Why Should Neurosurgeons Care?

Epigenetics is the study of heritable changes in gene expression that occur without altering the DNA sequence itself. It involves the use of methylation, histone modifications, and chromatin remodelling to regulate which genes are activated or silenced.

In neuro-oncology, these switches can determine the difference between a slow-growing tumour and an aggressive killer. Unlike fixed mutations, epigenetic changes are dynamic and reversible, which makes them powerful tools for both diagnosis and therapy.

Gliomas: How Epigenetics Is Changing the Game

1. IDH Mutations and the G-CIMP Signature

When IDH1/2 mutations were discovered in gliomas, they provided not only a marker but also a roadmap for understanding the disease. These mutations create a hypermethylated state known as G-CIMP, which is associated with a better prognosis and a more favorable response to therapy **(1).**
Today, IDH status is not merely an academic note; it significantly impacts our communication with families, our surgical approaches, and our planning of adjuvant therapy.

2. MGMT Promoter Methylation: Predicting Chemotherapy Response

The methylation status of the MGMT promoter is a critical factor in glioblastoma. When methylated, it silences a DNA repair gene, rendering tumors more sensitive to temozolomide

Feature Article

and correlating with longer survival **(2).** This single epigenetic marker now routinely informs treatment decisions, and its significance began with a more in-depth examination beyond the H&E slide.

3. Methylation-Based Classification: When Histology Is Not Enough

Sometimes, histology presents us with a puzzle. Enter methylation profiling-an AI-powered tool that classifies central nervous system (CNS) tumors based on their epigenetic "signature."
This method has outperformed histopathology in several challenging cases and is now revolutionising diagnosis at medical centers worldwide **(3).**
Neurosurgeons should know: this is not future medicine; it represents the current best practices in many high-volume institutions.

Pediatric and Skull Base Tumors: New Rules, New Risks

H3K27M in Diffuse Midline Gliomas

This single point mutation alters the epigenetic landscape of midline gliomas, creating a particularly lethal subtype **(4).** These tumors are biologically aggressive and often necessitate a customised surgical approach, along with early discussions regarding trial eligibility and targeted therapy.

ATRT and Chromatin Remodeling

In atypical teratoid/rhabdoid tumors (ATRT), the inactivation of SMARCB1, a chromatin remodeller, results in extensive transcriptional chaos **(5)**. These tumors require prompt diagnosis and intervention, and once again, epigenetics tells us what the microscope cannot provide.

Meningiomas: No Longer "Simple" Tumors

Recent studies indicate that DNA methylation profiling can more accurately predict recurrence risk in meningiomas than WHO grade alone **(6)**. This advancement may soon influence our decision-making process regarding observation versus aggressive resection, even in so-called "benign" tumors.

What This Means for Neurosurgeons Today

You don't need to be a molecular biologist, but it is essential to know what to ask for—and why it matters**.**

- Preoperative planning: Molecular and methylation profiles can influence the aggressiveness of resection.
- Patient counselling: The presence of an IDH mutation or MGMT methylation can significantly shift the conversation on survival and treatment options.
- Tissue Handling: Biopsies should preserve high-quality material for molecular and methylation testing, particularly in ambiguous or paediatric cases.
- Interdisciplinary Collaboration: Epigenetic data fosters closer alignment among pathology, oncology, and neurosurgery than ever before.

Feature Article

EPIGENETICS IN NEURO-ONCOLOGY

The Future Is Epigenetic—and It Is Already Here

We are entering an era in which a tumour's behaviour may soon be predicted more accurately by its epigenetic fingerprint than by any imaging scan or surgical assessment. Furthermore, this fingerprint might even point to new, targeted treatment options.

HDAC Inhibitors

EZH2 Inhibitors

DNMT Inhibitors

Some of these techniques are already in clinical trials, while others are on the horizon. However, they all point toward one goal: precision neurosurgery, where our understanding of tumors is as sharp as our instruments.

Conclusion

In the end, the brain is more than mere circuits; it possesses the ability to remember. Tumors, too, harbour a form of memory not in their DNA sequence, but through the epigenetic marks that influence their fate.

As neurosurgeons, we do more than simply remove lesions; we navigate the intricate complexities of molecular identity, prognosis, and healing.

Understanding epigenetics is no longer optional; it is essential for a future in which we operate not only with skill but also with insight.

Let us ensure that we are prepared!

References

1. Turcan S, Rohle D, Goenka A, et al. IDH1 mutation is sufficient to establish the glioma hypermethylator phenotype. *Nature*. 2012;483(7390):479–483.
2. Hegi ME, Diserens AC, Gorlia T, et al. MGMT gene silencing and benefit from temozolomide in glioblastoma. *N Engl J Med*. 2005;352(10):997–1003.
3. Capper D, Jones DTW, Sill M, et al. DNA methylation-based classification of central nervous system tumours. *Nature*. 2018;555(7697):469–474.
4. Sturm D, Witt H, Hovestadt V, et al. Hotspot mutations in H3F3A and IDH1 define distinct epigenetic and biological subgroups of glioblastoma. *Cancer Cell*. 2012;22(4):425–437.
5. Johann PD, Erkek S, Zapatka M, et al. Atypical teratoid/rhabdoid tumors are comprised of three epigenetic subgroups with distinct enhancer landscapes. *Cancer Cell*. 2016;29(3):379–393.
6. Sahm F, Schrimpf D, Stichel D, et al. DNA methylation-based classification and grading system for meningioma: a multicentre, retrospective analysis. *Lancet Oncol*. 2017;18(5):682–694.

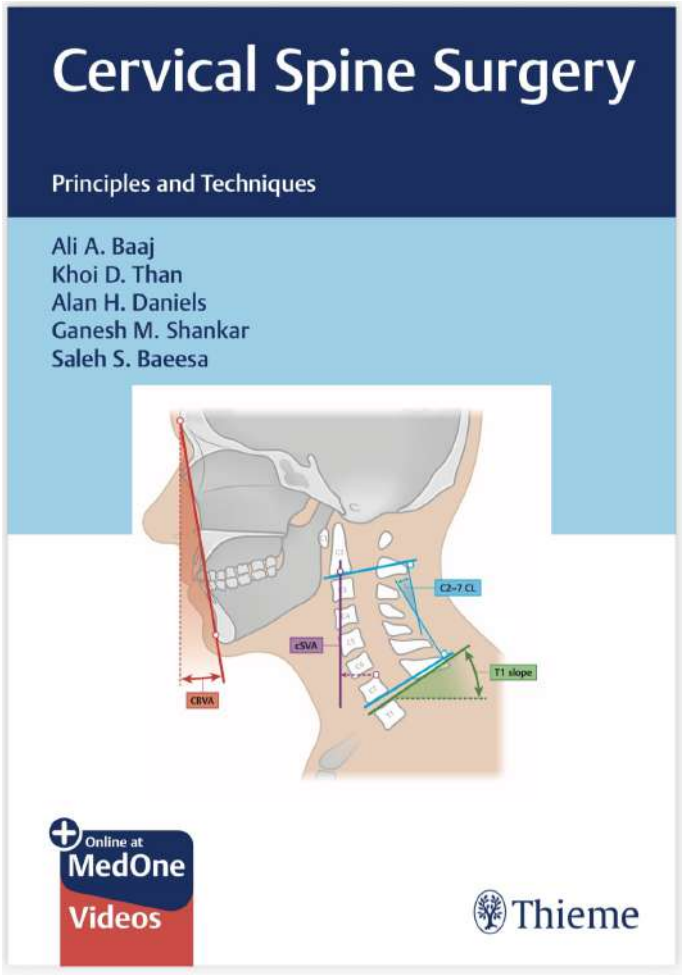
Your voice matters! Share your thoughts, ideas, and experiences with us—let's shape the future of neurosurgery together!
Write to us at sans.newsletter@sans.org.sa

News

HONORS & ACCOLADES

Jazan University College of Medicine Appoints New Vice Dean for Clinical Affairs

Dr. Yahya bin Hadi Kharmi has been appointed as Vice Dean of the College of Medicine for Clinical Affairs for a two-year term. Our community extends heartfelt wishes for his success in advancing academic and administrative excellence.



New Textbook on Cervical Spine Surgery Unveiled

Renowned neurosurgeon Dr. Ali A. Baaj and co-editors, including Prof. Saleh S. Baeesa (a leader in Saudi Arabia's neurosurgical community), have revealed the cover of their upcoming textbook, Cervical Spine Surgery: Principles and Techniques".
This collaborative work features cutting-edge insights into several surgical techniques.

Upcoming Events

2025

Stay Ahead in Neurosurgery:
Engage, Learn, Lead

EAN CONGRESS 2025
For more information click **here**

CNS 2025
For more information click **here**

CCN 2025
For more information click **here**

Vol.6 No.2 MAY 2025

SANS NEWSLETTER

The SANS Newsletter is dedicated to advancing neurological surgery through education, collaboration, and innovation. Views expressed are those of the authors and not necessarily the official stance of SANS.

Editor **Atika AlSudairy** coordinates the creation of the newsletter with the help of the editorial board.
Please Submit articles, job changes, promotions, or other member news to:

sans.newsletter@sans.org.sa