



Neurosurgical Forum

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Society for Pediatric Neurosurgical Oncology: why now is the time

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THE written history of pediatric neurosurgical oncology begins in 1889 when renowned neurologist M. Allen Starr published the first large clinicopathologic series of brain tumors. Of his 300 cases, half were tuberculomas, or “tubercles.”¹ On October 16, 1926, in Boston, Harvey Cushing delivered a lecture titled “The intracranial tumors of pre-adolescence” to an audience of pediatricians in an effort to counter the prevailing sentiment that “operations were either fatal or gave bad results.”² One of the earliest textbooks dedicated to pediatric neurosurgical oncology was *Intracranial Tumors of Infancy and Childhood*, a 598-page collection of 100 cases, published in 1939, by Percival Bailey, Douglas N. Buchanan, and Paul C. Bucy from the University of Chicago Clinics.³

It is self-evident that the differences between pediatric and adult neuro-oncology are vast and striking. In his second edition of *Neurosurgery of Infancy and Childhood*, Donald Matson wrote that the many different tumors found in children “grow at different rates of speed and the diversity of location is sufficient so that there is a broad spectrum of different clinical syndromes.”⁴ Pediatric neu-

ro-oncology has advanced to such a stunning degree that it is difficult to imagine what it must have been like for the aforementioned authors to care for these children. Today, advances continue on all fronts, most notably with the arrival of the era of molecular neuropathology.⁵ This has resulted in a constantly expanding body of knowledge with diagnostic, prognostic, and therapeutic implications. Novel drug therapies are continuously being trialed and coming to market. As such, it is difficult for a pediatric neurosurgeon to stay abreast of all the advancements being made and how it impacts their surgical decision-making. In fact, some may feel that the “art and science” of pediatric *neurosurgical* oncology has been, to some degree, eclipsed by the shadow of progress achieved in other areas. Herein we announce the creation of a new organization, the Society for Pediatric Neurosurgical Oncology (SPNO), its mission, and the reasons why we feel it is needed.

Why Another Organization?

Despite its small size, neurosurgery has many professional organizations. Within pediatrics, there are general societies, such as the Congress of Neurological Surgeons/American Association of Neurological Surgeons (CNS/AANS) Section on Pediatric Neurological Surgery, International Society for Pediatric Neurosurgery (ISPN), and American Society of Pediatric Neurosurgeons (ASPN). Specific to neuro-oncology, neurosurgeons can find opportunities through organizations like the Pediatric Neuro-Oncology Consortium (PNOC), Children's Oncology Group (COG), and Society for Neuro-Oncology (SNO).

So why create another organization? First, as stated previously, the field of neuro-oncology is advancing at a pace that makes it challenging for pediatric neurosurgeons to stay up-to-date. Some of us work within institutions with multidisciplinary neuro-oncology programs, making it easier to be well informed and develop treatment strategies. For others who do not work within multidisciplinary programs, it may be more challenging. The SPNO will serve all surgeons who have a special interest in caring for children with tumors. Second, beyond staying current with new developments, there are many facets—a presurgical



FIG. 1. Domains needed for a surgeon to attain surgical excellence.

“checklist,” if you will—that a surgeon needs to consider for achieving an optimal outcome for the patient (Fig. 1). Creating a platform that allows surgeons to discuss cases openly can reaffirm or alter one’s surgical strategy and offer valuable teaching points to all. Current pediatric neurosurgical or oncological organizations do not have the bandwidth to delve into the many layers that make up pediatric neurosurgical oncology (Fig. 1). Understandably, they encompass all aspects of our specialty, not just oncology. So, while each organization may have sessions dedicated to oncology at their annual meetings or informal subgroups, these are limited in their scope and time. Neuro-oncological societies are, not surprisingly, driven by nonsurgeons and focus much of their efforts on emerging pharmacological therapies, relegating neurosurgical issues or interventions to a limited role.

The SPNO will be first and foremost a surgically focused organization. Naturally, it will be a society geared toward those who have an interest in caring for children

with tumors of the nervous system. Unlike the other societies, it will have the ability to absorb all pertinent surgical topics and controversies. This is not to say that our membership will be exclusive to neurosurgeons or that only neurosurgeons will attend the SPNO meetings. Surgical excellence is dependent on a multidisciplinary approach, such as oncology, neuroradiology, and intensive care. The SPNO will unite experts, resources, and focus advocacy efforts to elevate pediatric neurosurgical oncology in a thoughtful and strategic manner. It is our hope that the SPNO will be a global effort (Fig. 2). This global perspective would enable the sharing of best practices, the development of international research partnerships, and the implementation of standardized protocols that can be adapted to different healthcare systems. Our goal is to grow the SPNO organically at its own inherent pace. We wish to create a long-lasting, valued organization, defined by high-quality output (e.g., conferences, publications).



SOCIETY FOR PEDIATRIC NEUROSURGICAL ONCOLOGY

FIG. 2. Logo of the SPNO depicting a child with a pineal region mass and global effort to improve the lives of children with brain and spinal tumors. Logo of the Society for Pediatric Neurosurgical Oncology used with permission.

Mission of the SPNO

The mission of the SPNO will be to advance the understanding, treatment, and care of children with brain, spine/spinal cord, and peripheral nerve tumors to achieve surgical excellence. We define “surgical excellence” as performing the right operation for the right patient at the right time while making every effort to mitigate surgical morbidity. We will achieve our mission through a 4-prong strategy: 1) education, training, and knowledge sharing; 2) collaborative research; 3) advocacy and support; and 4) promoting excellence in care.

Education, Training, and Knowledge Sharing

As stated previously, brain and spinal tumors in children are diverse anatomically, pathologically, and in their response to therapies. This diversity, coupled with emerging information and bias (institutional and provider), can make it challenging to determine the optimal treatment. This is evident by the fact that families often receive differing opinions from one institution to another. The SPNO will bring together key stakeholders so we can learn from one another in an open and supportive forum. In 2023, the first symposium dedicated to pediatric neurosurgical oncology was held in Memphis, Tennessee. In many ways, the success of that meeting led directly to the creation of the SPNO. We plan in-person conferences annually or biannually, with the next meeting in September 2026. We have already established a successful monthly tumor board where instructive cases are presented and thoroughly vetted.

Collaborative Research and Publications

Research and publications will be a cornerstone of the SPNO. Multi-institutional research is time consuming and requires patience, persistence, and organization. As the SPNO will bring together not only neurosurgeons, but also members of other allied specialties, this creates an opportunity for research. The SPNO will have a small, but highly focused and dedicated membership, a critical element for collaboration. Our goal is to have new research pre-

sented at each meeting, identify new projects, and publish our efforts in key journals annually. By pooling resources and expertise, our hope is that our society can accelerate the pace of discovery and translate research findings into clinical practice more efficiently.

Advocacy and Support

The SPNO will serve as a vehicle for advocacy and support. Independently or in partnership with other professional or family-led organizations, we plan to raise awareness and elevate the discussion on key topics. Current examples include partnering with the Posterior Fossa Society to create a manuscript on posterior fossa syndrome risk reduction strategies and working with the North American Skull Base Society to establish a consensus statement/practice guidelines for pediatric craniopharyngioma. While other surgical specialties are farther along in outcome reporting (e.g., Society of Thoracic Surgeons with their Congenital Heart Surgery Database, www.sts.org/publicreporting), we are currently focused on building the necessary foundation. One of our objectives is to establish surgical strategies and outcome standards, which could serve as a foundation for future metrics, ultimately enabling meaningful and transparent reporting among institutions.

Promoting Excellence in Care

The overarching purpose of the SPNO will be to promote excellence in the surgical care of children who have nervous system tumors. As in other areas of pediatric neurosurgery such as epilepsy, neurosurgical oncology has become so complex and multifaceted that specialized focused care within practice groups will result in better planning, execution of strategy, and outcomes. By coming together, the SPNO will foster a culture of excellence, and members will effectively hold each other to a high surgical standard. As we learn from each other, each of us will take that knowledge and hopefully implement it in their clinical practice.

The establishment of the SPNO is both important and necessary to advance the care and outcomes for children with nervous system tumors. Such a society will bring together specialized expertise, foster research and innovation, serve advocacy and support roles, provide education and training, and facilitate global collaboration. By addressing these critical needs, we hope that our society, along with others, will play a pivotal role in improving the lives of the most vulnerable patients. Whereas Bailey et al. dedicated their monograph to their mentor and father of neurosurgery, Harvey W. Cushing,³ and Matson dedicated his textbook to the residents he trained,⁴ we dedicate the SPNO to all the patients, families, and caregivers from whom we continue to learn and for whom we strive to provide the best care.

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Disclosures

The authors report no conflict of interest.

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