

P.162**Neurosurgical trialists are not as diverse as the participants they enroll: A systematic sampling review**

I Churchill (Ottawa) T Sue (Ottawa) E Leha (Ottawa) DA Peters (Ottawa) J Lampron (Ottawa) EK Wai (Ottawa), EC Tsai (Ottawa)*

doi: 10.1017/cjn.2022.244

Background: Diversity of healthcare personnel has been associated with improved care of diverse populations. To determine whether neurosurgical clinical trialists were as diverse as the populations they treated, we investigated the sex/gender and race/ethnicity of participants and compared them to authors of randomized controlled trials (RCTs) in neurosurgery, orthopedic surgery, general surgery and plastic surgery. **Methods:** Embase and MEDLINE were systematically searched from 2001 to 2021. RCTs were limited by impact factor and selected using a series technique. Data on author and trial characteristics were extracted independently and in duplicate, and compared for each speciality. **Results:** 1548 articles were included. Interim analysis revealed the mean proportion of women authors was lowest in neurosurgery (5%) and highest in plastic surgery (50%). Trialists that were most reflective of their participants sex/gender were general surgery (42% authors vs 46% participants) and plastic surgery (50% authors vs 66% participants). 94% of RCTs did not report participants' race/ethnicity. No RCTs excluded participants based on sex/gender or race/ethnicity. **Conclusions:** Compared to other surgical fields, neurosurgery had the poorest correlation of author sex/gender with the population being studied. Efforts are needed to improve the diversity of neurosurgical trialists, access to RCTs for underrepresented groups and standardized reporting of participants' race/ethnicity.

OTHER NEUROSURGERY**P.163****Endoscopic third ventriculostomy for VP shunt malfunction during the third trimester of pregnancy: illustrative case**

A Alhaj (Montreal) T Al-Saadi (Montreal), R Dudley (Montreal)*

doi: 10.1017/cjn.2022.245

Background: Endoscopic third ventriculostomy (ETV) is a successful procedure for treating noncommunicating hydrocephalus as an alternative to initial ventriculoperitoneal (VP) shunt placement and as a salvage procedure when a VP shunt fails. Physiological changes of pregnancy can lead to VP shunt failure and complicate the management of shunt malfunction, particularly in the third trimester. **Methods:** Case report: ETV was successfully used in the third trimester (31 weeks of gestation) of pregnancy for acute hydrocephalus due to VP shunt malfunction, and the patient went on to deliver a healthy baby at term; the

patient remained well in the long-term follow-up. An English-language PubMed literature review revealed four cases of VP shunt failure successfully treated with an ETV in the first or second trimester but no such reports in the third trimester of pregnancy. **Results:** This case report adds to the sparse literature regarding the use of an ETV to treat VP shunt malfunction in the third trimester of pregnancy. This appears to be a unique first-time report of the use of an ETV during this specific challenging prenatal period. **Conclusions:** ETV appears to be a safe and effective alternative to VP shunt replacement in the late prenatal period of pregnancy in well-selected candidates.

P.164**Analysis of MNI OR log book over Dr Wilder Penfield's Career: Practice profile of epilepsy cases**

E Zambrano (Montreal) J Hall (Montreal), L Martin-Brage (Montreal)*

doi: 10.1017/cjn.2022.246

Background: Dr. Penfield was a pioneer in neurosurgery and his contribution continues to impact the practice today. Our objective is to analyze the epilepsy surgeries during his career. **Methods:** Analysis of original operating room books from 1934-1960. **Results:** He performed 2338 procedures during his career. 601 (26%) epilepsy, 524 (22%) oncology, 441 (19%) general neurosurgery, 379 (16%) functional, 230 (10%) spine, 80 (3%) trauma, 54 (2%) vascular, 29 (1%) nerves.

Epilepsy cases were divided: local vs. general anesthesia and a focal resection or lobectomy. From 1934-1945 he performed 167 procedures, 146 local anesthesia with focal resection. From 1946-1950 223 procedures, introduction of lobectomies with 30. Most right-side procedures under general anesthesia. From 1951-1955 152 procedures, 88 focal resection, 64 lobectomies. From 1956-1960 59 surgeries, similar number of focal resection and lobectomies. **Conclusions:** To our knowledge this is the most complete and comprehensive account his surgical career. In early years patients were treated through large craniotomies with EEG stimulation to tailor focal resections now known as the "Montreal procedure". This led to a better understanding of human cortex and the division of the brain functions. During later years, there was a reduction in the number of cases done under local anesthesia and increase in lobectomies.

P.165**Using artificial intelligence to quantify dynamic retraction of brain tissue and the manipulation of instruments in neurosurgery**

T Martin (Montreal) G El Hage (Montreal), MW Bojanowski (Montreal)*

doi: 10.1017/cjn.2022.247

Background: There is no objective way to measure the amount of manipulation and retraction of neural tissue by the surgeon.