HISTORY AND LEGACY OF 150TH HARVEY WILLIAM CUSHING

TELLES JPM, BRITO JS, SIMÕES IS, ROSA LM, KILESSE CTSM, HUSNI MC, FARIA JL, RABELO NN

AANS 2020 E-Poster (ID: 39773)
Disclosure

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Harvey William Cushing was born on April 8, 1869, in Cleveland, Ohio. He was the tenth son of Bessie Maria William and Henry Kirke Cushing. Descendant from a family of doctors; Cushing was a clinical expert and surgeon, having contributed to the most diverse areas of medicine, with emphasis on neurology and neurosurgery, which is why he was eternalized as the father of modern neurosurgery.

This historical note aims to report Dr. Cushing's contributions to the development of modern neurosurgery.
METHODS

We searched articles written by Cushing (April 8, 1869 – October 7, 1939) or about him and his obituary.
1891 – Cushing completed his Bachelor of Arts degree and he was admitted to study medicine at Harvard Medical School.

In Massachusetts General Hospital, he developed the so-called "ether chart", continuous monitoring of vital signs - pulse and respiratory rate - during surgery and he was pioneer in implantation of the radiography.

In Johns Hopkins Hospital (JHH), a meticulous surgeon known as the father of modern surgery who has made significant advances in aseptic technique, has contributed to the technical improvement of Cushing.
He studied in London and Liverpool, the intracranial pressure and brains of monkeys, in addition to having begun to use the sphygmomanometer to control blood pressure during surgeries.

In Bern, Cushing conducted research and published his classic work on the impacts of intracranial hypertension on vital signs. The set of arterial hypertension, tachycardia, and the altered respiratory pattern was known as the Cushing’s triad.

In 1902, his clinical and laboratory investigations resulted in the book “The Pituitary Body And Its Disorders.”
In 1905, he founded the Hunterian Laboratory, in which he performed experimental research as he taught comparative medicine. In the year 1908, he published a monograph Surgery of the Head – one of the most influential works in neurosurgery at the time.

Cushing made several contributions to the surgical technique and hemostatic control, such as pneumatic tourniquets and the introduction, in 1926, of electrocautery cuts in surgeries of highly vascularized tumors. His significant contribution was in 1910, introducing Cushing's hemostatic clips into neurosurgery. They are used to date in thin vessels of difficult access.
Cushing was noted for several interventions, such as the surgical procedures in the pituitary through a than frontal and transsphenoidal incision performed in patients with acromegaly and gigantism. Their significant contribution, however, was also at a clinical level, when describing the disease and Cushing's syndrome, due to excess glucocorticoids, in 1932.

In 1967, the Harvey Cushing Society would become the American Association of Neurological Surgeons (AANS), as it remains to the present day.
The name Cushing has been eternalized in several eponyms, such as Bailey-Cushing syndrome, which consists of deficits in motor coordination and balance, the Neurath-Cushing syndrome, related to gigantism and prepubertal adiposogenital dystrophy, Cushing's law and Cushing's symphalangism and Rokitansky-Cushing's ulcer.

The author's legacy includes the publication of 13 books and 300 scientific articles.
Conclusions and summary points

✣ Harvey Cushing will always be remembered for medicine as a pioneer and innovator;
✣ His legacy that persists in the annals of history and daily medical practice, either surgical or clinical;
✣ Their contributions helped reduce deaths in surgery and introduced concepts that are currently applied in the understanding of phenomena such as intracranial hypertension and increased glucocorticoids.