

Kenneth Grant Jamieson (1925–1976): his life and contributions to neurosurgery

Historical vignette

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Kenneth Grant Jamieson is celebrated as one of Australia's top neurosurgeons. His most notable contributions to neurosurgery included novel treatments of aneurysms and pineal tumors and studies of head injury. Jamieson was also an innovator for the development of new neurosurgical instruments and renowned for his teaching abilities, prolificacy, and mentorship. This preeminent neurosurgeon's life was cut short at the age of 51. Our current understanding and knowledge of treatments of various neurosurgical diseases is based on pioneers such as Kenneth Grant Jamieson. (DOI: 10.3171/2011.9.JNS11879)

KEY WORDS • history • neurosurgery • Australia • Kenneth Grant Jamieson

DR. Kenneth Grant Jamieson (Fig. 1) holds a prominent place in the history of Australian neurosurgery. Jamieson was a pioneer in the treatment of intracranial aneurysms and a neurosurgical innovator who developed new surgical techniques to operate on previously inoperable pineal region tumors. Additionally, Jamieson contributed much of his career toward the prevention of head injuries related to road trauma.

Jamieson was born on January 2, 1925, in Hawthorn, Melbourne, Australia, to a Presbyterian family.¹ He was the second child of his father Aurbey Carlyle Jamieson, a machinery merchant, and mother Christine Jamieson. He married Margaret Irene MacKinlay on March 26, 1949, at the Frank Paton Memorial Church, Deepdene.²

Premedical Education

Jamieson was academically talented. In 1938, at the age of 13, he won a junior scholarship to Scotch College, Melbourne, where he excelled academically and in rowing. He won further scholarships to the Ormond College in 1943 at the University of Melbourne,² and later Education department senior scholarship, and entered the faculty of medicine. He showed great leadership qualities. At the school level he was vice captain of "Monash House," editor of school the newspaper *Satura*, served on the committee of the school magazine *The Scotch Collegian*, and was a member of the student council in Ormond College at the University of Melbourne.^{1,2}

Medical Education and his Role as a Neurosurgeon

Jamieson was selected for senior scholarship from the Education Department and began studying medicine at the University of Melbourne. He performed superbly and won scholarships every year. After his graduation, he joined The Royal Melbourne Hospital in December 1948. Here, he developed a deep interest in the neurological sciences. In 1953–1954, he worked as a part-time researcher at the Baker Medical Research Institute, Alfred Hospital, and also taught surgery and pathology at the University of Melbourne. At the Royal Melbourne Hospital, he was greatly influenced by the neurologist Dr. Graeme Robertson and the neurosurgeon Dr. Reginald Hooper. Their guidance and encouragement inspired him to become a neurosurgeon. At the Alfred Hospital, he worked as assistant neurosurgeon with Dr. Reginald Hooper from 1952 to 1953 and with Dr. Hugh Trumble from 1954 to 1955.¹ He worked at The Royal Melbourne Hospital until 1955. In 1956, Jamieson went on a 16-week world tour to various neurosurgical units in Europe and North America.² Later that year, he was jointly appointed as the first neurosurgeon to The Brisbane Hospital (now The Royal Brisbane Hospital), The Brisbane Children's Hospital (now The Royal Children's Hospital, Brisbane) and Princess Alexandra Hospital in Queensland,¹³ and the post of Lecturer in the Faculty of Medicine, University of Queensland. He was awarded a Doctorate of Medicine in 1967 by the University of Melbourne, Doctorate of Sur-

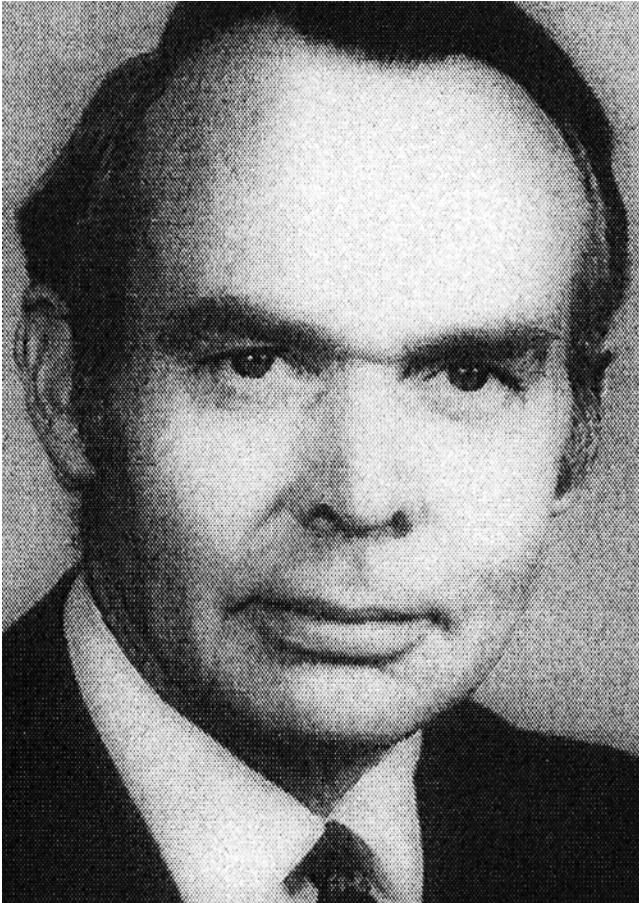


FIG. 1. Photograph of Dr. Kenneth Grant Jamieson (1925–1976). Reprinted from *J Clin Neurosci* 11, Simpson D: Jamieson “Ladye Jayne” temporary vascular clip and applicator (Cushing/Cairns artery forceps), 935–936, Copyright (2004), with permission from Elsevier.

gery by the University of Queensland in 1975, Fellow of Royal Australasian College of Surgeons in 1963, and Fellow of the American College of Surgeons in 1970.

Jamieson’s hard work, dynamic personality, enormous potential, and leadership qualities led him to establish an internationally recognized neurosurgical unit in 1960 and Department of Neurology and Neurosurgery in 1962 at The Royal Brisbane Hospital. He was a firm believer in teamwork involving the nursing staff, radiologists, neurologists, and anesthesiologists. As a great visionary, besides neurosurgery, he also worked toward the improvement of standards in the Department of Anesthesia at The Royal Brisbane Hospital. Jamieson always advocated the need for special training for the nurses working in the neurosurgical unit. He expressed his views concerning the lower standards of neurosurgical nursing and prolonged convalescence needed for neurorehabilitation in his poem “Hope,”⁴ which he had composed to deliver a strong message:

A man with a broken right femur
Was strung up for months like a lemur
He read comic papers,
Indulged in odd capers,
Behaved like a regular screamer.
The nurse in the ward was unworried-

The time lapse left her quite unflurried;
‘For femurs to knit
It takes time, and it
Is something that just can’t be hurried’
But men who from head blows are reeling
May lie but a few days unfeeling
When every young nurse
Will look for the hearse-
Yet brains too take some time in healing

The Jamieson Approach

Dr. Jamieson developed neurosurgical approaches to previously inoperable pineal region tumors.⁸ For perspective, the history of pineal tumor surgery dates back to 1905^{3,4,12,14–16} when Victor Horsley attempted infratentorial approaches to remove pineal tumors, although unsuccessfully. In 1910, Ludwig Pusep used an occipital transtransverse transtentorial approach to remove pineal tumors by dissecting the transverse sinus and tentorium.¹⁴ In 1913, Fedor Krause used an infratentorial-supracerebellar approach with the patient in the sitting position. In 1921, Walter E. Dandy described the posterior interhemispheric transcallosal approach to pineal tumors.³ In 1931, Van Wagenen described a direct transcortical temporo-parietal, transventricular surgical approach, while Gilbert Horrax in 1937⁴ described the occipital and partial temporo-parietal lobectomy with the drawbacks of these surgical approaches being visual field defects and seizures. Eventually, the occipital lateral transtentorial approach was described by Heppner in 1959 and popularized by Poppen in 1966.^{15,16} Jamieson modified this approach by going closer to the midline, modifying the tentorial cut, and changing the positioning.^{6–8}

In his paper on excision of pineal tumors,⁸ Jamieson described a larger exposure occipital paramedian transtentorial approach for the removal of pineal gland tumors. The disadvantages of Poppen’s technique were poor visibility of tumor, increased morbidity, and permanent hemianopia. Jamieson modified his technique by mobilizing the occipital pole upward and laterally rather than using an approach from below. Consequently, retraction on the occipital lobe was minimized. Jamieson also popularized the “open-book-incision” in which he opened the tentorium away from the straight sinus, instead of excising a wedge of the tentorium, as in Poppen’s technique. The combination of these maneuvers resulted in less cerebellar retraction and better visualization of the third ventricle. Jamieson found this to be a superior technique as fewer veins were encountered inferomedially. Additionally, his morbidity rate was decreased and no longer did he have patients with postoperative hemianopia.

Neurosurgical Innovator

Jamieson was among the first neurosurgeons to report on the operative treatment of aneurysms of the vertebral and basilar arteries.^{6,7} Always an innovative thinker, Jamieson, in 1968, used a “slightly modified 5-cent women’s curl clips, bought from a chain store” (Fig. 2 upper) for temporary occlusion of the basilar artery and found it superior to the Scoville spring clips that were commonly

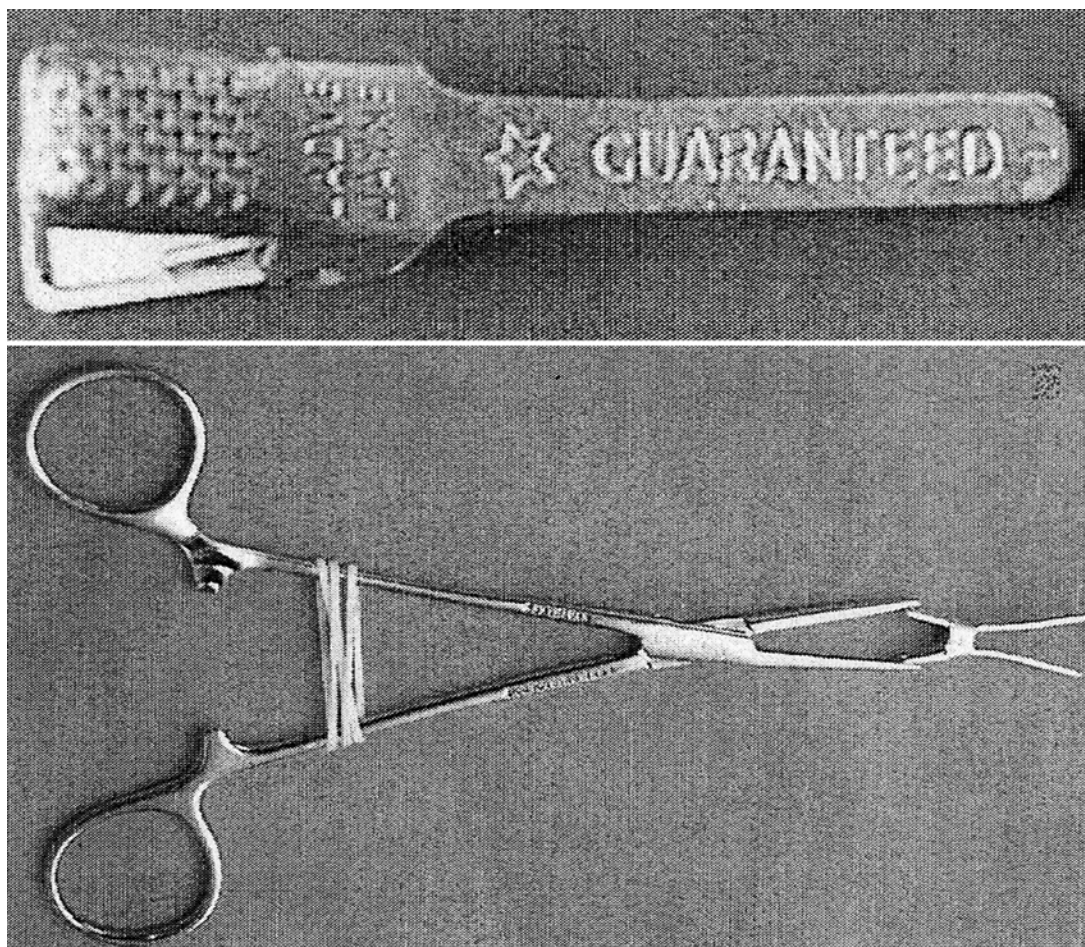


Fig. 2. Photographs of Ladye Jayne Women's curl clip used for the temporary occlusion of the basilar artery by Jamieson (**upper**), and the Ladye Jayne vascular clip held by straight artery forceps with a rubber band to keep it open by gentle compression (**lower**). Reprinted from *J Clin Neurosci* 11, Simpson D: Jamieson "Ladye Jayne" temporary vascular clip and applicator (Cushing/Cairns artery forceps), 935–936, Copyright (2004), with permission from Elsevier.

used.¹⁷ He used these clips by holding them in the jaws of a straight artery forceps and placing a rubber band around the handles of the forceps to apply gentle pressure on the clip. Such a device was used by Jamieson for temporary occlusion of the basilar artery (Fig. 2 lower).⁶

Contribution Toward Prevention of Road Trauma

Jamieson was considered a pioneering "accidentologist."³ His research emphasized the prevention of head injuries due to road trauma,^{5,9,11} the importance of using seat belts, use of crash helmets, and their effects on the pattern of injuries. He supported the training and use of paramedical staff and ambulance services at the sight of accidents to reduce the mortality rate. He earned the title "Patron Saint of Ambulance Officers" for his efforts and work toward the improvement of ambulance services.¹³ He also volunteered in training physicians in the management of head injuries related to road trauma. His neurosurgery unit served a million-plus miles of area, which included 1200 miles north, 300 miles south, 1000 miles west, and 1500 miles to the territories of Papua and New Guinea and New Caledonia in the Pacific. In all these

million-plus miles, there was no neurosurgeon outside of Brisbane to treat head injuries. Jamieson's neurosurgery unit served 2 million people in Australia and 2.5 million people from Papua and New Guinea. Coverage of such a vast area was only possible by collaborating with air ambulance services provided by the Royal Flying Doctor Services from Australia and other commercial services (D Simpson, personal communication presented at the Neurosurgical Society of Australasia Annual Meeting, Jamieson Memorial Lecture: "Ken Jamieson and the Sense of History," 2003). Due to his efforts, in 1968, laws were passed that limited the blood alcohol concentrations to 0.05% as the maximum permissible limit during driving and zero blood alcohol concentration for newly licensed drivers. He stressed the effects of alcohol consumption during driving and the use of breathalyzers in a paper published in 1968.⁵ In 1970 and 1972, he contributed to the mandatory use of crash helmets by motorcyclists and the compulsory use of seat belts.^{11,13} In association with the Australian Road Research Board in Brisbane, Jamieson began the "on the spot" research program, which involved an expert team of physicians and engineers who studied motor vehicular injury.¹ He was also the driving

force for the Brisbane 1000 study that analyzed the patterns and nature of such accidents. This project involved 1000 patients who were admitted to hospitals or died due to road trauma. This project was the first major research project on such a topic in Australia.² Jamieson's hard work and dedication led to the establishment of the Road Trauma Committee of the Royal Australasian College of Surgeons on May 17, 1965, and the Australian Resuscitation Council in 1975.² Ten days after his death, his efforts resulted in the establishment of the Steering Committee of the Australian Resuscitation Council on February 7, 1976.²

Academic Positions and Publications

Jamieson authored 55 papers and 7 monographs. His *First Notebook of Head Surgery* written in 1965 received wide acclaim.¹⁰ He was an exceptional teacher and always favored high quality education for medical and postgraduate students, as well as nursing and paramedical staff, and was a member of the Council of the Presbyterian/Methodist school association. Jamieson was considered one of the best lecturers at his institution, and was well known for his excellent presentations. In 1973, he was Bancroft Orator of the Queensland Branch of the Australian Medical Association. He served as a member of the Council of the Australian Association of Surgeons, was President of the Neurosurgical Society of Australasia from 1971 to 1973, was a member of the council of the Royal Australasian College of Surgeons in 1971 and again in 1975 and examiner in neurosurgery from 1974 to 1976. He was member of the Australian medical association since its establishment, and the British Medical Association for 27 years. He was an honorary member of the Traffic Injury Committee of the National Health and Medical Research Council, Royal Australasian College of Surgeons Road Trauma Committee; the Australian Medical Association's Road Trauma Committee and served as representative of the Pacific area of the International Association for Traffic Medicine.¹³

Role as a Surgical Instrument Collector

Jamieson was one of the founders of the Neurosurgical Society of Australasia's collection of neurosurgical instruments (D Simpson, personal communication, August 2003). At the Neurosurgical Society of Australasia's 30th annual meeting in Perth, Jamieson presented a pocket set of surgical instruments, which included a hand trephine and a skull saw. This collection contains more than 70 instruments ranging from a 17th century brace and perforator, which was made in Montpellier, to modern era Sugita clips (D Simpson, personal communication presented at the Neurosurgical Society of Australasia Annual Meeting, Jamieson Memorial Lecture: "Ken Jamieson and the Sense of History," 2003). The Neurosurgical Society of Australasia's collection also includes a brace and bit designed by French surgeon Eugène Doyen; a Cairns pituitary knife developed by Dr. Hugh Cairns, a neurosurgeon from South Australia and made by the Lewis Brothers of Maylebone High Street, London; and

a Phillip Wrightson's cannulae used to implant Yttrium seeds into the pituitary fossa.¹⁷

Honors

Jamieson died on January 28, 1976, at the age of 51, due to myocardial infarction. In his memory, the neurosurgical unit at Royal Brisbane Hospital was named after him at the request of his medical staff. The Royal Australasian College of Surgeons awarded him a medal in 1976. The annual scientific meeting of the Queensland State Committee of the Royal Australian College of Surgeons was also named after him. St. Andrew's War Memorial Hospital established an educational fund in memory of Jamieson for postgraduate and nursing training. The Neurosurgical Society of Australia also organizes the annual "Jamieson Memorial Lecture" to remember this pioneer. On February 20, 1976, the Council of The Queensland Branch of the Australian Medical Association paid tribute to Jamieson by concluding:^{2,13}

It is true to say that there was probably no doctor in Queensland more capable of original thought than Dr Jamieson, none more capable of the hard work necessary to develop his ideas and produce the personality, drive and persistence to achieve practical results based on the evidence he had established. This council tonight by this minute honours one of the members of the Association, who contributed as few others have to the welfare of the community in those fields into which his able enthusiasm led him, and places on permanent record his contribution to his own profession and to the entire community.

Disclosure

The authors report no conflict of interest concerning the materials or methods used in this study or the findings specified in this paper.

Author contributions to the study and manuscript preparation include the following. Conception and design: Tubbs, Mortazavi, Fisher. Acquisition of data: Mortazavi, Deep. Drafting the article: Mortazavi, Deep. Critically revising the article: all authors. Reviewed submitted version of manuscript: all authors. Approved the final version of the manuscript on behalf of all authors: Tubbs. Administrative/technical/material support: Tubbs. Study supervision: Tubbs.

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Manuscript submitted May 23, 2011.

Accepted September 25, 2011.

Please include this information when citing this paper: published online October 28, 2011; DOI: 10.3171/2011.9.JNS11879.

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