

Brain Surgery

Brilliant Teamwork by Canadians in Various Medical Branches Keeps Wound Mortality Low

By **IVERS KELLY**

The brain and its functions have become less of a mystery during this war, with its hundreds of head injuries and gunshot wounds. Canadian Army medical officers have contributed to this advance, and their achievements have won accolades from both the British Government and British scientific bodies.

Early in the war the Canadian Army established in the south of England, on the beautiful estate of Lord Camrose, a neurological and neurosurgical or brain-surgery hospital which has been acknowledged to be second to none in the entire world for neurosurgery of war.

The only miracles skilled brain surgeons have acknowledged in this hospital were cases of young, healthy men regaining, by sheer perseverance and will, functions seemingly lost or impaired forever. There is a pilot who suffered a deep, wedge-cut in the top of his head by a speeding propeller and was paralyzed in both legs and one arm. He fortunately was only a few miles from No. 1 Canadian Neurosurgical Hospital, where surgeons made a "routine operation" to stop the bleeding, remove damaged brain, and close the wound. Then his re-education started. He had to learn to use remaining function to better advantage and to move his legs and his paralyzed arm.

Physiotherapy Helps

Physiotherapy helped enable him to graduate from bed to wheelchair, then to walking, with two nurses, "live crutches" each with an arm around him, then to walking with one, and now to a cane he often discards.

Chief neurosurgeons at Basingstoke who directed this work were Col. W. V. Cone of McGill University neurosurgical staff, and his successor in November, 1941, Lt.-Col. E. H. Botterell, OBE, of Toronto. He was chief in surgery until late in 1944, when he was succeeded by Lt.-Col. O. W. Stewart, who was on the staff of Montreal Neurological Institute when he enlisted.

The medical part of the Neurological Hospital was the neuropsychiatric service. Here were treated many servicemen suffering from neurological diseases as well as those unfitted to adjust themselves to service life. Successive chiefs in neuropsychiatry were Dr. Colin Russel, McGill; Lt.-Col. H. H. Hyland and Lt.-Col. J. C. Richardson, MBE, of Toronto, and Lt.-Col. Charles Gould, Vancouver.

Plastic surgery, under the direction of Lt.-Col. Stuart Gordon and Lt.-Col. Lyman Barclay, was included in Basingstoke Neurological and Plastic Surgery Hospital as the set-up was completed in the spring of 1943.

Teamwork Counts

One of the many cases which show how closely plastic and neurosurgeons co-operated was a young Canadian soldier shot through the eye, the missile penetrating through the frontal sinus and into the brain, causing a large opening in the forehead. The neurosurgeon first removed the damaged portion of brain, cleansed the wound by standard neurosurgical technique developed before the war, and removed fascia, a fibrous tissue, from the leg to repair the membrane in which the brain is encased. The plastic surgeon rotated a flap of skin from the opposite side of the forehead to cover the wound, which was unable to supply blood to a free graft of skin. The donor site, from which the skin flap had been rotated, was covered by a free graft of skin and subcutaneous tissue from the thigh.

Mobile Unit Set Up

Except for about 25 cases of gunshot wounds, to head and spine who returned from Dieppe in August, 1942, the surgical work at Basingstoke until the invasion was the same type as in prewar days. Before D-Day a mobile neurosurgical unit was set up by RCAMC to accompany the Canadian Army into the field. During the fighting on the beaches unoperated wounded were evacuated to Basingstoke. As soon as the bridgehead was established operations were performed in the mobile unit almost literally under the enemy's guns, and patients rarely required further surgical work when they reached Basingstoke.

Major W. S. Keith of Toronto was in charge of the No. 1 Canadian Mobile Neurosurgical Unit. Another Canadian surgeon, Major Harold Slemon, was seconded early in the war to the RAMC, which later placed him in charge of the neuro-

surgical mobile unit of the British 8th Army.

If a patient survives his brain injury long enough to be taken to a neurosurgical unit, his chances of survival are good. The mortality in this war has been low. The practice in Britain and in the Canadian and British armies was to evacuate serious head-injury patients to the first unit at which effective neurosurgery could be carried out.

Only Part of Team

Neurosurgeons emphasize that they are only part of a neurosurgical team which includes specially trained radiologists, anaesthetists, nurses, and orderlies, and, that a person who suffers a serious head injury has a better chance of survival if he can be moved to a neurosurgical unit.

Neuro-radiographers are trained to estimate the exact angle at which X-ray pictures must be taken in order to show the affected area. They must take into consideration each skull's different contour or configuration, which affects the required angle.

In each field of surgery the anaesthetist must know the surgeon's requirements. The brain-surgeon demands that the patient have a clear airway — easy, clear, unobstructed breathing — at all times. An anaesthetist's technique is further restricted in brain surgery because he must not be in the way of the surgeon working at the head. Major E. H. Ainslie of Toronto was anaesthetist to the neurosurgical service at Basingstoke.

A tradition of exacting, devoted nursing care was established at Basingstoke under the direction of Matrons Moira McDonald, A. MacLeod, Doris Kent and Frances Charlton.

Surgeons and other doctors meet the first two problems in neurosurgical cases, the brain wound and the danger of infection. Surgery is only the initial step; it is the care by nurses and nursing orderlies, by physiotherapists and occupational therapists, sometimes over periods of months, that causes surprise and delight at how completely many healthy young men have recovered from serious brain and spinal cord wounds.

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