SURGERY

Surgery After Heart Stops

A BRAIN TUMOR has been removed from a patient whose heart stopped just before surgery began.

The surgeons who performed the operation, Drs. Alfred Uihlein, Robert G. Lippert, and John S. Welch of the Mayo Clinic, Rochester, Minn., believe the operation was successful because they subjected the patient to hypothermia (lowering of the body temperature).

If the heart stops, the brain is quickly damaged. The Mayo surgeons used hypothermia to minimize this brain damage.

The case history of their 35-year-old, male patient, reported in the Proceedings of the Staff Meetings of the Mayo Clinic, 35:82, 1960, included several head injuries and convulsive seizures. Laboratory tests showed a lesion on the under side of the brain. This lesion had pushed the brain slightly askew. Surgery was needed to remove the lesion.

While the general anesthetic was being given, the man's heart stopped. Immediately his chest was opened under unsterile conditions and the surgeon began heart massage.

After 30 to 60 seconds, the heart began to beat regularly. Two and one-half minutes after the heart had stopped there was a pulsation in the wrist again. Blood pressure, pulse and breathing were stable within 35 minutes after the chest incision was closed.

Now the question arose: Should the patient be subjected to the added physical shock of an operation?

The brain was already in danger of damage from the earlier heart arrest. Pressure inside the brain, purposely introduced during one of the pre-operative tests, might kill the patient or cause the heart to stop again if the space-occupying lesion was not removed immediately. The decision: continue.

A refrigeration blanket was wrapped around the patient, forcing his body temperature to drop four degrees in one hour. The tumor, containing blood and a small nodule, was then removed.

There was no sign of brain or nerve damage and the body temperature then was allowed to creep up to normal.

The patient made a rapid recovery. At the time of his discharge, his heart was behaving normally. He had a slight weakness in the left arm, but this had been severe before the operation. This condition was slowly disappearing.

Science News Letter, March 19, 1960

PUBLIC HEALTH

Ragweed Control Urged

WAGING an organized weed control program every year can help a community rid itself of ragweed pollen, which is responsible for the nation's 10,000,000 to 12,000,000 hay fever sufferers.

A few years of weed control would be all that would be necessary to reduce the growth of ragweed to a minimum, Charles N. Howison, executive secretary of the Air Pollution Control League of Greater Cincinnati, told the Weed Society of America meeting in Denver, Colo.

Hay fever caused by ragweed pollen pollution of the air, he said, is a preventable man-made disease of nationwide importance. Together with asthma it is the third most common chronic disease in the country, preceded only by heart disease and cancer, and is the one disease that can be traced to an air pollutant.

Ragweed is an annual and grows in every state. One plant can pollute the air with from five to eight billion pollen granules. One acre of ragweed fills the air with 50 to 60 pounds of pollen a season. One square mile liberates 16 tons of pollen.

Ragweed will not seed if destroyed before it flowers, Mr. Howison reported. Every plant destroyed before it blossoms reduces the volume of pollen pollution of the air.

Fortunately, he said, methods for the control of the plant are well known. Herbicides such as 2,4-D and others are available, effective, safe, easy and economical to apply.

Tests have shown that the toxicity of the pollen, as well as its volume, is greatly reduced the farther away it gets from the plant. Thus the closer the sufferer to the plant, the more irritating its pollen.

Cutting or destroying ragweed with chemicals during the growing season limits the source of fresh pollen and reduces the amount of fresh pollen that can reach the sufferer and cause irritation.

Every community, Mr. Howison said, can be made safer, healthier and more beautiful by waging an effective weed control program annually. Hay fever victims as well as everybody else will benefit by the eradication of this air pollutant, he said.

Science News Letter, March 19, 1960

TECHNOLOGY

Push-Button Lock Is Tamper-Proof

A TAMPER-PROOF lock to safeguard the custody of classified atomic secrets and other important documents has been developed by scientists of the British Atomic Energy Authority.

The lock has no key and the combination, unlike most safe combinations, cannot be detected by an attentive ear or deft fingers.

It operates by pressing four of 12 buttons, which operate in pairs. To open the lock, only two pairs have to be pressed.

It does not matter in which order the buttons of each pair are pressed, but both buttons of the first pair have to be operated before the two buttons in the second pair.

If a false move is made, or one of the second pair of buttons is touched before the operation of the first pair is completed, an electronic circuit is brought alive and sounds warnings wherever desired.

The buttons can be numbered or lettered, or both, so the code for opening the safe can be a combination of four letters or four figures or a combination of both.

The sequence of buttons for opening the safe can readily be changed, with a total of 4,356 possible combination variations.

Science News Letter, March 19, 1960

SCIENCE NEWS LETTER

VOL. 77 MARCH 19, 1960 NO. 12

Edited by WATSON DAVIS

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington 6, D. C., NOrth 7-2255. Cable Address: SCIENSERVC.

Subscription rates: 1 yr., $5.50; 2 yrs., $10.00; 3 yrs., $14.50; ten or more copies in one package to one address, 7½ cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

Printed in U.S.A. Second class postage paid at Washington, D. C. Established in mimeograph form March 13, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index. Member Audit Bureau of Circulation.

SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: William W. Rubey, U. S. Geological Survey; Wallace R. Brode, National Bureau of Standards; Douglas Whitaker, Rockefeller Institute for Medical Research. Nominated by the National Academy of Sciences: Harlow Shapley, Harvard College Observatory; Philip Bard, Johns Hopkins University, Henry Allen Moe, John Simon Guggenheim Memorial Foundation. Nominated by the National Research Council: Leonard Carmichael, Smithsonian Institution; John R. Dunning, Columbia University; Benjamin H. Willier, Johns Hopkins University. Nominated by the Journalistic Profession: Michael J. Ogden, Providence Journal-Bulletin; O. W. Riegel, Washington and Lee University. Lee Hills, Detroit Free Press. Nominated by the Scripps Estate: Edward J. Meeman, Memphis Press-Scimitar; Frank Ford, Washington, D. C.; Charles E. Scripps, Cincinnati, Ohio.

Officers—President: Leonard Carmichael; Vice President and Chairman of Executive Committee: Charles E. Scripps; Treasurer: Wallace R. Brode; Secretary: Watson Davis.

Staff—Director: Watson Davis. Writers: Helen Buechl, Ann Ewing, W. T. M. Grigg, Richard Litell, Allen Long, Jane Marye, Tove Neville, Gloria Tefft, Marjorie Van de Water. Science Youth Division: Joseph H. Kraus, Dorothy Schriver, Shirley Moore. Photography: Fremont Davis. Production: Priscilla Howe, Marcia Nelson. Syndicate Sales: Hallie Jenkins. Interlingua Division in New York: Alexander Gode, 80 E. 11th St., GRamercy 3-5410. Advertising Manager: Fred A. Moulton, MEtropolitan 8-2562.