

NEUROLOGY

Tumors Safely Removed

Tumors of the hearing nerve can now be removed safely without permanent facial paralysis by repairing the damaged facial nerve with skin nerve grafting, Faye Marley reports.

► **TOTAL REMOVAL** of acoustic neuromas (tumors of the nerve of hearing) can now be done safely and without the permanently disfiguring facial paralysis that formerly accompanied such an operation.

A second operation in which the damaged facial nerve is repaired by skin nerve grafting can offset the facial grimace that follows the original surgery. The grimace is caused by cutting the facial nerve.

Prof. Norman M. Dott, senior neurological surgeon, University of Edinburgh, Edinburgh, Scotland, emphasized the early diagnosis of acoustic tumors, in the phase when deafness is the only symptom, in his talk at the Second International Congress of Neurological Surgery in Washington, D.C.

The importance of complete removal, Dr. Dott explained, lies in the danger that hydrocephalus, an accumulation of fluid in the brain, may develop. This complication is present among one-fourth of the victims of acoustic neuromas, who have partial removal of the tumor to preserve their facial nerve.

Dr. Dott, who was a student of the famous Harvey Cushing, classed in medical literature as the "greatest neurological surgeon in America," said that when Dr. Cushing operated on tumors of the acoustic nerve he would alternate between complete and partial surgery.

"I had one patient," Dr. Dott told *SCIENCE SERVICE*, "a naval officer, who feared facial paralysis so much that he chose to risk the dangers of hydrocephalus rather than have the tumor totally removed. But he was one of the lucky ones."

Fifteen or 16 successful skin grafts have been done at Edinburgh University, Dr. Dott said, where the surgeons take skin nerve from the patient's leg for grafting onto the facial nerves. There is no damage to the leg.

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Surgery for Epilepsy

► **SUCCESSFUL** surgical treatment for epileptics whose seizures could not be controlled with pills and other medication has been reported by a Japanese neurological surgeon.

Dr. Dennesuke Jinnai of the University of Okayama School of Medicine in Okayama told the Second International Congress of Neurological Surgery in Washington, D.C., that 12 patients, some of whom had been followed up for nine months, had been cured of the dangerous jerking that accompanied their seizures.

Patients who became unconscious during seizures could not be cured by the treatment, however.

Cat experiments preceded Dr. Jinnai's work on human patients. He theorized that the jerking movements of the head, torso and limbs in a major epileptic seizure required only a few of the many brain pathways sending messages to the muscles.

By dividing a small group of pathways located in the depth of the brain, Dr. Jinnai and his co-workers were able to stop the convulsive jerking induced by powerful seizure-producing drugs.

First they located the exact point of operation by injecting substances opaque to X-ray. A small opening was then made in the skull, and small amounts of a mixture of a certain oil in wax was injected. The substance produced a gradually developing zone of destruction.

Dr. Jinnai reported that the gratifying feature of his work was that no paralysis resulted to prevent normal activities in spite of the destructive surgery.

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Surgery Without Cutting

► **RADIOSURGERY** on the brain without opening the skull was reported by Swedish and American neurosurgeons speaking at the Second International Congress of Neurological Surgery in Washington, D.C.

Proton beams from cyclotrons at Harvard and at the Werner Institute in Uppsala, Sweden, have performed successful "operations" without making a skin incision.

"We hope to avoid the existing dangers of hemorrhage or sepsis," Drs. Raymond N. Kjellberg and William M. Preston of Massachusetts General Hospital, Boston, said. In this way the death rate from certain types of brain surgery may be reduced.

Dr. Lars Leksell of Stockholm, Sweden, reported using proton beams instead of surgery in cases of patients with shaking palsy (Parkinsonism), schizophrenia, the most common mental disorder, and with intractable pain.

The neurosurgeons cautioned that the scarcity and expense of the cyclotrons would make such treatment rare. Also, only a small number of brain disorders could be treated in this way.

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MEDICINE

Nobel Medical Award To Ear Authority

► **THIS YEAR'S WINNER** of the Nobel Prize in Medicine, Dr. Georg von Bekesy of Harvard University, is the world's leading authority on the functions of the ear.

The 62-year-old Hungarian-born scientist

is senior research fellow in psycho-physics at Harvard and is not primarily a doctor of medicine although he holds an honorary M.D.

Dr. von Bekesy won the Nobel Prize for his work on the physical mechanism of stimulation within the cochlea, a cavity in the internal ear that resembles a snail shell. This cavity contains the important organs of hearing. These organs transform the vibrations received by way of the outer and middle ear into nervous impulses that are transmitted to the brain for translation into sound.

Hearing authorities say Dr. von Bekesy's outstanding contribution was in his development of the automatic audiometer in 1947, by which a person can trace his own minimal hearing level.

The von Bekesy type of audiometer is being used in hearing laboratories to develop tests for tumors of the auditory nerve. In this way a diagnosis of the cochlear and retrocochlear (behind the cochlea) functions can be made.

Dr. von Bekesy worked for many years in the research laboratories of the Hungarian Telephone System. He became interested, he once said, in the human ear when an economist asked him whether an improvement could be expected in the telephone system.

Another question of how much better is the ear than the telephone inspired him to glue tiny mirrors to the eardrum and record its response to sharp impulses. Then he pursued the problem into the inner ear itself, where he recorded and measured the traveling wave as it went along the ear membrane.

Among numerous awards Dr. von Bekesy has received was one of eight given in 100 years by the American Otological Society. The latest came coincidentally at the time the Nobel Prize of \$48,300 was announced, when the Deafness Research Foundation in New York gave him its Merit Award Medal, Oct. 19.

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NOBEL PRIZE WINNER—in medicine, Dr. Georg von Bekesy of Harvard University.