Health Secrets

Brain breakthroughs

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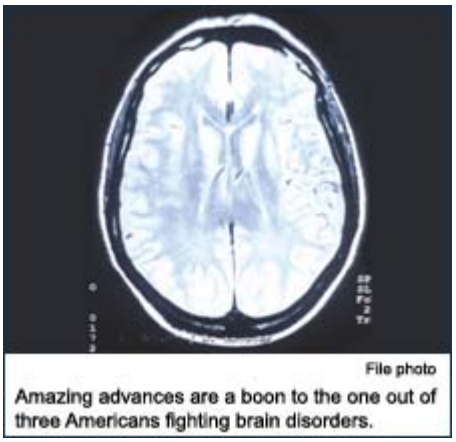

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Amazing advances are a boon to the one out of three Americans fighting brain disorders.

By Wendy J. Meyeroff
THE ERICKSON TRIBUNE

"Recent discoveries are revolutionizing our understanding of the human brain, and new uses for these discoveries are emerging almost every day," says Sen. Patty Murray (D-WA).

Murray is one of the coauthors of a bipartisan Congressional bill introduced this spring, seeking $200 million in funds for research and a clearinghouse on treating brain disorders, which affect one out of every three Americans.

Seeing inside more accurately

One of the greatest advances is imaging technologies that allow doctors to better pinpoint the problem's location in the brain. "CT scans and MRIs offer better views of bone and structural landmarks, and PET scans show blood-flow patterns," says Julie Pilitsis, M.D., Ph.D., director of functional neurosurgery at the University of Massachusetts Memorial Hospital in Worcester, Mass.

MRIs offer doctors some of the greatest options. A functional MRI (fMRI) shows exactly what's working as you move or talk. "If you move your right hand during an fMRI, we can map the area responsible for the movement. Using this map in surgery, we can watch out for areas we don't want to affect," says Eduardo Locatelli, M.D., M.P.H., director of the Florida Neuroscience Center in Fort Lauderdale, Fla.

Electrical stimulation

Electrical stimulation helps fight brain disorders like epilepsy, essential tremor, and Parkinson's disease. "We find the area of the brain affected and place electrodes (fine wires) deep in it," Pilitsis says.

Through several follow-up visits (usually over a few weeks), a pacemaker-like battery is inserted under the skin and then electrical charges are emitted. The doctors see which charges help fight the tremor, shaking, or seizures. The device is programmed to emit those charges regularly (sometimes shutting off during sleep). These devices are getting ever smaller and results are becoming better, with many people no longer needing medication.

Battling brain cancers

"Intra-operative MRI allows the surgeon to get a real-time picture of how tumor removal is progressing while the patient is in surgery. This reduces the need for re-operation later and increases the safety and effectiveness of the surgery, so hospital stays are shortened," says Kamal Thapar, M.D., Ph.D., a neurosurgeon and director of the Brain & Spine Institute at Sacred Heart Hospital in Eau Claire, Wis.

Surgeries like stereotactic radiosurgery (SRS) are destroying tumors. "Using SRS I target one high dose of radiation on the tumor," says David Baskin, M.D., professor of neurosurgery at Methodist Neurological Institute, Houston, Tex. It's done within one day instead of several doses of radiation over days or weeks, leading to fewer side effects and faster recovery.

"We've harnessed the immune system to attack the tumor through vaccines. It's an extremely promising treatment option which appears to have few side effects," says Andrew Sloan, M.D., associate professor of neurological surgery at University Hospitals-Case Medical's Ireland Cancer Center in Cleveland, Ohio.

Less dangerous surgeries

Less invasive brain surgeries are now available. "I had an older patient who developed a tumor pressing on her optic nerve, which would have meant spending her remaining years blind," Baskin says.

"In the old days I would have to make an ear-to-ear incision and lift her brain out to get to the tumor. That's very risky, especially in someone older, plus it meant up to two weeks in the hospital. But with a 2.4 mm endoscope I could access the tumor through one nostril. She stayed for 24 hours afterward, and she's fine," he adds.

Getting aggressive treatment

Brain surgeries that never would have been performed on anyone over age 60 are now available even to people much older. Unfortunately, many doctors still are not recommending more aggressive treatments for older adults.

Older adults have to seek out and demand more aggressive therapies, not just for tumors but for other brain disorders.

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