Brain corkscrew promises stroke c

WASHINGTON: One minute Gary Formanek was hitting balls at an Oregon driving range. The next, he was lying on the ground, his left side paralyzed from a stroke.

The only drug that treats strokes didn't help. So doctors snaked a tiny corkscrew into Formanek's brain and pulled out the stroke-causing clot.

The device that saved Formanek from disability, if not death, is generating excitement among brain experts who say the novel technology might finally offer hope for the most devastating strokes.

Called the MERCI Retriever, it's still experimental. But in early testing, it seems to restore blood flow in almost half of patients — people who couldn't be helped by today's only stroke-busting medication.

"We know the limits of current stroke therapy," says Dr. Vance Watson of Georgetown University Hospital, who pulled pea-sized clots out of a woman near death from a massive stroke after childbirth. The woman still has some arm weakness, but has largely recovered.

"You wouldn't get this result without this device. She was lucky," Watson says.

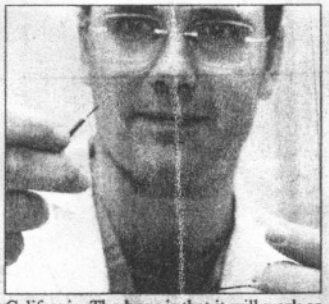
Dr. Sidney Starkman of the University of California, Los Angeles, recalls the first patient ever treated. Five usually staid doctors jumped up and down and high-fived as a man completely paralyzed for six hours began speaking on the operating table.

"It still brings chills to me," Starkman says.

More than 700,000 Americans will suffer strokes this year. Strokes are the nation's No. 3 killer, and the top cause of disability.

Acts as corkscrew: Some strokes are caused by bleeding in the brain. But the vast majority are ischemic strokes, caused when arteries feeding the brain are blocked. For those, the clot-busting drug TPA can mean the difference between permanent brain injury or recovery — but only if given within three hours of the first symptoms. Less than 5 percent of victims get TPA because they don't get specialized care in time or the clot is too big for TPA to bust.

Enter the MERCI Retriever, invented by UCLA scientists and licensed to Concentric Medical of Mountain View,



California. The hope is that it will work as late as eight hours after a stroke hits, and pull out bigger clots.

How? Specialists called interventional neuroradiologists thread a tiny tube inside a blood vessel at the groin and push it up the body and into the brain. Inside is a wire made of nitinol, a shape-remembering alloy, that promptly coils into a corkscrew shape as it's pushed out of the tube at the stroke's epicenter.

Pushed through the spongy clot, the twisted wire grips tight, like a corkscrew grips a wine cork. A tiny balloon inflates to temporarily stop blood flow — avoiding a second stroke if a piece breaks off the clot before it's removed. Doctors then gently tug backward on the wire until the clog dislodges and is sucked inside the tube.

The main concern is puncturing an artery, considered a very rare risk.

Scientists have long tried to create mechanical clot-busters: lasers to cut channels through the blockage; balloons to press open clots like cardiologists use in the heart; suction devices.

So far, each has problems. They're hard to fit through tiny, twisting brain arteries, and brain clots, which have the spongy consistency of a canned peach, can't just be pushed aside like harder plaque that causes heart attacks.

Concentric's retriever is furthest along in testing. Results of a study of 125 patients ineligible for TPA, conducted at some of the country's largest stroke centers, are due in February.

Time sensitive: Even if the device ultimately is approved for wider use, how

Study: Dad's genes may be to blame for some

WASHINGTON: A father's genes, already known to urge a developing embryo to grow faster and bigger, may be to blame in some cancers, researchers reported.

They found three different genes can help tumour cells grow if a basic early genetic process called imprinting goes awry.

The findings, published in the Proceedings of the National Academy of Sciences, could help explain at least some cases of the out-of-control cell growth that marks cancer.

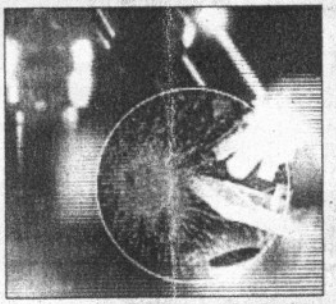
"It shows clearly that the father's genome seems to have an intrinsic ability to accelerate growth, whereas the mother's genome has the ability to retard growth," said Dr. Colin Stewart, an embryology expert at the U.S. National Cancer Institute.

"The two balance one another to give a normal growth pattern," Stewart, who led the study, said in a telephone interview. "But if the process is abnormal, it may contribute to the formation of some cancers."

Stewart's team investigated the genetics underlying imprinting. Usually, a baby inherits half its genes from the mother and half from the father.

The imprinting process ensures that, depending on the gene, either the mother's or the father's copy is the only one active. Imprinting is especially important in the development of a foetus, controlling how large it grows.

Doctors know a baby's size is the result of a tug-of-war between the parents' genes, with the father's contribution trying to make the baby grow as large as possible and the mother's acting as a brake.



Stewart said his team's findings show how this process works and how it may cause cancer when things go wrong.

"It may be involved in cancer in general. We don't know at present," he said. "Any imbalance of these particular genes may be important contributing factors to the development of cancer."

Broader implications: His team grew cells from mice that either had only the mother's genes active or the father's.

"We looked at the growth properties of these cells. What we found to our surprise was that cells with exclusively the father's genome grow faster. They show a very great propensity to suddenly grow malignant and form rapidly growing tumours ... whereas the cells with the maternal genome grow more slowly and eventually die."

Many different genes are known to be involved in cancer, but some genes underlie different functions in the body while others are more specific. The genes identified by Stewart may be involved in a general tendency,