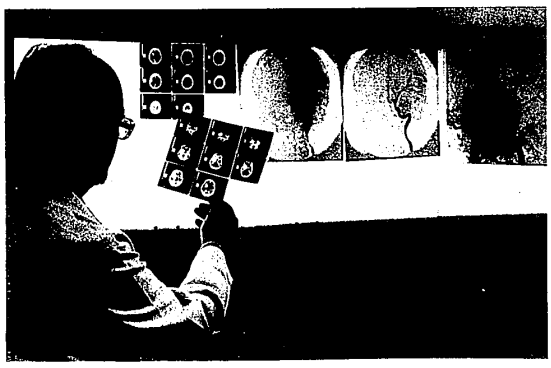

JOHN STANO

Dr. Manuel Dujovny checks X-rays of a patient he is about to operate on using the latest techniques in micro-neurosurgery.

# *New horizons*

# Doctor probes the brain through micro- surgery

MICRO-NEUROSURGERY has taken on an international flavor at Henry Ford Hospital.

Neurosurgeons from around the world have come to Henry Ford to study this life-saving technique under the watchful eye of Dr. Manuel Dujovny of West Bloomfield.

Dujovny, staff neurosurgeon at Henry Ford Hospital and director of its mirco-neurosurgery training program, is renowned for developing improved surgical clips, instruments and suture materials for micro-neurosurgery.

This operating procedure uses microscopes in brain and other neurological surgery. Until recently, it was performed only at a few leading medical centers. But today, neurosurgeons from around the world are gaining expertise in the specialized field.

"Until a few years ago, we could not perform such a delicate surgery on the brain because we have no way to see what we were doing and we didn't have the special, smaller instruments," explains Dujovny. "Now we are not only doing these procedures every day, but we are training others to do them tomorrow."

Dr. Dujovny (left) prepares to enter the brain of his patient with the aid of his operating team.

SURGEONS HAVE come from Canada, South America, Europe, Asia and Latin America to study with Dujovny and his associates. Many of them are sponsored by their own universities or governments. After several months of training, the neurosurgeons return to their own countries to practice.

The visiting neurosurgeons learn the precision technology of micro-neurosurgery under the tutelage of Dr. James Ausman, chairman of Neurological Surgery at HFH, Dujovny and their staff colleagues.

Dujovny says micro-neurosurgical procedures are performed in treatment, for example, of stroke victims who have identified blocked blood vessels in the brain.

In one such procedure, known as cerebal revascularization, neurosurgeons utilize the operating microscopes and work with specially developed surgical instruments to form a bypass around the blockage using a blood vessel lifted from the patient's scalp.

The vessels are approximately the size of the wire used for a large paper clip and the suture material is the thickness of a human hair.

In addition to his serving as program director of the micro-neurosurgery training program at HFH, Dujovny is also involved in caring for patients and is director of the Neurosurgical Research Laboratory at the hospital.

His special interests include neurogenic hypertension, the phenomenon of the relationship between the brain and the arterial hypertension (high blood pressure).

HE ALSO HAS pioneered in the development and use of plastic, air-cushioned bubble strips to help reduce tissue damage during brain surgery.

These strips are similar to those used for packing breakable items for transportation. They are attached to retractors to cushion sensitive brain tissue and help reduce the possibility of damage due to displacement and movement during surgery.

Dr. Dujovny shows Dr. Carl Shrontz how the new plastic, air-cushioned bubble strips work during brain surgery.

## scientific spectrum

Dujovny presented a report to the American College of Surgeons last winter on the experimental use of the material at HFH.

Dujovny also is interested and experienced in the surgical treatment, in cooperation with plastic surgeons, of spastic paraplegics, and in pediatric neurosurgery, including surgery on multiply handicapped children. He conducts a pediatric neurosurgery clinic at HFH each Friday.

"I am seeing an increasing number of young patients," he says. "They are referred to me by other HFH staff members and by physicians in the community. The children may have brain tumor, head injury, congenital disease such as spina bifida, epilepsy or other problems."

Dujovny's applied research efforts relate primarily to micro-neurosurgery, including:

- The evaluation of the condition of blood vessels removed from stroke victims to determine the effects of blockage on tissue.
- The study of different drugs that influence thrombosis or inhibit platelet formation at suture sites.
- The metallurgical factors involving surgical clips, the causes of clip failures and effects of the clips on the healing process.

'Until a few years ago, we could not perform such delicate surgery on the brain,' Dr. Dujovny says.