

Artery Surgery Slashes Risk of Stroke

Surgery to remove a fatty buildup in neck arteries can reduce by more than half the threat of stroke in men who have not shown warning signs of the vessel narrowing.

"This may prevent many thousands of strokes," says Patricia A. Grady, deputy director of the National Institute of Neurological Disorders and Stroke (NINDS) in Bethesda, Md. NINDS officials stopped the study nearly 3 years ahead of schedule in order to announce the dramatic findings.

Previous research had demonstrated the benefit of such surgery for people who had suffered a stroke already or showed symptoms of a stroke. However, the value of the operation, which costs about \$15,000, was not proved for individuals who experienced no symptoms but did show a severe constriction of a carotid artery. Two such vessels in the neck supply the brain with blood. If fatty plaque clogs even one of the two, it can shut off or impede blood flow, leading to brain tissue damage and stroke.

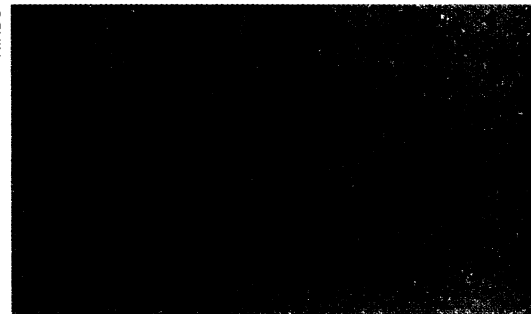
Study leader James F. Toole of the Bowman Gray School of Medicine in Win-

ston-Salem, N.C., and investigators at 39 clinical centers in the United States and Canada recruited 1,662 men and women age 40 to 79. All had carotid arteries that were at least 60 percent blocked but no symptoms due to that narrowing.

The researchers treated all the recruits with a standard regimen that included a daily aspirin tablet, which reduces the risk of stroke by preventing the formation of blood clots that can lodge in a clogged carotid artery. If necessary, participants also received therapy for high blood pressure, high blood cholesterol, and diabetes.

Investigators then randomly selected 828 patients to receive an operation called a carotid endarterectomy. In that procedure, surgeons make an incision in the neck and cut away the fatty plaque that blocks blood flow. The centers chosen for the study all had a good track record — fewer than 3 percent of their patients had suffered either stroke or death as a result of the surgery.

The researchers found that people who underwent the operation had a 4.8 percent chance of stroke during the 5



Blockage of a carotid artery.

years after surgery. This rate was significantly lower than the 10.6 percent risk for recruits who had received standard treatment. The overall reduction in risk was 55 percent.

However, this average benefit masks an important gender difference. Men who had the surgery showed a 69 percent reduction in risk, while women had only a 16 percent lowering of their stroke risk. The researchers can't explain the difference. It may be that there weren't enough women in the trial to demonstrate the procedure's benefit, notes coinvestigator Robert W. Hobson II of the New Jersey Medical School in Newark. On the other hand, further study may show the operation doesn't benefit most women, the researchers say.

In most cases, this dangerous narrowing (stenosis) of the carotid artery is identified during an annual physical exam: The physician hears a rushing sound when he or she holds a stethoscope to the patient's neck.

The researchers don't recommend surgery for everyone with this condition. Once a doctor identifies a possible blockage, additional tests, such as an ultrasound or an angiogram, must quantify the extent of the problem. In addition, surgical candidates must be otherwise healthy.

The results seem to satisfy skeptics of carotid endarterectomy's usefulness. Mark L. Dyken, a neurologist at Indiana University School of Medicine in Indianapolis, was one of the researchers questioning the value of this operation in the 1980s (SN: 2/8/86, p.89). Dyken now says that he believes in the benefit of the procedure for eligible patients who seek out a top-notch surgeon.

Hobson notes that an inexperienced surgeon can sharply increase a patient's risk of suffering a stroke or of dying as a result of the procedure. For that reason, NINDS advises that patients have the operation only at medical centers with complication rates of 3 percent or less.

— K. A. Fackelmann

Where there's smoke . . .

The Rabaul volcano in Papua New Guinea erupted Sept. 19, shooting ash and gases at least 70,000 feet into the atmosphere. A National Oceanic and Atmospheric Administration polar-orbiting satellite took this image of the ash plume, spreading out into a fan shape as it traveled downwind from Rabaul.

The volcano lies on the northeastern end of New Britain Island, forming a 10-kilometer-wide harbor with its sunken crater. Rabaul started grumbling on Sept. 18, giving the 30,000 residents at the northern end of the harbor enough time to evacuate before the eruption began the next day at two cones on opposite ends of the harbor (SN: 10/1/94, p.213). Five hundred people perished the last time both cones erupted, in 1937.

The recent eruptions have blanketed the city of Rabaul with more than a foot of ash. Rains have waterlogged the debris, causing many roofs to collapse. United Nations representatives report that four people have died.

In the last week, the activity at the cone named Vulcan appears to have died out, while the Tavurvur cone continues to erupt at a low level, according to Daniel Dzurisin of the U.S. Geological Survey's Cascades Volcano Observatory (CVO) in Vancouver, Wash.



A team from CVO arrived at Rabaul on Oct. 1 with equipment to monitor the activity there. The volcano has hosted several giant eruptions in the last few thousand years, raising concern that the recent activity could be leading toward something much larger.

— R. Monastersky