Bypass not to blame for heart patients' mental decline

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Heart patients often experience lasting problems with memory, language, and other cognitive skills after bypass surgery. However, these problems aren't caused by the surgery itself or the pump used to replace heart function during surgery, a new study by Johns Hopkins researchers suggests. The findings may lead to better approaches to prevent cognitive decline regardless of which treatment heart disease patients receive.

The study, published in the May Annals of Neurology, compared cognitive function of patients who received cardiac bypass surgery with that of patients who received other treatments for coronary artery disease, including pharmaceuticals and stents. After testing all the study subjects periodically in a variety of cognitive areas for six years after their treatments, the researchers found that both groups experienced an almost identical decline in cognitive function. The results suggest that the disease itself, and not any particular treatment, is the cause for cognitive decline.

Previous studies have linked bypass surgery to patients' mental decline, with many doctors blaming the bypass pump that keeps blood flowing through the body during surgery. This research led many doctors to avoid recommending surgery to their patients. However, Hopkins researcher Guy McKhann explains that previous studies hadn't compared patients who had bypass surgery to those who had other treatments instead. As such, it's been unknown whether mental decline is a consequence of surgery using the bypass pump, heart troubles, part of the normal aging process, or another cause altogether.

To gather evidence, McKhann and other Hopkins researchers recruited 152 heart disease patients who were scheduled to undergo bypass surgery and 92 patients whose doctors planned to treat their heart disease in other ways, including stents and medications. The patients, mostly men, had an average age of about 64.

Before their treatments, the researchers gave each of the patients a battery of 15 different mental tests meant to examine cognitive functions including memory, motor speed, attention, and the ability to plan ahead. Then, at three months, one year, three years, and six years after treatment, the researchers gave the volunteers the same tests to see whether their cognitive function had changed.

When they compared the two groups' results, the researchers found similar results. Both groups started out with comparable cognitive abilities, which improved slightly for about a year after treatment. However, over the next five years, most of the patients experienced a similar decline of cognitive function in almost every area tested, regardless of whether they had surgery or another treatment.

These results suggest that neither bypass surgery nor the pump itself causes cognitive decline, says McKhann. He says that the finding may help the stigma that prevents some doctors from recommending bypass surgery.

"We don't think fear of mental changes should be a factor in deciding what kinds of treatments you have for your heart," he adds.

Since both groups of patients scored lower than healthy patients on similar cognitive tests in other studies, McKhann notes that he and other researchers believe that coronary artery disease is the culprit. However, he says, he and his colleagues don't believe that cognitive decline is an inevitable consequence of heart disease.

"If we take a very aggressive approach to treating risk factors for heart disease, including keeping a handle on diabetes, blood pressure, and weight, patients may be able to avoid these cognitive problems," McKhann says.

Source: Johns Hopkins Medical Institutions