

Surgery not linked to memory problems in older patients (w/ Podcast)

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(PhysOrg.com) -- For years, it has been widely assumed that older adults may experience memory loss and other cognitive problems following surgery. But a new study from researchers at Washington University School of Medicine in St. Louis questions those assumptions. In fact, the researchers were not able to detect any long-term cognitive declines attributable to surgery in a group of 575 patients they studied.

"There's a perception that people go in for [surgery](#), and they aren't quite the same afterward," says first author Michael S. Avidan, M.D. "The reports of cognitive deterioration have varied, but several studies have suggested it affects many elderly people. In my experience as an [anesthesiologist](#), I've found this is a very common concern."

But Avidan, associate professor of anesthesiology and surgery, and fellow investigator Alex S. Evers, M.D., the Henry E. Mallinckrodt Professor and head of the Department of Anesthesiology, questioned those conclusions.

"We wondered how reasonable it was to compare people having surgery to people who were perfectly healthy," Evers explains. "We thought a better comparison group might be people who were equally ill."

Past cognitive studies tested surgery patients just before an operation and then retested them several months later. So if a patient was just beginning to suffer declines at the time of the first test, it might be assumed that further declines at follow-up were caused by their

operation when, in fact, they already were underway. To get better initial screenings, Avidan and Evers examined data from Washington University's Alzheimer's Disease Research Center (ADRC).

The ADRC tests cognitive function in volunteers annually, beginning at the age of 50. Having years of cognitive data on hand made it easier to map a person's cognitive trajectory before and after surgery or illness and see whether either had any long-term impact on cognitive performance.

The 575 patients they studied had been tested annually at the ADRC and include those with Alzheimer's-type dementia. At the start of the study, 361 people had mild to moderate dementia, and 214 were dementia-free. Those patients were divided into three groups: those who had surgery, those with illness, and a third group with neither.

"We were able to use patients as their own controls before and after surgery and to compare groups of patients over time, and we did not detect any evidence of a long-term cognitive decline," Evers says. "Our findings suggest that if older people physically recover from surgery, they should expect that within six months or a year, they will return to their previous level of cognitive ability, too."

Evers and Avidan say this study would have been impossible without a database of patients like those at the ADRC. Knowing how people functioned for years before and after surgery or illness allowed them to learn whether a major event somehow changed their cognitive trajectories. It did not, even in patients with dementia at the time of surgery.

"This is an important finding for persons with Alzheimer's and their families who may worry that a pending operation could adversely affect the patient's cognitive status" says John C. Morris M.D., the Harvey A.

and Dorismae Hacker Friedman Distinguished Professor of Neurology and director of the ADRC. "There has been a widespread belief that the memory and thinking abilities of patients with early Alzheimer's disease may worsen as a consequence of surgery, but the evidence from this study does not support that belief."

The investigators say their study, published in the November issue of the journal *Anesthesiology*, is not the final word on the relationship between surgery and cognitive declines. They believe that some patients may be more vulnerable for genetic reasons or because of how their brains react to surgery or anesthesia. They also excluded cardiac surgery patients from this study because of elevated stroke risk and other risks posed by cardiac surgery that aren't as common in other types of operations. But they say, in general, the findings should be a relief for older people facing surgery.

"An older person should not anticipate cognitive deterioration following surgery," says Avidan. "If you need surgery, and you're elderly, even if you already have some cognitive impairment, whether you decide to have surgery or not should depend on surgical risks and benefits, and not the possibility of [cognitive problems](#)."

More information: Avidan, MS, Searleman AD, Storandt M, Barnett K, Vannucci A, Saager L, Xiong C, Grant EA, Kaiser D, Morris, JC, Evers AS. Long-term cognitive decline in older subjects was not attributable to noncardiac surgery or major illness. *Anesthesiology*, vol. 111:5, pp. 1651-1657. Nov. 2009

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