

Minimally-invasive surgery for brain bleeds may not be better at restoring function than standard me

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Minimally-invasive surgery to remove blood from the brain along with intermittent dosing of a clot-busting drug after a brain bleed may not improve function better than medical therapy but it was associated with fewer deaths, according to late breaking science presented at the American Stroke Association's International Stroke Conference 2019.

The research study—Minimally Invasive Surgery Plus Alteplase for Intracerebral Hemorrhage Evacuation (MISTIE III), which will be simultaneously published in *The Lancet*—tested if catheter-based removal of [blood](#) from intracerebral bleeding could improve the proportion of patients with mild to no disability at one year.

There is currently no effective surgical treatment for intracerebral hemorrhage, which is the most common type of lethal brain bleed. The MISTIE procedure avoids the damage of traditional craniotomy by using imaging to guide placement of a soft tube into the blood clot through a small hole in the skull to remove large amounts of blood and toxic blood components.

The study included 506 [stroke patients](#) (average age 62; 62 percent male) from 78 sites who were randomized to [medical therapy](#) or to a standardized, low mechanical impact procedure with suction and up to three days of gentle irrigation with the clot-busting drug alteplase. Two hundred and fifty-six patients were randomized to the MISTIE

procedure and 250 to medical therapy. Functional recovery was compared at one year after stroke.

Researchers found:

- * For medium to large [blood clots](#), the MISTIE procedure did not improve [functional recovery](#) one year after stroke.

- * Good recovery was achieved in 45 percent of MISTIE patients and 41 percent medical therapy patients.

- * 9 percent of patients in the MISTIE group died while 15 percent of the medical therapy patients died.

"The trial confirmed that removal of the blood clot using the MISTIE procedure can be done safely as compared to supportive therapy. But there was no difference in functional recovery between those in the surgery group and the medical group," said Daniel F. Hanley, M.D., professor of Acute Neurology and director of the Division of Brain Injury Outcomes at Johns Hopkins University in Baltimore. "The trial results do suggest that patients have improved functional recovery when the blood clot size is reduced to about 3 tablespoonsful or less of blood. This will require further study, but, at a minimum, the trial data provide a sound basis to avoid limiting care in [patients](#) with large brain blood clots."

Provided by American Heart Association

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