

Repair of heart defect discovered incidentally during surgery may not have clear benefit

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Patients who have a heart defect known as patent foramen ovale incidentally discovered and repaired during surgery for a different condition may have an increased odds of postoperative stroke, along with no clear benefit on short-term outcomes or long-term survival, according to a study in the July 15 issue of *JAMA*.

Patent foramen ovale (PFO) is an opening in the upper chambers of the heart that failed to close naturally shortly after birth. The role that PFO plays in cryptogenic (of unknown cause) [stroke](#) remains controversial. "The debate over an association has existed for more than a century, but causal data linking PFO and cryptogenic stroke remain anecdotal. Epidemiological evidence is consistent with an increased risk of stroke associated with PFO but data are not conclusive. The paucity of evidence supporting PFO as the mechanism for cryptogenic stroke has left many questions in the field unanswered, including when PFO repair is appropriate," the authors write. A recent survey suggested that cardiothoracic (heart and chest) surgeons may alter planned procedures to repair a newly discovered PFO. How frequently this occurs and the impact on outcomes has been unknown, according to background information in the article.

Richard A. Krasuski, M.D., of the Cleveland Clinic, and colleagues examined the prevalence of PFO incidentally discovered during cardiothoracic surgery and investigated the relationship of repair (closure of the opening) on outcomes and long-term survival. The researchers reviewed the intraoperative transesophageal (through the

esophagus) echocardiograms of 13,092 [patients](#) without prior diagnosis of PFO or atrial septal defect (an abnormal opening between the left and right atria of the heart) undergoing surgery at the Cleveland Clinic from 1995 through 2006. Postoperative outcomes were collected until discharge.

The authors found that PFO was intraoperatively discovered in 2,277 patients (17 percent). Of patients with newly discovered PFO, 639 (28 percent) underwent surgical repair, nearly all of which were suture closures (97 percent). Patients undergoing repair were more likely to be women, be younger, have a history of stroke or atrial fibrillation.

Further analysis indicated that patients with intraoperatively diagnosed PFO had similar rates of in-hospital stroke and hospital death. Length of hospital stay and days spent in the ICU were also similar between those with intraoperatively diagnosed PFO and those without.

Regarding outcomes for patients who underwent PFO repair compared with those who did not, the primary difference noted between the 2 groups was the rate of in-hospital stroke, which was 2.8 percent in the repaired group vs. 1.2 percent in the unrepaired group, representing a nearly 2.5 times greater odds of having in-hospital stroke. The rate of hospital deaths, hospital length of stay, ICU length of stay and time on cardiopulmonary bypass were all similar. Long-term analysis demonstrated that PFO repair was associated with no survival difference.

"In summary, PFO is commonly detected during intraoperative imaging at the time of cardiothoracic surgery. When incidentally discovered, it appears to have a benign short-term and long-term clinical course. While the number of events is small, there was no clear benefit of closure on short-term perioperative outcomes or longer-term mortality. The finding that repair may increase postoperative stroke risk should discourage

routine surgical closure and foster further investigation to delineate whether there is any benefit in terms of long-term stroke prevention and which patients might benefit from this intervention," the authors conclude.

More information: *JAMA*. 2009;302[3]:290-297.

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