CON - Incidental PFO Should be Closed During Off Pump CABG

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As previously reviewed,(1,2) a patent foramen ovale (PFO) can be found in approximately one quarter of all adult humans.

There is no doubt that in some patients the presence of a PFO can lead to complications,(3) some of which may be serious and life threatening, e.g. stroke. However, in the setting of CABG surgery there is scant evidence in the literature that PFOs cause a large burden of morbidity and mortality.(4)

Transesophageal echocardiography is increasingly used during cardiac surgery.(5) In a national survey sent to half of all U.S. adult cardiac surgeons examination for a PFO was done routinely in 30% of patients.(5) Therefore, if appropriate methods are used (e.g. “bubble study with abrupt release of positive airway pressure”) it is likely that thousands of PFOs are diagnosed annually during both on and off pump cardiac surgery.

No randomized clinical trials have been conducted to address whether a PFO found as an incidental finding during off-pump CABG should be closed. Therefore, any decision made intraoperatively must be made using imperfect information while considering each option’s risk vs. benefits.

For valve surgery where bicaval cannulation is often used there is minimal incremental risk to PFO closure, thus, the potential benefit to the patient over their lifetime is likely to outweigh the risk of PFO closure. For CABG involving the use of CPB, the incremental risk associated with the use of bicaval cannulation is minimal, thus the potential benefit to the patient over their lifetime is likely to outweigh the risk of PFO closure.

For the topic of this debate, off pump CABG, the decision to close the PFO requires a change in the procedure to use of CPB and the use of bicaval cannulation. There are only limited data (involving a small number of patients) from randomized clinical trials of off-pump vs. on-pump CABG.(6-10) Therefore, it has not been proven that the use of CPB does not increase the risk of the procedure. In some patients, e.g. heavily calcified aorta, conversion from off-pump CABG to on-pump CABG to close a PFO may increase the risk from the surgical procedure. Since the benefits of PFO closure are largely unproven it may not be prudent to convert to on-pump CABG in these patients.(1,2)
References


