

# Carotid intraplaque hemorrhage

“Vulnerable” plaques are atherosclerotic plaques likely to cause thrombotic complications or those that tend to progress rapidly. Criteria for vulnerable plaques include intimal thickening, plaque fissure, lipid/necrotic core with thin fibrous cap, [calcification](#), [thrombus](#), [intraplaque hemorrhage](#), and outward remodeling. Some of these features can be identified with high-resolution MRI <sup>1) 2) 3) 4)</sup>

There is a lack of information on the [natural history](#) of [asymptomatic carotid artery stenosis](#) (AsymCS) associated with [cardiovascular diseases](#) that require surgery. The aim of a study was to investigate [risk factors](#) for postoperative ipsilateral [ischemic stroke](#) and all-cause [mortality](#) after cardiovascular surgery in patients with AsymCS.

Among 2158 patients who underwent cardiovascular surgery, 150 patients with AsymCS who didn't undergo carotid [revascularization](#) were included. The relationships between preoperative factors, including carotid [intraplaque hemorrhage](#) (IPH), and postoperative ipsilateral [ischemic stroke](#) and all-cause mortality were analyzed retrospectively.

During the median follow-up of 1087 days of 150 patients with 19 IPH, 12 (8.0%) and 21 (14.0%) encountered ipsilateral infarction and all-cause mortality, respectively. Multivariable Cox regression analyses indicated that IPH was significantly predictive of both ipsilateral infarction (hazard ratio [HR] 21.31, 95% confidence interval [CI], 4.98-91.17;  $P \leq .001$ ) and all-cause mortality (HR 4.64, 95% CI, 1.61-13.34;  $P = .004$ ). Another significant factor was peak systolic velocity for ipsilateral infarction with the cutoff velocity of 227 cm/s by the receiver-operating characteristic curve.

In this cohort of patients with AsymCS undergoing cardiovascular surgery, IPH had a close connection with a high risk of both postoperative ischemic stroke and mortality after cardiovascular surgery <sup>5)</sup>.

## References

<sup>1)</sup>

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