

Risk factors for the postoperative occlusion of the internal carotid artery

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Aim: To analyze the risk factors and symptoms in patients with postoperative occlusion of the internal carotid artery (ICA) after undergoing carotid endarterectomy.

Patients and methods: During 1-year period 33 patients (25 male, 8 female) with postoperative occlusion of ICA were analysed in the Cerebrovascular laboratory of the Department of Neurology. History, clinical and neurological status were taken. Clinical symptoms were analyzed along with the atherosclerosis risk factors. These data were compared with the data of 33 patients (23 male, 10 female) with satisfying postoperative results. Student *t*-test was used to compare data at the level of significance ($P < 0.05$).

Results: In 31 out of 33 patients postoperative ICA occlusion was registered during the first follow-up examination, 3 months after the carotid endarterectomy (18 right, 15 left). Three patients presented with ischemic symptoms (one stroke, two

transitory ischemic attacks-TIA). In 8 patients combined occlusion of the common and ICA was detected (4 right, 4 left). One patient developed the occlusion during the first year of follow-up and in one patient it was detected 3 years after surgery. Eight patients have also had surgery on the contralateral ICA, finding of which was satisfactory. In 19 patients insignificant atherosclerotic changes were found contralaterally, 5 had a moderate stenosis and 1 patient had a subtotal ICA stenosis. Risk factors in the group with postoperative ICA occlusion were: hypertension in 18, smoking in 10, hyperlipidemia in 8, diabetes mellitus in 9, history of stroke in 13, TIA in 3, heart attack in 4 and coronary disease in 3 patients. In the group with a satisfactory finding risk factors present were: hypertension in 25, smoking in 11, hyperlipidemia in 16, diabetes mellitus in 7, history of stroke in 7, TIA in 3, heart attack in 4 and coronary disease in 3 patients. There was no significant difference in present risk factors, except the presence of hyperlipidemia in the group with postoperative occlusion.

Conclusion: Early onset of the postoperative ICA occlusion is most likely not caused by the atherosclerosis risk factors but with perioperative complications or genetic influence, which might need further investigation.