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Utility of mild hypothermia during carotid artery surgery in patients with unilateral stenosis and contralateral total occlusion

Kontrlateral total oklüzyonlu karotid arter stenozu olan olgularda hafif hipotermi ile karotid arter cerrahisi

Carotid artery occlusive disease is responsible for approximately 20% to 30% of strokes (1), and carotid endarterectomy (CEA) has been proven effective in reducing this risk of stroke in symptomatic and asymptomatic patients with >60% carotid stenosis (2, 3). Previous studies found that mild hypothermia could prevent neuronal ischemia and stroke during surgical procedures on arteries that supply the brain, especially with extended occlusive lesions on both internal carotid arteries (4). We aimed to determine whether mild hypothermia during carotid artery surgery improves outcomes in patients with unilateral critical stenosis in internal carotid artery or in common carotid artery and total occlusion on the contralateral side.

Between January 2003 and October 2007 seven patients (5 men, 2 women; mean age of 64±9 years) with 60-99% stenosis of the internal carotid artery (ICA) and total occlusion of the contralateral ICA and who were not candidates for or refused carotid balloon angioplasty and stent were included in the study. Exclusion criteria were: lesions that were inaccessible for technical reasons (e.g. high ICA cervical segment stenosis), uncorrected bleeding disorders, intracranial tumor or arteriovenous malformation, history of radiation therapy associated with radical neck dissections, congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), recent transient ischemic attack (TIA), or stroke within the previous 6 weeks, and patients undergoing cardiac surgery with cardiopulmonary bypass within the previous 6 months.

After 100 unit/kg unfractionated heparin was given IV, and the aPTT was about 350-400 seconds, femoral artery and vein was canullated. The patient was cooled down to 33°C and the Gott shunt was replaced by opening artery. In five patients, endarterectomy was performed on the internal carotid artery and the arteriotomy was closed primarily using continuous polydioxanone 5-0 sutures. In the other two patients, a same-side subclavian artery and common carotid artery bypass was performed with a 6 mm polytetrafluoroethylene synthetic graft. Later on, re-warming of the patient was begun and the subclavian anastomosis was performed. After the patient body temperature reached 36°C, the patient was disconnected from the pump.

A major stroke occurred in one patient who experienced partial and secondary generalized seizures 43 hours after the operation. He was reintubated and antiepileptic therapy was initiated. A parietal infarct in the left middle cerebral artery territory on magnetic resonance imaging was seen, and clinically he developed a mild right hemiparesis. He was extubated 24 hours later, and his vital signs were back to normal 48 hours later. Patients were discharged from the hospital after seven days of hospital stay.

Carotid Doppler ultrasound performed on the three month postoperative visit showed a 20% restenosis of the ICA in one of five patients who underwent carotid endarterectomy and an open shunt graft in both patients with these grafts.

Mild hypothermia during carotid surgery for patients with a unilateral critical stenosis and contralateral total occlusion of the carotid arteries is safe and protects cerebral function in the early and late postoperative periods.

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Mitral valve perforation: Is there a possible role for silent infective endocarditis?

Mitral kapak perforasyonu: Sessiz enfektif endokarditin olası bir rolü var mı?

Infective endocarditis is a main cause for mitral valve perforation (1), which otherwise rarely encountered in clinical practice. We present here an incidentally detected mitral valve perforation in an adult patient with undetermined cause.

A 36 years old male patient was referred to our clinic for a consultation request from gastroenterology clinic. He was admitted to hospital with dyspeptic symptoms and shortness of breath with exertion. According to his past medical history he experienced quick weight lose and fever three years ago. Diagnostic workup only yielded high 5-hydroxyindole acetic acid (5-HIAA) (71 mg/24 hours, upper limit of normal 20 mg/24 hours) and positive Indium pentetreotide (In-111) scanning test results at that time. However, explorative surgery and

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lymph node biopsy results did not confirmed the diagnosis of carcinoid syndrome. The patient's history was also revealed a moderate degree mitral and aortic regurgitation following for three years. At presentation we detected 3/6 pansystolic murmur at the apex and concomitant diastolic regurgitation at the left sternal border. Transthoracic echocardiographic examination with a Philips I33 machine revealed moderate to severe aortic regurgitation and moderate degree mitral regurgitation. Left ventricle was mildly dilated (diastolic diameter 58 mm) but had normal ejection fraction (62%). There was severe degeneration of aortic valve and a suspected perforation of anterior mitral valve at the junction of A2-A3 scallops (Fig. 1). To define the problem more clearly we performed a transesophageal echocardiography which confirmed our suspicion of anterior mitral valve perforation at the A2-A3 area (Fig. 2). Based on these findings we proposed valve surgery to the patient. A mechanical valve (St. Jude No:23) was used for aortic position and mitral valve was repaired with direct suturing at the perforation site (Fig. 3). Pathologic examination of excised aortic valve yielded nonspecific inflammatory infiltrate. Postoperative course was uneventful and the patient discharged at the seventh day with appropriate therapy including agents aimed to dyspeptic symptoms.

Mitral valve perforation is more frequently caused by infective endocarditis (1). However, congenital or iatrogenic causes are also possible (2, 3). In our patient, we did not be able to define the underlying problem for mitral perforation. Although the patient did not have recent or past history of infective endocarditis, we could not totally exclude past occurrence of clinically silent aortic valve endocarditis complicated by mitral valve perforation as a possibility described before (4). Although there was no definite diagnosis his quick weight loses and fever may support a possibility of previous infectious event he experienced three years ago. Moreover, relatively late detection of mitral valve problems was also against the congenital presence of perforation.

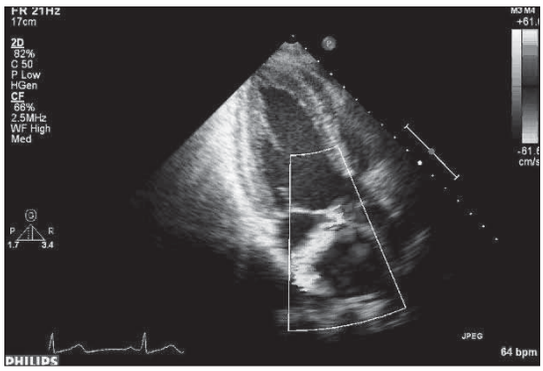

Figure 1. Transthoracic echocardiographic view of the perforation

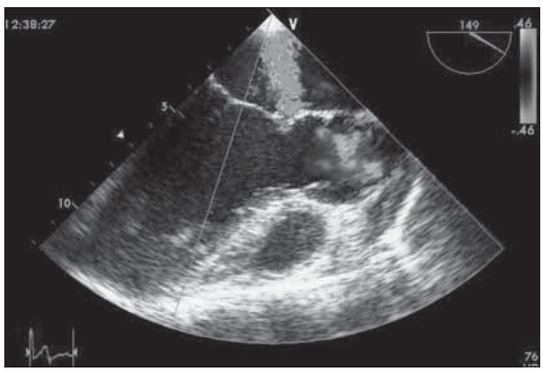

Figure 2. Transesophageal echocardiographic view of the perforation

Figure 3. Surgical view of the perforated mitral valve

In conclusion, we can speculate that the patient had mitral valve perforation caused by remote aortic valve endocarditis, which was very unusual clinical presentation.

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A concern on cardiac involvement in swine flu

Domuz gribi ile kalp hastalığı ilişkisi

In early 2009, emerging of swine flu brings attention to medical scientists around the world. Finally, swine flu is classified as a new variant of H1N1 influenza virus infection. Since H1N1 influenza virus infection is already confirmed for possible cardiac involvement (1, 2), the concern on the swine flu infection is important in cardiology. Although there is no present specific report mentioning for cardiac manifestation in swine flu and it is needed to closely monitor all infected cases for possible cardiac involvement.

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