Combined rupture of abdominal aortic aneurysm and acute thrombosis of internal carotid artery is extremely rare but fatal combination resulting in high mortality rate. Presented case, shows successfully performed simultaneous surgery of ruptured abdominal aortic aneurysm and acute cerebrovascular insult caused by thrombosis of carotid artery in 81 year-old male. Post operative course was uneventfull. At 24 months follow up patient was in good condition, with full neurological recovery. Simultaneous surgical treatment of acute occlusive carotid disease and ruptured abdominal aortic aneurysm (RAAA) seems to be the only life saving procedure for this rare, but very complicated condition. To our knowledge, this is the first reported successful simultaneous surgical treatment of RAAA and acute thrombosis of internal carotid artery.

Key words: abdominal aortic aneurysm rupture, acute cerebrovascular insult, surgical treatment

INTRODUCTION

Ruptured abdominal aortic aneurysm (RAAA) is the greatest challenge in emergency vascular surgery. RAAA is among 10 most common causes of death in developed countries. Emergency surgical treatments are worldwide associated with very high mortality rate of approximately around 50% 1,2. Early post-operative mortality for RAAA in patients over 80 years of age varies from 56 to 91% 3,4. Cerebrovascular insult (CVI) and stroke are the third most common cause of death in the developed countries5. Carotid endarterectomy (CEA) is a common procedure indicated in patients with significant atherosclerotic stenosis of the internal carotid artery 6,7. Acute internal carotid thrombosis leads to great postoperative morbidity and mortality, that range from 40 to 50% respectively8. In some models, cerebral ischemic damage may be produced within 15-30 minutes of focal insult9. Nevertheless, ischemia does not become irreversible until approximately 4-6 hours after vascular occlusion10. Ruptured aneurysm of abdominal aorta in elderly patients is indication for surgical treatment as life saving procedures 2,11. It is described in literature simultaneous elective carotid endarterectomy and coronary artery bypass grafting, too12. To the best of our knowledge, not one case of successful surgical treatment of RAAA and acute thrombosis of internal carotid artery occurring simultaneously was ever reported in the scientific literature.

CASE REPORT

An 81 year-old male patient was admitted in the CCS’ Emergency center with the acute abdominal and back pain. Two years earlier patient had left carotid endarterectomy. At that time he was diagnosed with infrarenal abdominal aortic aneurysm, but he refused suggested elective surgical treatment.

Three weeks before reporting at our Institute, patient underwent Color duplex scan of carotid arteries showing no clinically significant stenosis of left carotid artery, but significant subocclusive stenosis (95%) of right internal carotid artery by complicated calcified plaque (Fig 1 upper). At the same time abdominal CT scan verified infrarenal fusiform aneurysm of abdominal aorta with maximum diameter of 7.3 cm (Fig 1 down).

On admission patient was haemodynamically stable (BP 150/100, HR 75/min.), conscious, pale, with pulsating abdominal mass. Emergency abdominal ultrasound revealed aneurysm of abdominal aorta with retroperitoneal haematoma. Immediately following ultrasound examination patient develops acute neurological symptoms including dysarthria and left side hemiplegia.

At that point patient was still conscious, haemodynamically stable (BP170/80) with tongue deviation to the left and positive Babinski on the left side. Patient was imme-
diately (during 35 minute period) prepared for simultaneous surgery.

Even revascularization after 30 minutes is controversial since patient was haemodinamically stable (BP 120/80) during anesthesia introduction, we decide to perform right CEA using eversion technique. During procedure calcified complicated plaque with acute thrombosis was extracted from the proximal part of the internal carotid artery. Cross clamping time of right carotid artery was 17 minutes.

Median laparotomy revealed large haematoma in retroperitoneal space. After subdiafragmal cross clamping of the aorta and clamping of both common iliac arteries aneurysm sack was opened and rupture of the anterior aneurysm wall was revealed. Infrarenal segment of the aorta was replaced with Dacron 16 mm prosthesis. During operation 2000 ml of patient’s blood was collected and 660 ml of concentrated red blood cells was returned into the patient’s circulatory system with cell-saver.

Early postoperative recovery was uneventful; patient was stable with normal renal function and was extubated 12h after surgery (Figure 2). Full recovery of neurological system was established, without left side hemiplegia. Control angiography was performed on the 5th postoperative day (aortography and arteriography of the aortic arch), showing regular carotid revascularization (Figure 3 upper) and normal function of the synthetic aortic prosthesis (Figure 3 down). Ten days after surgery patient was discharged from hospital. At clinical follow up of 1, 3, 6, 12 and 24 months after surgery patient was asymptomatic.

Although cerebral revascularisation past 30 min after acute carotid thrombosis is controversial, it seems that simultaneous open surgical treatment of RAAA and acute occlusive carotid disease in selected cases, is the only life saving procedure.

SUMMARY

SIMULTANO OPERATIVNO LEÇENJE BOLESNIKA SA AKUTNIM CEREBROVASKULARNIM INSULTOM I RUPTUROM ANEURIZME ABDOMINALNE AORTE

Uvod: Ruptura aneurizme abdominalne aorte kombinovana sa akutnom trombolom unutrašnje karotidne arterije je izuzetno teško kliničko stanje.

Cilj: Prikaz bolesnika hirurški lečenog zbog rupturisane aneurizme abdominalne aorte i akutnog cerebrovaskularnog insulta usled tromboze unutrašnje karotidne arterije.

Metod: Prikazan je 81 godinu star bolesnik kod koga je uspešno izvedena simultana operacija (trombendarterektomija a. carotis interne i parcijalna resekcija rupturirane aneurizme abdominalne aorte sa interpozicijom grafa).

Rezultati: U neposrednom postoperativnom toku došlo je do kompletnog povlačenja hemiplegije. Bolesnik je urednog hemodinamskog vaskularnog statusa 1, 6 i 24 meseca od operacije.
Zaključak: Prema dostupnoj literaturi ovo je prva publikacija o uspješnom simultanom lečenju akutne tromboze karotidne arterije i rupturirane aneurizme abdominalne aorte.

Ključne reči: ruptura aneurizme abdominalne aorte, hitna karotidna endarterektomija, simultano hirurško leč enje

REFERENCES


FIGURE 3.
POSTOPERATIVE AORTOGRAPHY - UPPER: ABSENCE OF SIGNIFICANT STENOSIS OF RIGHT CAROTID ARTERIES; DOWN: NORMAL FUNCTION OF THE AORTIC SYNTHETIC PROSTHESIS


FIGURE 3.
POSTOPERATIVE AORTOGRAPHY - UPPER: ABSENCE OF SIGNIFICANT STENOSIS OF RIGHT CAROTID ARTERIES; DOWN: NORMAL FUNCTION OF THE AORTIC SYNTHETIC PROSTHESIS