

Acute renal failure and hemorrhage after embolectomy: A case report

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Abstract

The management of acute renal failure and hemorrhage in a patient after embolectomy is presented in this article. A 47 years-old female patient was operated for acute arterial occlusion of lower extremity. She developed oligo-anuric renal failure and needed hemodialysis in postoperative first day. Progressive huge hematoma developed at the site of jugular catheter and bleeding started at all vascular access sites a few hours after hemodialysis. Besides early diagnosis and surgical intervention, meticulous follow up of cardiac, renal and lung functions play very important role in treatment of acute arterial occlusions.

Key words: Emboli, acute occlusive disease, hemorrhage, acute renal failur

Introduction

Critical leg ischemia is defined as a sudden decrease in leg perfusion, which threatens viability of the extremity. This condition not only results in local ischemia, but also to a pathology that can lead to systemic complications. Despite the improved intensive care and surgical conditions, mortality rates remain high. When surgical intervention is delayed, these risks increase¹. Mortality and morbidity risks persist even when the reason for acute ischemic condition is eliminated and reperfusion is attained. In acute arterial occlusive disease, rapid diagnosis and performing the appropriate treatment with a multidisciplinary approach are critically important². We discussed the management of acute renal failure and hemorrhage in a patient after embolectomy in this article.

Case presentation

A 47 years-old female patient was admitted with a sudden coldness and pain for three hours of onset in her left leg. Left popliteal artery pulses and distal pulses were negative. She had no history of leg pain before. She had closed mitral commissurotomy 18 years ago. She had atrial fibrillation. Femoral arterial

embolectomy was done to extract the embolus. Postoperative left leg pulses were positive. She developed oligo-anuric renal failure and needed hemodialysis in postoperative first day. Bleeding started at all vascular access sites three hours after hemodialysis and a progressively expanding hematoma developed at the site of jugular catheter. The hematoma was so huge that we entubated the patient and connected to respiratory unit to prevent the pressure of the hematoma on the trachea. Activated partial prothrombin time and prothrombin time that were so elevated that the upper limit could not be read by the device. Hemoglobin was decreased from 10g/dl to 6g/dl. The patient was consulted with hematology clinic. Vitamin K, 15 units of fresh frozen plasma, 13 units of platelet suspension, 3 units of erythrocyte suspension were given to the patient. Bleeding and hematoma growth stopped. Low dose heparin was started.

After the control of hemorrhage the patient was examined with abdominal ultrasonography and cardiac ecocardiography to investigate the origin of the arterial occlusion. Echocardiography revealed fibrotic mitral valve of 15 mmHg mean gradient, 3º of mitral regurgitation, 3º of tricuspid regurgitation. Pulmonary

artery pressure was 50 mmHg. Left ventricular enddiastolic diameter was 6.1 cm, left ventricular end systolic diameter was 4.8 cm. Ejection fraction was 50%. Fibrinogen levels and platelet numbers were low, fibrin degradation products and D-dimer were normal. Abdominal ultrasonography revealed grade 2-3 renal parenchymal disease. The patient was transferred to the nephrology clinic.

Discussion

Acute lower limb ischemia is not infrequently associated with limb loss (10-30%) or death of the affected patient (15-30%)³.

The time between the onset of ischemia and treatment, the cause of embolization, localization of the emboli, and accompanying pathologies are reported to be important for therapeutic success⁴. Free oxygen radicals interact with endothelium and neutrophils resulting in many local and systemic effects. Cellular swelling, toxin and myoglobin release, accompanied by the effects of free oxygen radicals may cause systemic damages such as acute kidney failure, lung edema, sudden onset of adult respiratory distress syndrome and liver shock. Even when extremity reperfusion has been completely restored by removal of the underlying cause of the acute ischemic condition, a chain of events may result in loss of the extremity, acute kidney and respiratory failure, or functional deterioration in tissues such as heart, intestine, brain or spleen⁵. This "reperfusion damage", or "myonephrotic metabolic syndrome" as suggested by Haimovici, is the main cause of mortality and morbidity especially in acute cases treated late⁶. In our patient the treatment was on the time but acute renal failure requiring dialysis developed despite all precautions applied peroperatively due to her underlying renal disease. After dialysis excessive hemorrhage from all catheter sites and huge hematoma developed on the subclavian catheter site because of adverse effects of myonephrotic metabolic syndrome on blood cascade.

Acute arterial occlusion could result in high mortality and morbidity in cases of late diagnosis and treatment. Besides early diagnosis and surgical intervention, meticulous follow up of cardiac, renal and lung functions play very important role in the decrease of mortality and morbidity. If a complication occurs like acute renal failure and hemorrhage such as in this article, dialysis at proper time with suitable blood products and treatment with a multidisciplinary approach to be applied with other clinics will be important.

Consent

Written informed consent was obtained from the patient for publication of this Case report and any accompanying images.

Conflict of interest

There is no conflict of interest in the article.

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