Descending aorta dissection with angina treated successfully by stent graft implantation

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Heart and large vessel damage are present in 30% of victims in traffic accidents. They constitute the second cause of death among multiple organ trauma patients [1–3]. Thoracic aortic injury (TAI) can occur in 2% of cases, but almost 90% die at the scene or in transport. Patients who reach the emergency department and are correctly diagnosed can be saved in 70% cases. There are no specific symptoms of TAI and up to 50% of victims present no external signs of chest trauma. Pulse deficit in the left arm or lower extremities, also hypo- or hypertension can be observed. In descending aorta injury, nonspecific chest pain may be present; angina pain is very rare [4]. A fracture of the sternum, ribs, or shoulders, as well as hemo- or pneumothorax may indicate chest trauma. In the emergency department, computed tomography (CT) [5], trauma scan, and focused assessment with sonography for trauma are the investigations of choice in all multiple organ trauma patients [6]. In recent years, thoracic endovascular aortic repair with stent graft implantation have become methods of choice in the treatment of descending aorta pathologies, especially traumatic aortic injuries [7, 8]. These techniques minimize surgical risk, particularly in unstable multiple organ trauma patients with severe clinical status, increasing the conditions for favorable long-term results [9, 10].

Special attention should be given to the case of a 21-year-old patient admitted to a regional hospital emergency after a car accident with multiple organ injury confirmed by imaging studies. Features of both pubic bones, transacetabulum right hip fracture, and transverse fracture of the right femur were found. CT examination of the head did not reveal any pathology; there was no free fluid in the abdomen or pelvis region. On applying pharmacological treatment with antibiotics and an analgesic, and traction for tibial tuberosity (8 kg), the patient was generally in a good condition. The only disturbing symptom recorded was high blood pressure resistant to antihypertensive drugs and accompanied by coronary pain. Unfortunately, no cardiac enzymes (troponin test, creatine kinase test) were undertaken in this regional hospital emergency department. During the following days, further progression of stenocardial symptoms were observed. The control transthoracic echocardiography after 6 days of hospitalization showed good heart contractility, without any valvular pathology. Owing to good visualization of the descending part of the aorta, thoracic aortic dissection was suspected. Chest CT angiography was performed, which confirmed limited dissection of the descending aorta below the left subclavian artery to a level of persistent coarctation (type B Stanford post-traumatic acute TAI). The patient was transferred to the department of cardiac surgery as an emergency admission. Blood pressure recorded on the brachial artery equaled 200/60 mmHg and both femoral arteries were pulseless.

A procedure was performed in a conventional way with a femoral approach, under general anesthesia, in an endovascular room. Both common femoral arteries were surgically exposed. A slight
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References


