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CASE REPORT

Massive organ embolization from primary aortic thrombosis

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KEYWORDS
Primary aortic thrombosis;
Multi-Systemic Infarcts;
Computed Tomography Angiography

Abstract A 49-year-old woman was hospitalized for acute left foot arterial ischemia. Arterial Doppler revealed occlusion of the dorsalis pedis and posterior tibial arteries. A computed tomography angiography performed to assess abdominal pain showed hepatic, splenic, renal and pancreatic infarctions. A splenic artery embolism and a small aortic wall thrombus at the celiac trunk were identified. No radiological signs of aortic atherosclerosis were found. No predisposing conditions for secondary aortic thrombosis or intracardiac embolic sources were detected. It was determined that primary aortic thrombosis, a rare though potentially serious condition, was to blame. Isolated aortic mural thrombosis therapy is not well established, although systemic anticoagulation, thrombolysis, thromboaspiration, endovascular stent grafting and surgical thrombectomy have been attempted with varying success. In our patient, systemic anticoagulation therapy was initiated and resulted in aortic thrombus resolution. Close clinical follow-up is crucial, as the aortic thrombus can recur despite anticoagulation and aggressive control of the atherosclerotic risk factors.

PALAVRAS-CHAVE
Trombose primária da aorta;
Enfartes multissistémicos;
Angiotomografia computorizada

Embolização orgânica maciça de trombose primária da aorta

Resumo Doente de 49 anos do sexo feminino, admitida por isquemia aguda do pé esquerdo. O Doppler arterial revelou oclusão das artérias dorsal do pé e tibial posterior. Uma angiotomografia computorizada efetuada para avaliação de dor abdominal evidenciou enfartes hepáticos, esplénicos, renais e pancreático. Identificava-se êmbolo da artéria esplénica e pequeno trombo parietal aórtico ao nível do tronco celíaco; não existiam sinais radiológicos de aterosclerose da aorta. Não foram detetadas condições predisponentes para trombose secundária da

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aorta ou fontes embolígenas intracardíacas. Concluiu-se assim tratar-se de uma trombose primária da aorta, uma entidade rara, mas potencialmente grave. A terapêutica da trombose aórtica mural isolada não está bem estabelecida, embora anticoagulação sistémica, trombólise, tromboaspiração, *stent* endovascular e trombectomia cirúrgica estejam descritas com graus variáveis de sucesso. No nosso caso, foi feita anticoagulação sistémica com resolução do trombo aórtico. O *follow-up* clínico apertado é fundamental, uma vez que, apesar da anticoagulação e do controlo agressivo dos fatores de risco ateroscleróticos, a trombose aórtica pode recorrer.

Introduction

Arterial embolism is a relatively common clinical disorder. Over 80% of all arterial emboli originate in the heart due to functional or structural conditions. Aortic thrombosis, a less common source of arterial embolism, is usually associated with aortic diseases such as extensive atherosclerosis, aneurysms, dissection, trauma, infections and tumors. Aortic thrombosis occurring in an apparently normal aorta is a very rare condition, and is referred to as primary aortic thrombosis. The etiology of thrombus formation in a macroscopically normal aorta is not well understood and has been associated with many disorders, particularly malignant neoplasms, hypercoagulation disorders, iatrogenic pharmacotherapy, recreational drug abuse and inflammatory diseases. We report the case of a woman with extensive arterial embolic events originating from a presumed primary aortic thrombus.

Case Report

A 49-year-old woman was admitted to the emergency room of her local hospital complaining of a 2-day history of bluish discoloration and pain in the left hallux (Figure 1). An acute arterial ischemia of the left foot was assumed, and she was transferred to our hospital for further assessment and eventual vascular examination.

She reported a 2-week history of dull epigastric pain with dorsolumbar irradiation, anorexia, nausea and sporadic postprandial vomiting.

She had a history of poorly controlled hypertension, had been on oral contraception for the last 20 years and had had menorrhagia for the last year. There was no other relevant history, such as hypercholesterolemia, diabetes or smoking habits. Clinical examination found elevated blood pressure (190/90 mmHg), black-bluish discoloration of the left hallux (in mummification process), second left toe and distal dorsal face of the foot (Figure 1). This area was cold and painful, and the dorsalis pedis artery pulse was absent. Abdominal palpation caused pain in the upper quadrants, with no signs of peritoneal irritation. During the emergency room assessment, the patient experienced mental confusion associated with a hypertensive crisis. No focal neurologic deficits or meningeal signs were evident, and this was a transient, non-recurring episode.

Figure 1 Bluish-black discoloration of the left hallux (in mummification process), second left toe and distal dorsal face of the foot.

The patient was transferred to our medical ward five days after close observation and monitoring in the Intensive Care Unit (ICU).

Investigations

- Blood analysis: RBC count 4.39×10^{12}/l, hemoglobin 10 g/dl, Mean Corpuscular Volume (MCV) 61.1 fl; Mean Corpuscular Hemoglobin (MCH) 18.2 pg, Red Cell Distribution Width (RDW) 22.2%, WBC count 3.9×10^{9}/l (88% neutrophils), platelet count 763×10^{9}/l; C-reactive protein (CRP) 273.6 mg/l, sedimentation rate 73 mm/h, urea 82 mg/dl, creatinine 1.4 mg/dl, sodium 129 mEq/l, potassium 4.1 mEq/l, alanine aminotranspherase 324 IU/l, aspartate aminotranspherase 143 IU/l, alkaline phosphatase 139 U/l, creatine phosphokinase 957 U/l, amylase