

Case Report of a Totally Occluded Abdominal Aortic Aneurysm

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Introduction

Aortoiliac occlusive disease is a severe form of peripheral artery disease resulting from progressive atherosclerotic narrowing or occlusion of the abdominal aorta and iliac arteries. Total abdominal aortic occlusion is a rare but life-threatening vascular pathology representing the advanced stage of Leriche syndrome. Leriche syndrome (aortoiliac occlusion syndrome) develops as a result of chronic obstruction at the abdominal aortic bifurcation or in the iliac arteries. Due to complete occlusion of the abdominal aorta, symptoms include absence of femoral pulses, inability to walk (severe claudication), pain even at rest, impotence, and severe ischemic pain and coldness in the lower extremities. It often develops due to progressive atherosclerotic disease or a thrombus within an aneurysm. Especially when associated with an abdominal aortic aneurysm, the risk of acute or subacute limb ischemia, amputation, and mortality increases significantly. Computed tomography (CT) angiography is currently recognized as the gold standard imaging method for both confirming the diagnosis and assessing the anatomical extent of the lesion. Early diagnosis and the determination of an appropriate revascularization strategy are of critical importance in reducing limb loss and mortality. In this case presentation, a case of total aortoiliac occlusion due to a thrombosed abdominal aortic aneurysm in a patient who had previously undergone an aortobifemoral bypass operation is presented, and the diagnostic approach and treatment process are discussed in light of the current literature.

Keywords: Leriche syndrome; Aortobifemoral bypass; Abdominal aortic aneurysm; Ischemic pain; Computed tomography angiography

Case Presentation

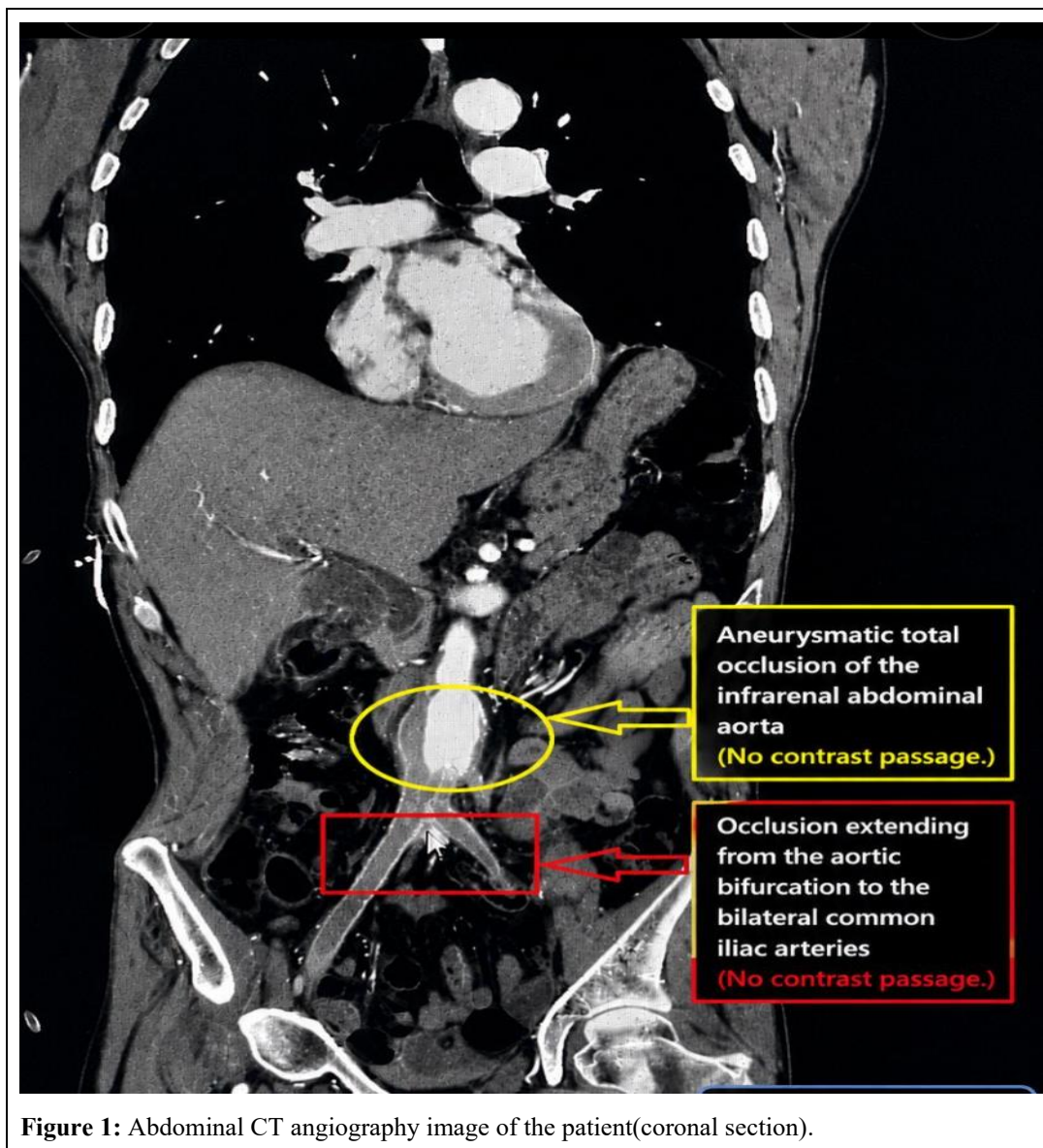
A 60-year-old male patient presented with abdominal pain and bilateral lower extremity pain that began 5 days ago and has been progressively worsening. It was noted that the pain was mild at first, increased over time, became more pronounced with walking, and has persisted even at rest in recent days. The patient appears cachectic and has a history of hypertension, coronary artery disease, chronic kidney disease, peripheral artery disease, and an aortobifemoral bypass performed 7 years ago. Medications currently being taken: acetylsalicylic acid 100mg, lansoprazole 30mg, atorvastatin 40mg, furosemide 40mg, ramipril 2,5mg. On physical examination, the patient is in good general condition, GCS 15, alert, cooperative, and oriented.

Neurological and respiratory system examinations are normal; abdominal examination reveals generalized tenderness and a palpable pulsatile mass along the midline; extremity examination shows bilateral lower extremities with a cyanotic appearance and are cold; cardiovascular system examination reveals normal S1-S2 sounds, no additional sounds or murmurs, and femoral pulses cannot be detected in both lower extremities. The electrocardiogram (ECG) revealed sinus tachycardia. Vital signs were recorded as blood pressure 120/80 mmHg, respiratory rate 20 breaths/min, pulse rate 110 beats/min, temperature 36.5°C, and SpO₂ 98% (without oxygen). The only significant finding in the laboratory results (table 1) is an elevated D-dimer level. This finding alone is not diagnostic; elevated levels are typically seen in the presence of thrombosis or embolism.

Table 1: Patient's Laboratory Findings.

Parameter	Result	Reference Range	Comment
Complete Blood Count			
White Blood Cells	6,73×10 ³ /μL	3,8 – 10,4 ×10 ³ /μL	-
Neutrophils	%63,4	%50 – 70	-
Hemoglobin	9,2 g/dL	13,6 – 16,9 g/dL	↓
Platelets	290 ×10 ³ /μL	150 – 450 ×10 ³ /μL	-
Biochemistry			
Creatinine	2,1mg/dl	0,7-1,3 mg/dL	↑
BUN(blood urea nitrogen)	44mg/dl	7-20 mg/dL	↑
CRP(C-Reaktif Protein)	3,5 mg/L	0-5 mg/L	-
Glucose	115mg/dL	74-106 mg/dL	↑
Coagulation			
INR	1,5	0,8-1,2	↑
D-dimer	6500 ng/mL	0-500 ng/mL	↑
Cardiac Marker			
hs-Troponin I (High-sensitivity Troponin I)	0,1 ng/mL	0 – 0,045 ng/mL	↑

The abdominal CT angiography (figure-1) report shows a thrombotic aneurysmal appearance measuring up to 37 mm at its widest point in a 7 cm segment of the distal abdominal aorta. From this level onwards, no contrast filling is observed in the lumen of the bilateral iliac and femoral arteries (total occlusion). The patient's echocardiogram showed an ejection fraction (EF) of 35%, normal cardiac chambers, and no intracardiac thrombus. The patient was consulted to the cardiac surgery department, and it was decided to admit the patient for surgery. The patient was given antiplatelet and analgesic treatment.



Discussion

Total occlusion of the abdominal aorta is a rare but severe clinical form of advanced atherosclerotic disease and is often considered the final stage of Leriche syndrome [1,3]. Although Leriche syndrome is classically defined in the literature by the triad of claudication, impotence, and absence of femoral pulses, not all components of this classic triad may be present in the early stages, and patients may most commonly present with acute lower extremity ischemia [2,5]. In our case, there was no history of impotence; bilateral femoral pulses were absent, and there was a patchy cyanotic appearance and coldness in the lower extremities, which was strongly consistent with advanced aortoiliac occlusion. This finding parallels the acute presentations reported in the literature [2,11].

Abdominal aortic aneurysms are typically asymptomatic and are often detected incidentally; however, when thrombosis develops, the clinical course changes dramatically, leading to a picture of acute arterial occlusion [4,8]. As in our case, the presence of total occlusion alongside a thrombosed aneurysm is a very rare condition, and this dual combination severely impairs perfusion of the distal arteries, leading to high mortality and morbidity [8,14].

In some studies, the mortality rate in thrombosed abdominal aortic aneurysms has been reported to exceed 30%, and this rate increases further, particularly in patients who present to the hospital late [8,14]. In our case, the patient's presentation with progressive symptoms over a 5-day period suggests a subacute course, which is consistent with the delayed presentations described in the literature [8,14]. Additionally, the patient's presence of multiple comorbidities, including coronary artery disease, hypertension, chronic kidney disease, and peripheral artery disease, is fully consistent with the risk factors reported in the literature [3,5-7]. In particular, a history of aortobifemoral bypass is a significant risk factor for graft thrombosis and progressive atherosclerotic disease; this is considered a key factor explaining the development of arterial occlusion in our case [12,13].

From a diagnostic perspective, CT angiography is considered the gold standard both for confirming the diagnosis and for demonstrating the anatomical location of the existing lesion [1,2,4]. In our case as well, CT angiography clearly demonstrated a thrombotic aneurysm in the distal abdominal aorta and total occlusion in the bilateral iliac arteries; these findings are consistent with the typical imaging features described in the literature [1,4]. Additionally, the patient's ejection fraction of 35% indicates a high surgical risk, which is an important factor in treatment planning [3,10].

From a treatment perspective, it has been reported that a conservative approach is insufficient for totally occluded abdominal aortic aneurysms and that surgical or endovascular revascularization is required in most patients [10,12,13,15]. Although open surgical methods offer advantages in terms of long-term patency rates, endovascular treatments are associated with lower mortality in high-risk patients [10,15]. In our case as well, an endovascular procedure was successfully performed due to the patient's multiple comorbidities and low EF value, with careful planning. This aligns with the patient-based treatment approach recommended in the literature [10,12,15].

It has been reported that amputation rates reach 20–30% in patients with acute lower extremity ischemia if early intervention is not performed [2,11,14]. From this perspective, early diagnosis and prompt surgical consultation in our case are of critical importance for preventing limb loss [2,11].

Conclusions

Although total occlusion of the abdominal aortic aneurysm is rare, it is a vascular emergency associated with a high risk of mortality and limb loss. Absence of bilateral femoral pulses and ischemic pain and coldness in the lower extremities are observed; in patients presenting with these symptoms, aortoiliac occlusion must be considered in the differential diagnosis. The primary cause is atherosclerosis. Medical treatment reduces cardiovascular risks and serves as supportive therapy. The primary treatment is surgical. CT angiography enables rapid and reliable diagnosis while playing a critical role in determining the anatomical extent of the lesion. Early diagnosis, prompt vascular surgical evaluation, and appropriate revascularization are the cornerstone approaches for reducing mortality and amputation rates. In the presented case, total aortoiliac occlusion resulting from a thrombosed abdominal aortic aneurysm was diagnosed via CT angiography and successfully treated with thrombectomy.

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