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Case report

A successful surgical management and outcome for a young man with infrarenal aortoiliac occlusion: A rare case report of Leriche syndrome

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ABSTRACT

Introduction and importance: Leriche syndrome, also known as aortoiliac occlusive disease, is characterized by chronic obstruction of the abdominal aorta and iliac arteries. The disease was first described by Robert Graham in 1814. Leriche syndrome was named after a French surgeon, Rene Leriche, who first operated on the condition.
Clinical presentation: We present a 35-year-old male patient who came to our cardiovascular polyclinic in a wheelchair. He had been complaining for a year about severe back pain, leg cramps on both sides, and weakness in both legs. Associated symptoms included fatigue, lower limb tingling, and numbness. Physical examination revealed pulselessness in the popliteal-dorsalis pedis and posterior tibial arteries in both lower extremities, and coldness and ulcers in the dorsum part of the foot.
Clinical discussion: Leriche syndrome often presents with a triad of clinical symptoms: (1) intermittent lower extremity vascular claudication, (2) impotence, and (3) weak/absent femoral pulses. This case report contributes to the current literature when any patient has lower limb weakness, pain, and ulcers. It must be considered in our differential diagnosis list for Leriche syndrome. This makes us more aware of the need for early diagnosis and intervention to decrease late complications of ischemia.
Conclusion: Leriche syndrome, also known as aortoiliac occlusive disease, is considered because of its high morbidity and mortality. This was the first case in Somalia to be successfully managed and operated on by using extra-anatomical bypass, especially axillo-bifemoral bypass, by using it as an emergency measure to save ischemic limbs and shorten the length of time in the hospital.

1. Introduction

Leriche syndrome, also known as aortoiliac occlusive disease, is characterized by chronic obstruction of the abdominal aorta and iliac arteries [1]. The disease was first described by Robert Graham in 1814 [2]. Leriche syndrome was named after a French surgeon, Rene Leriche, who first operated on the condition [1]. Leriche syndrome often occurs in males over 50 years of age, and it characteristically causes claudication in one or both lower extremities, absent or decreased femoral pulses, and erectile dysfunction in males [1,3]. The mortality and morbidity rates of LS have been reported to be between 4.5 and 5.0 % and 18–20 %, respectively [3,4]. The main treatment is surgery in LS, but angioplasty and endovascular stenting are the other treatment options in cases of focal involvement [5].

2. Case report

A 35-year-old male patient came to our cardiovascular polyclinic in a wheelchair. He had been complaining of severe back pain and bilateral leg claudication and weakness for 1 year. Associated symptoms included fatigue, cramping in the legs, lower limb tingling, and numbness. Further questioning also revealed no history of impotence. He has no past medical or surgical history, but he has a family history of coronary artery disease. One of his brothers died. On admission, vital signs were

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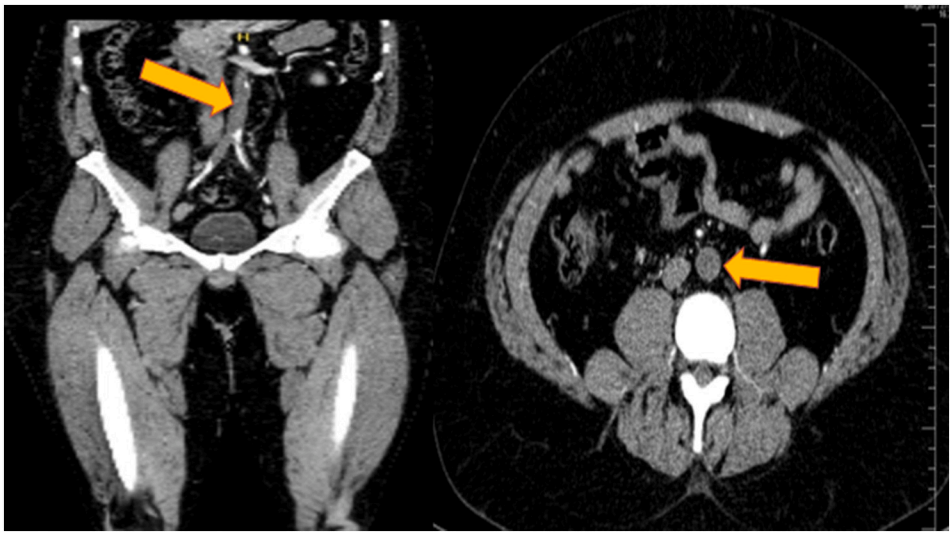

Figs. 1 & 2. CT angiography revealed no contrast filling the distal abdominal aorta below renal arteries but small contrast in right and left main iliac artery.

Figs. 3 & 4. Right thrombus from first day of embolectomy, left thrombus from second day of embolectomy.

as follows: blood pressure = 128/80 mmHg, pulse = 84 beats/min, respiratory rate = 18 min, temperature = 36 °C, and oxygen saturation = 98 %. Physical examination revealed pulselessness in the popliteal-dorsalis pedis and posterior tibial arteries in both lower extremities, and coldness and ulcers in the dorsum part of the foot. Areas on both lower extremities, as well as gangrene in the right foot's fourth and little finger. Sensory and motor exams were significantly normal. Other systemic examinations were normal. Laboratory tests were as follows: WBC = 11.1 × 10/mm^3, Hg = 15.7 g/dL, Hct = 44.6 %, APTT = 23.2 s, INR = 1.14, Creatinine = 0.87 mg/dL, urea = 14, AST = 15, ALT = 35, CK = 210 U/L, and CKMB = 105.8 U/L, Cholesterol = 318, TC = 208, LDL = 198, HDL = 39. Both lower extremity arterial color Doppler examinations showed no blood flow to the main femoral arteries or distally. The occlusion was found to extend to the upper parts of the main femoral artery. Abdominal CT angiography revealed there was no contrast filling the distal part of the abdominal aorta below the renal arteries, but there was small contrast in the right and left main iliac arteries, and there was no contrast filling after the external iliac artery due to thrombosis (Figs. 1, 2). The patient was immediately transferred to the operating theatre. He underwent an embolectomy by using a Fogarty catheter in the bilateral common femoral, upper and lower parts of which we removed the thrombus. After the operation, we immediately did CT angiography, which showed the abdominal aorta partially open and below the common femoral there was contrast filling up to the distal part in both lower extremities. We examined his legs the next morning; he had no pulse and was cold, so we decided to repeat the embolectomy and evacuate fresh thrombus (Figs. 3, 4). Following the second embolectomy, we performed an arterial Doppler scan, which revealed that blood flow in both common femoral arteries was normal. On the third day, we planned to do one of the extra-anatomical surgeries, especially the Axillo-Bifemoral bypass graft (Fig. 5). The operation ended successfully. Both lower extremity pulses returned to normal and became warm. There were no complications from the surgery. We amputated two gangrene fingers on the right foot. On the seventh day of the operation, the patient stands on his leg and is discharged on the tenth day.

3. Discussion

Aortoiliac occlusive disease is a relatively rare artery occlusive disease compared to infrainguinal arterial occlusive disease [6]. Limb amputation was reported to have an incidence of as much as 12 % [7]. For chronic cases, anatomical or extraanatomical by-pass is the first choice [8]. Patients often have associated cardiac risk factors such as hypertension, hyperlipidemia, diabetes mellitus, and tobacco abuse [9]. Leriche syndrome often presents with a triad of clinical symptoms: (1) intermittent lower extremity vascular claudication, (2) impotence, and

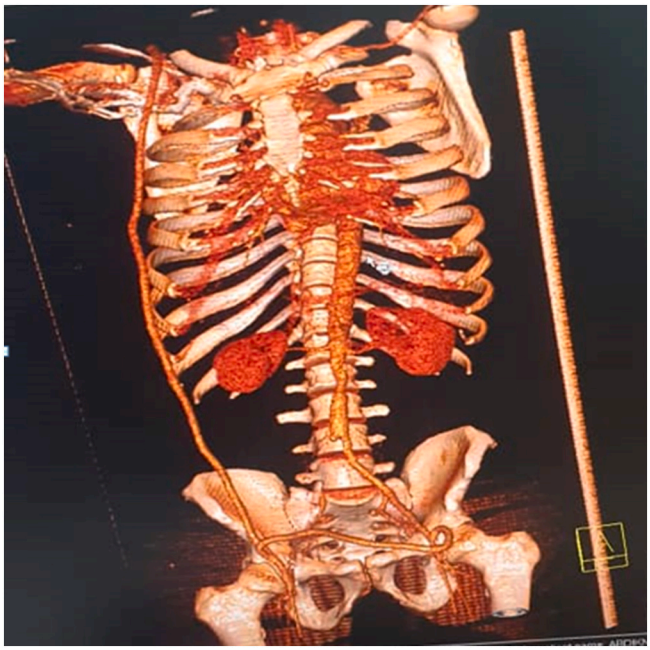

Fig. 5. Post op, CT angiography revealed extra-anatomical bypass graft. Axillo-bifemoral graft and right main iliac occlusion.

(3) weak/absent femoral pulses [10,11]. The aims of surgical treatment for Leriche syndrome are to alleviate the leg ischemia and prevent proximal propagation of the thrombus. Anatomical bypass satisfies both aims because good flow is resumed to the aorta proximally to the occlusion [12,13]. Advanced diagnostic imaging techniques such as abdominal ultrasonography and computed tomography angiography assist the clinician in confirming the diagnosis. Treatment is primarily surgical and consists of aortoiliac endarterectomy and aortobifemoral bypass. Alternative procedures described are percutaneous transluminal angioplasty with stenting and axillofemoral bypass [11,14]. Most of the literature on Leriche syndrome says that it happens most often in men over 40–50 years old who also have cardiovascular risk factors like high blood pressure, high cholesterol, diabetes mellitus, and smoking. This makes our case unique at 35 years old with no cardiovascular risk factors. This case report contributes to the current literature when any patient has lower limb weakness, pain, and ulcers. It must be considered in our differential diagnosis list for Leriche syndrome. This makes us more aware of the need for early diagnosis and intervention to decrease late complications of ischemia. As a result of this case, we are recommending extra-anatomical bypass, especially axillo-bifemoral bypass, by using it as an emergency measure to save ischemic limbs and shorten the length of time in the hospital. In developing countries, there are huge and widely limited cardiovascular surgery centers. Surgical techniques and advanced interventions, such as endovascular, were limited. The patient's vital signs were stable, distal pulses were present, and the limb ulcer healed. During postoperative follow-up, color Doppler ultrasonography revealed normal blood flow in this patient. This case has been reported in line with the SCARE 2020 criteria [15].

4. Conclusion

This was the first case in Somalia to be successfully managed and operated on. Therefore, we used the gold standard for diagnosis, CT angiography with contrast, to assess what was wrong. Any patient has lower limb weakness, pain, and ulcers. It must be considered in our differential diagnosis list for Leriche syndrome. Extra-anatomical bypass, especially axillo-bifemoral bypass, by using it as an emergency measure to save ischemic limbs and shorten the length of time in the hospital.

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Ethical approval

According to our hospital rule, Ethical approval is only required in articles but not case reports.

Consent

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Author contribution

All authors contributed toward writing, analysis, drafting, and revising the paper and they gave final approval of the version to be published, and agree to be accountable for all aspects of the work.

Registration of research studies

Not applicable.

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Declaration of competing interest

I declare that there is no competing interest related to the study, authors, other individuals, or organizations.

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