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Arteriovenous Fistulization of a Partially Thrombosed Common Iliac Artery Aneurysm Revealed by Lower Limb Claudication: A Case Report

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ABSTRACT

Common iliac artery aneurysms are rare vascular lesions that may lead to severe complications such as arteriovenous fistulization. We report the case of a patient investigated for stage II peripheral arterial disease of the right lower limb. CT angiography revealed a partially thrombosed aneurysm of the right common iliac artery complicated by fistulization into the ipsilateral common iliac vein, associated with diffuse bilateral atherosclerotic occlusive disease. This case highlights the importance of CT angiography in diagnosing aneurysmal vascular complications and evaluating associated peripheral arterial disease.

KEYWORDS :

Common iliac artery aneurysm, Arteriovenous fistula, Peripheral arterial disease, Atherosclerosis, Superficial femoral artery occlusion .

MAIN ARTICLE

INTRODUCTION

Isolated iliac artery aneurysms are rare vascular lesions accounting for less than 2% of intra-abdominal aneurysms. They are frequently associated with advanced atherosclerotic disease and may remain asymptomatic until complications occur.

Arteriovenous fistulization of an iliac artery aneurysm into the iliac venous system is an uncommon but serious complication that may result in venous hypertension, heart failure, or limb ischemia. Computed tomography angiography (CTA) is the imaging modality of choice for diagnosis, assessment of vascular anatomy, and therapeutic planning [1,2].

CLINICAL PRESENTATION

A patient was referred for CT angiography of the lower limbs for evaluation of stage II peripheral arterial disease involving the right lower extremity.

CT Findings

- Fusiform aneurysmal dilatation of the right common iliac artery, partially thrombosed, measuring 31 mm in maximum diameter and extending over approximately 39 mm.
- Presence of a posterolateral wall defect measuring 8.2 mm associated with contrast extravasation into the ipsilateral common iliac vein, which demonstrated arterial phase enhancement.
- Similar arterial enhancement was identified within the inferior vena cava proximally and the downstream venous network, consistent with arteriovenous fistulization.

DISCUSSION

Common iliac artery aneurysms are uncommon and most frequently result from atherosclerotic degeneration. Risk factors include:

- Advanced age
- Smoking
- Hypertension
- Generalized atherosclerotic disease

Spontaneous fistulization between an iliac artery aneurysm and adjacent venous structures is a rare complication.

Clinical Presentation

Patients often present with:

- Lower limb ischemia
- Venous congestion
- High-output cardiac failure
- Pulsatile pelvic mass
- Claudication

In this case, lower limb arterial insufficiency was the revealing symptom [2].

Radiological Features [3]

CT angiography is essential for diagnosis and preoperative planning.

Characteristic imaging findings include:

- Iliac artery aneurysmal dilatation
- Partial mural thrombosis
- Early venous enhancement during arterial phase
- Contrast extravasation into venous structures
- Associated peripheral arterial occlusive disease

The demonstration of simultaneous arterial and venous enhancement strongly supports the diagnosis of arteriovenous fistula.

Differential Diagnosis

Differential diagnoses include:

- Contained aneurysmal rupture
- Pseudoaneurysm
- Isolated venous malformation
- Traumatic arteriovenous fistula [3, 4].

Management

Management generally involves urgent vascular intervention because of the risk of rupture and hemodynamic complications.

Treatment options include:

- Endovascular stent graft repair
- Open surgical repair
- Hybrid vascular procedures

Associated peripheral arterial disease may require additional revascularization procedures [3,5].

CONCLUSION

This case illustrates a rare complication of a partially thrombosed right common iliac artery aneurysm complicated by fistulization into the common iliac vein in a patient with extensive peripheral arterial disease. CT angiography played a pivotal role in identifying the aneurysm, confirming the arteriovenous fistula, and assessing the extent of associated atherosclerotic occlusive disease. Early recognition is essential for appropriate vascular management and prevention of severe complications.

FIGURES

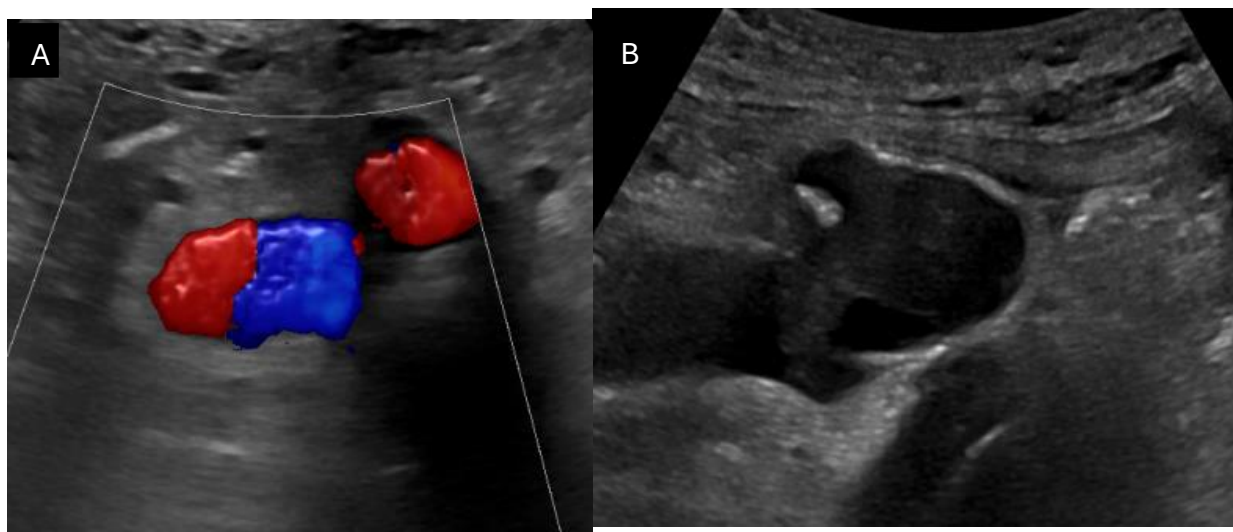


Figure 1 : Doppler ultrasound demonstrating aneurysmal dilatation of the right common iliac artery with turbulent intraluminal flow (A) suggestive of arteriovenous communication (B).

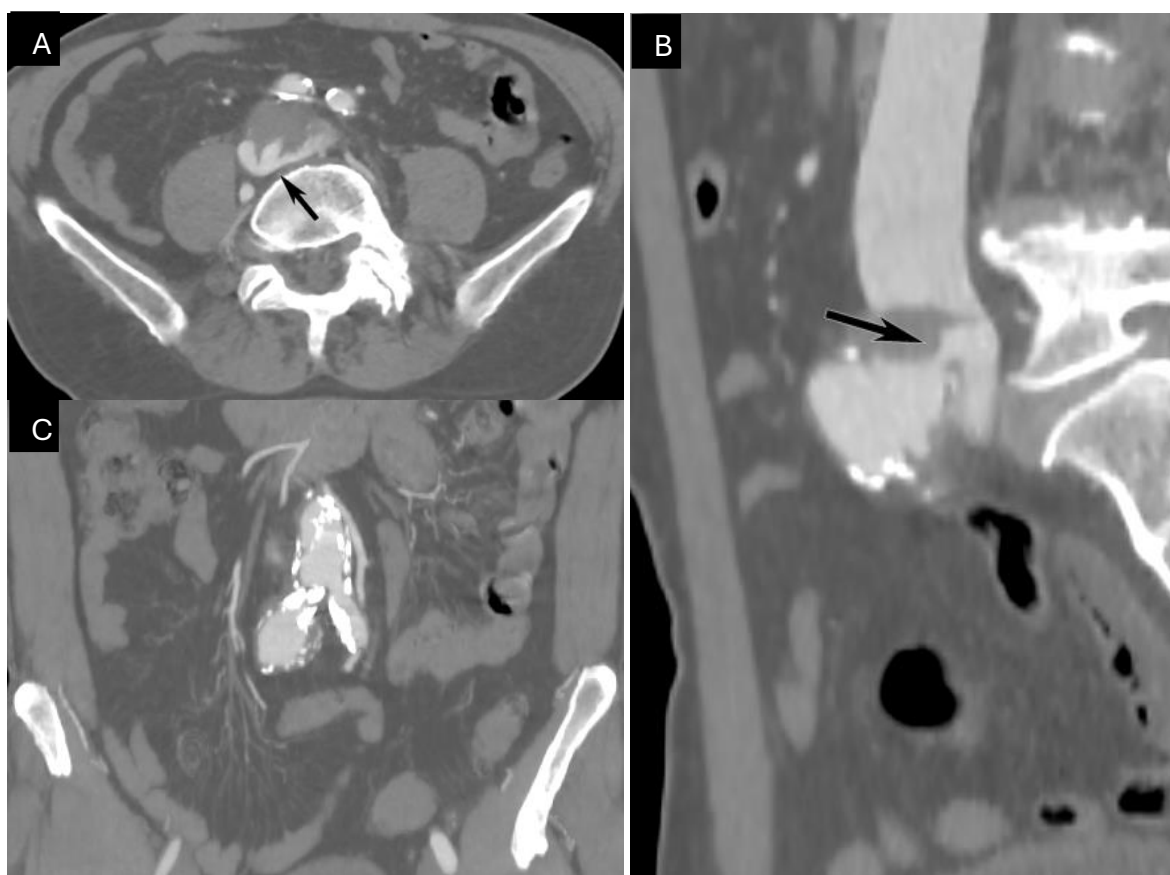


Figure 2 : Axial (A), Sagittal (B) and Coronal (C) CT angiography image demonstrating partially thrombosed fusiform aneurysm of the right common iliac artery.

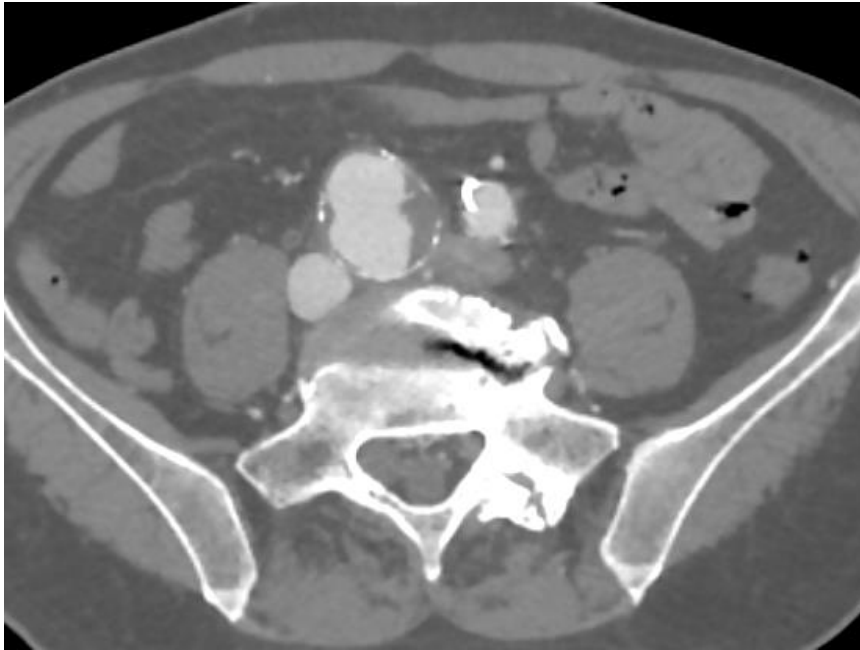


Figure 3 : Axial CTA reconstruction showing fistulous communication between the right common iliac artery aneurysm and the ipsilateral common iliac vein with early venous enhancement.

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