



ORIGINAL RESEARCH PAPER

Radio diagnosis

ILIAC ARTERY ANEURYSM PRESENTING AS HEMATURIA

KEY WORDS: ILIAC ARTERY ANEURYSM, HEMATURIA, COMMON ILIAC ARTERY

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ABSTRACT Isolated iliac artery aneurysm is uncommon. We report a rare case of 40 yrs male patient presenting with intermittent macroscopic hematuria as a complication of left common iliac artery aneurysm. There is no history of trauma. The patient underwent an ultrasound, cect abdomen and ct angiogram showing large common iliac artery aneurysm with thrombus compressing the left ureter. Although several case reports discussed the complications of iliac artery aneurysms, our case discusses about the rare symptom of hematuria as a complication of the large aneurysm.

INTRODUCTION

Iliac arterial aneurysms are focal dilations of the iliac artery associated with abdominal aortic aneurysms (AAA); 10-20% of AAAs involve the iliac arteries. Isolated iliac artery aneurysm is uncommon. Enlarged iliac arteries <3.0 cm tend to be asymptomatic. They present with mass effect and cause compression with gastrointestinal, genitourinary (hydronephrosis) as in our case and neurologic symptoms (sciatica). Ruptured aneurysms present with acute abdominal pain and shock.

CASE HISTORY:

40 yrs old male patient presented to the emergency department with a history of on and off hematuria since 10 months and abdominal pain in the left flank region. He is an occasional smoker and alcoholic. He is not known diabetic and hypertensive. There is no past history of trauma and no significant illness in the past. On general physical examination, the patient was moderately built and nourished, afebrile with BP 140 /90 mm Hg, respiratory rate 16/min, pulse rate 78/min, regular, normal volume. Systemic examination is uneventful. Patient was referred to an ultrasound abdomen to rule out the cause of hematuria.

Ultrasound abdomen revealed Large heterogeneously mixed echogenic mass with no internal vascularity in the left side of the abdomen and pelvis (fig 1)



Fig 1: ultrasound image showing large heterogenous mass posterior to the bladder (arrow)

The lesion is causing mass effect on the left ureter leading to moderate left hydronephrosis. There are no other calculi/masses inside the ureter as a cause of obstruction. (fig2).

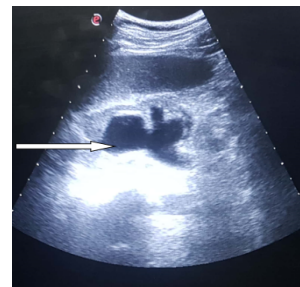


Fig 2: ultrasound image showing the left kidney with the dilated pelvicalyceal system (arrow).

on color Doppler Left common iliac artery shows the presence of a large saccular aneurysm with typical turbulent flow and ying-yang sign (fig 3).

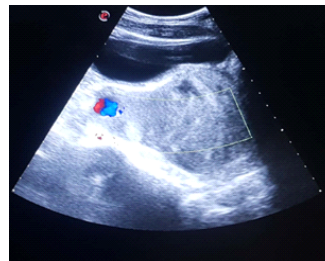


fig 3: ultrasound image showing ying yang sign (arrow) in the aneurysm of common iliac artery

on plain CT abdomen and pelvis, the large hypodense lesion is noted in the left side of pelvis posterior to Lt ureter and bladder with calcifications (fig4).

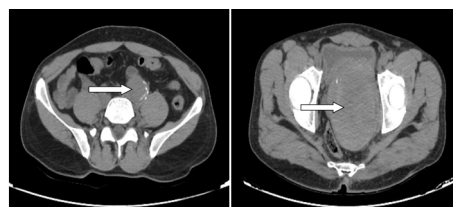


Fig 4: Plain axial sections of ct abdomen showing large hypodense thrombus with peripheral calcification.

CT Abdominal angio is showing narrowing of left common iliac artery distal to bifurcation and there is no associated abdominal

aortic aneurysm.(fig5).

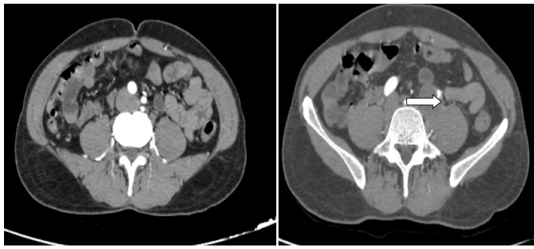


Fig5: CT angio images showing narrowing of left common iliac artery distally

and saccular aneurysm of left common iliac artery proximal to the bifurcation with surrounding large non enhancing thrombosis/hematoma(fig 6).

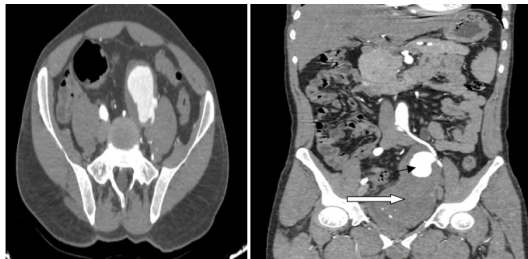


Fig 6: axial and coronal images showing aneurysm (black arrow) from left common iliac artery surrounded by large thrombus(white arrow).

An aneurysm is sparing the left external and internal iliac arteries(fig 7).

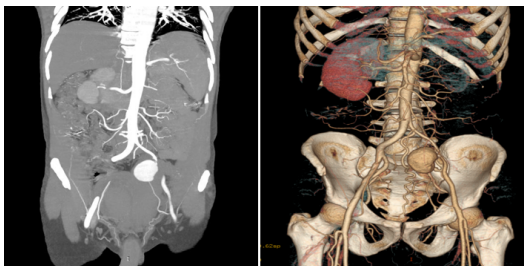


Fig 7: coronal MIP and 3D volume rendered images showing aneurysm of the left common iliac artery with adequate proximal neck and no distal landing zone(type b)

DISCUSSION:

Iliac arterial aneurysms are focal dilatations of the iliac artery. common iliac artery (CIA) with a diameter of ≥ 1.7 cm in males or ≥ 1.5 cm in females is considered ectatic. diameter > 2.5 cm is considered aneurysmal. An internal iliac artery diameter of ≥ 0.8 cm is ectatic. Iliac artery aneurysms are associated with abdominal aortic aneurysms (AAA); 10-20% of AAAs involve the iliac arteries. Isolated iliac artery aneurysm is uncommon. The common iliac artery is most commonly involved (70%), whereas the internal iliac artery is involved in 25%. External iliac arterial involvement is very rare. Enlarged iliac arteries < 3.0 cm tend to be asymptomatic. They present with mass effect and cause compression with gastrointestinal, genitourinary (hydronephrosis) and neurologic symptoms (sciatica). Ruptured aneurysms present with acute abdominal pain and shock.

Causes include atherosclerosis, Infection, trauma, dissection, connective tissue disorders, fibromuscular dysplasia, cystic medial necrosis.

Classification of isolated iliac arterial aneurysms

Isolated iliac artery aneurysms (IIAs) are classified according to their anatomy.

The proximal non-aneurysmal artery is defined as the proximal

neck or landing zone and distal non-aneurysmal artery is defined as the distal landing zone.

- **type A :** the CIA aneurysm proximally involves or extends within 1.5 cm of the aortic bifurcation. distally, it extends to or beyond the internal iliac artery
- **type B:** the CIA aneurysm has an adequate proximal neck (i.e. ≥ 1.5 cm of non-aneurysmal artery). there is however, no distal landing zone.
- **type C:** the CIA has an adequate proximal neck as well as a distal landing zone
- **type D:** a solitary internal iliac artery aneurysm which spares the internal iliac artery origin
- **type E:** the CIA aneurysm extends into the internal iliac artery

Aneurysm of the iliac artery usually coexists with abdominal aortic aneurysms and commonly seen in men. Diagnosis is difficult not only because of its rare occurrence but also because of its atypical presentation and deep anatomical location in the pelvis. For these reasons , an aneurysm of iliac artery is often not considered in the differential diagnosis of macroscopic hematuria.4 when an aneurysm of iliac artery increases in size , symptoms appear as the result of compression or rupture into adjacent organs causing urological, gastroenterological and neurological symptoms. The urological symptoms include hematuria, bladder outlet obstruction, and flank pain.

Direct rupture of iliac artery aneurysm into the bladder associated with hematuria is rare, and only a few cases have been reported .it is important to note that hematuria secondary to a large aneurysm of iliac artery does not necessarily suggest an arterio-vesical or arterial ureteral fistula. The hematuria may be due to bladder mucosal bleeding as a result of congested perivesical vessels resulting from aneurysm compression4. This explains the cause of hematuria in our patient because no other cause of bleeding was identified by the series of investigations.

TREATMENT: Follow-up of asymptomatic incidentally-detected iliac artery aneurysms :

< 3.0 cm: rarely rupture, grow slowly, follow-up not generally needed

3.0-3.5 cm: followed up initially at 6 months if stable, then annual imaging

> 3.5 cm: greater likelihood of rupture, < 6 months follow up, consider intervention

Two methods of treatment are currently available open surgery and endovascular aneurysm repair (EVAR)3. Surgical resection and reconstruction remain the gold standard for definitive management7. CT guided embolization of aneurysmal sac can also be performed, but the long term outcomes of this technique have not been studied6 . In our case, the patient was reviewed by vascular surgeons and referred to higher centers for better management.

CONCLUSION :

Iliac artery aneurysm is focal dilation of iliac artery commonly associated with abdominal aortic aneurysm. Isolated common iliac artery aneurysm is rare and mostly asymptomatic when they are small in size. when increased in size symptoms appear as a result of compression or rupture into adjacent organs. In our case, patient presented with intermittent hematuria left flank pain due to the bladder mucosal bleeding as a result of congested perivesical vessels and hydronephrosis respectively from large left common iliac artery aneurysm. So every case of macroscopic hematuria should be screened with ultrasound and viewed with caution to rule out the rare causes like iliac artery aneurysm and it should be kept as one of the differentials.

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