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Case Report

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Rupture of renal artery aneurysm secondary to vaginal delivery, a case report

Abstract

Renal artery aneurysm (RAA) is rare and generally asymptomatic. Rupture, thrombosis and intra-renal embolism are complications of aneurysm, which can lead to renal infarction and haemorrhagic shock. Aneurysms are often discovered incidentally during imaging examinations or when investigating other diseases. Treatment is varied, ranging from endovascular techniques to open surgery and renal auto transplantation. We report the case of a young woman followed for a renal artery aneurysm that ruptured during vaginal delivery.

Keywords: renal artery aneurysm, renal auto transplantation, renal infarction, haemorrhagic shock, thrombosis, aneurysmorraphy, aneurysmectomy

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Cheikh Saad Bouh Khatraty,[1] Nabil Alaoui Mhammedi,[1] Marlyatou Diallo,[1] Mustapha Ahsaini,[1] Soufiane Mellas,[1] Jalal Eddine EL Ammari,[1] Mohammed Fadl Tazi,[1] Mohammed Jamal Fassi,[1] Moulay Hassan Farih,[1] Abderrahmane Mohamed cheikh,[2] Fatima Zahra Fdili,[2] Moulay Abdelilah Melhouf[2]

[1]Department of Urology, Hassan II University Hospital Fez, Sidi Mohamed Ben Abdellah University, Morocco
[2]Department of Gynecology, Hassan II University Hospital Fez, Sidi Mohamed Ben Abdellah University, Morocco

Correspondence: Cheikh Saad Bouh Khatraty, Department of Urology, Hassan II University Hospital Fez, Sidi Mohamed Ben Abdellah University, Morocco, Tel 00212632766776, Email dr.khatrat@gmail.com

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Abbreviations: RAA, renal artery aneurysm; FMD, fibromuscular dysplasia

Introduction

Renal artery aneurysms (RAA) are a rare condition. Their incidence is estimated at around 0.1%, representing around 20% of visceral artery aneurysms. Nevertheless, their frequency is tending to increase as a result of the multiplication and improvement of diagnostic imaging examinations.[1]

Classically, a distinction is made between saccular aneurysms (the most common), fusiform aneurysms, dissecting aneurysms and atheromatous aneurysms. Aetiologies include fibromuscular dysplasia (FMD), arteritis (Behcet, Recklinghausen, Ehlers Danlos, PAN), iatrogenic causes, trauma and atheroma. In a number of cases, the etiology remains undetermined. The circumstances in which aneurysms are discovered vary. Aneurysms may be responsible for hypertension through a variety of hemodynamic, embolic or mechanical mechanisms. The diagnosis may also be made in the presence of hematuria or low back pain.

Observation

Mrs. M., 30 years old, had undergone a left nephrectomy for renal artery aneurysm. She was admitted to the Hassan II University Hospital in Fez for treatment of haemorrhagic shock following vaginal delivery of a male and female newborn. The patient was taken to the operating theatre, where she was examined and found to have a large hemoperitoneum. The procedure consisted of packing and transfer to our facility.

On admission to our facility, we performed an Angio scan Figure 1, which revealed a partially thrombosed aneurysm of the right renal artery, complicated by a rupture with a voluminous subhepatic hematoma; aneurysms of the inferior mesenteric artery, primitive right internal iliac artery and left internal and external iliac arteries, partially thrombosed; moderate hemoperitoneum; the patient was then transferred to the operating room. The first stage of the operation involved an unsuccessful attempt to repair the aneurysm of the right renal artery, followed by a right nephrectomy and a right hemicolectomy with stoma after discovery of ischemia of the ascending colon. The post-operative course was marked by the development of a state of haemorrhagic shock refractory to resuscitation measures, and a repeat operation was indicated but not completed following the patient's death on the table.

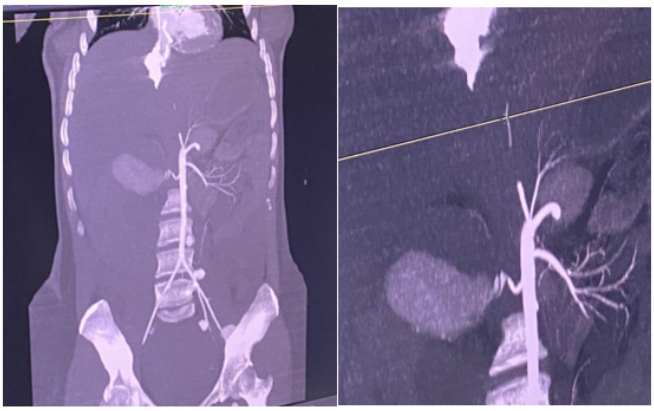

Figure 1 Abdomino-pelvic angioscan showing aneurysm of the right renal artery.

Discussion

RAA rupture is a rare occurrence in the general population, with an incidence rate of 0−10%. Although uncommon, RAA rupture during pregnancy is a catastrophic emergency that can have fatal consequences for mother and fetus.[2] Renal artery aneurysms are rarely symptomatic, with some non-specific signs (lumbago) reported. If there is the slightest doubt, imaging is essential: angioscan and/or angiography are the best procedures for making the diagnosis.[3] The indication for surgery is obvious for ruptured, symptomatic or infectious AARs. For asymptomatic AARs, there is no correlation

between diameter and rupture, and no consensus on a threshold diameter. Women of childbearing age should be treated because of the greater risk of rupture during the third trimester of pregnancy, due to the increased volume and vascular flow during pregnancy, and the changes in abdominal pressure caused by the gravid uterus. Association with periarteritis nodosa, FMD or poorly controlled hypertension are also factors that should prompt intervention.[4] In our patient, despite anatomopathological examination of the surgical specimen, no cause was found to explain her multiple aneurysms.

Treatment options include watchful waiting, endovascular treatment and open surgery. Open surgical treatment consists of aneurysmorraphy, aneurysmectomy with or without reconstruction and ligation, while endovascular technique using microcoils is considered a feasible alternative for the treatment of saccular renal artery aneurysms, which can be selectively excluded without compromising the blood supply to many segments of the renal parenchyma. Robot-assisted laparoscopic techniques have recently been described, and require a multidisciplinary approach involving vascular surgeons, general surgeons and urologists; however, a direct comparison with open and endovascular techniques has yet to be made.[5]

Conclusion

Renal artery aneurysms are rare and generally asymptomatic. In pregnant women, symptoms are more intense due to the physiology of pregnancy. Management is essentially surgical. A prompt, multidisciplinary approach guarantees the best results.

Acknowledgments

None.

Conflict of interest

The authors declares that there is no conflict of interest.

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