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SPONTANEOUS RETROPERITONEAL HAEMORRHAGE DUE TO RUPTURED INTRARENAL ARTERIOVENOUS MALFORMATION- A RARE CASE REPORT

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ABSTRACT

Renal arteriovenous malformations (AVMs) are abnormal communications between the intrarenal arterial and venous systems. The incidence of renal arteriovenous malformation (AVMs) is <0.04%. We reported a case of a 61-year-old man who presented with spontaneous retroperitoneal hemorrhage due to ruptured intrarenal arteriovenous malformation

INTRODUCTION

Spontaneous retroperitoneal hemorrhage due to ruptured intrarenal arteriovenous malformation is a rare condition. The incidence of renal arteriovenous malformation (AVMs) is <0.04%. We reported a case of a 61-year-old man who presented with spontaneous retroperitoneal hemorrhage due to ruptured intrarenal arteriovenous malformation

Case Report

A 61-year-old elderly male, known hypertensive and on Direct Thrombin Inhibitors for atrial fibrillation arrived at casualty with acute onset right flank pain. He was conscious and oriented. On examination, the patient had tenderness over the right flank and hypotension. The patient was resuscitated with IV crystalloids. Blood analysis showed hemoglobin 10.3g/dl, serum creatinine-1.46 mg/dl, prothrombin time/PT- 17.3 seconds, INR-1.4, activated partial thromboplastin time/aPTT- 32 seconds.

Ultrasonography showed an irregular vascular lesion 7.6X6.4 cm in the renal parenchyma with a large perirenal collection (100 ml).

CT abdominal angiogram is suggestive of ruptured arteriovenous malformation with large retroperitoneal hematoma (17X16X15.5 cm) as shown in Fig-1.

Selective angioembolisation was planned. Multiple attempts to occlude the AVM failed due to the large size of the AV fistula. Fig-2 shows the measurement of the dilated renal artery on angiography. The right renal artery was occluded using a Fogarty balloon catheter in Fig-2 and the patient was immediately taken up for Open Nephrectomy. Histopathology evaluation revealed evidence of ruptured AVM and thick-walled vessels of varying caliber with abnormal vascular dilation filled with blood. Post-operative 6-month ultrasound abdomen showed no evidence of free fluid in the abdomen.

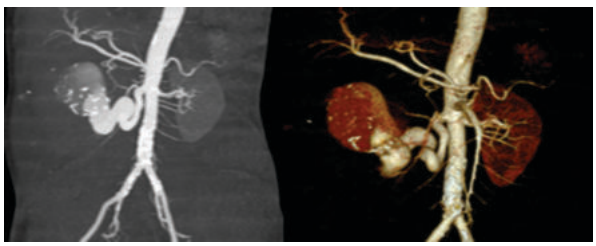

Fig-1: Dilated and tortuous Right Renal artery and 3D Reconstruction

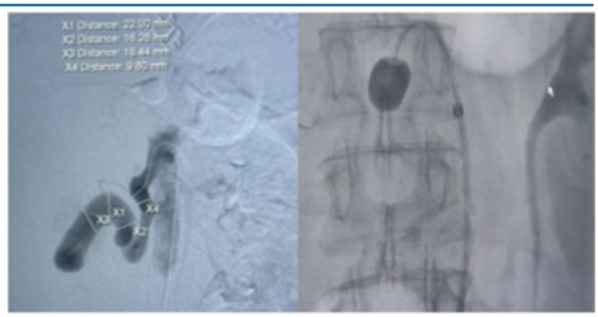

Fig-2 Measurements of Dilated Renal artery on Angiography and Fogarty balloon in right renal artery

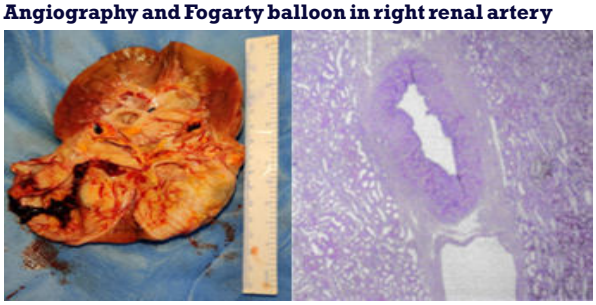

Fig-3 Nephrectomy specimen and Histopathological slide

DISCUSSION

Renal arteriovenous malformations (AVMs) or arteriovenous fistulas (AVFs) are abnormal communications between the intrarenal arterial and venous systems. Renal AVM is rare, with an estimated incidence of less than 0.04% [1][2]. Renal AVM can be idiopathic, congenital, or acquired.

Congenital arteriovenous malformations are considered focal spontaneous failures of vascular development occurring during 1st trimester of gestation[3]. They make up to 25% of all cases and are usually present in the third to fourth decade of life. Females are three times more likely to be diagnosed with renal AVMs than males, with the right kidney more commonly affected than the left[4]. Renal AVM is sometimes associated with genetic disorders such as hereditary hemorrhagic telangiectasia[5].

There are two types of congenital AVMs. The most common is the "cirsoid" type. It has multiple communicating vascular channels that form a mass-like cluster, that lies deep to the

uroepithelium in the lamina propria[2]. The less common type is the "cavernous aneurysmal" AVM, which consists of a single feeding artery and a single draining vein communicating via a cavernous chamber. Acquired renal AVMs are frequently referred to as arteriovenous fistulas. This is the most common type (70 to 75% of all cases), frequently occurring due to iatrogenic trauma such as renal biopsy or surgery. The idiopathic or acquired types cause abdominal bruit, hypertension, headache, palpitations, cardiomegaly, and congestive cardiac failure resulting from the large amount of blood flowing through the AVF[6]. The goal of AVM treatment is the preservation of the functioning renal parenchyma. Selective angioembolisation has become the management of choice when active bleeding is recognized on angiography. Surgery remains a reasonable choice when embolization is unsuccessful.

CONCLUSION

We reported a case of spontaneous retroperitoneal hemorrhage due to ruptured intrarenal arteriovenous malformation which is an infrequent entity and only a limited number of cases have been described in the literature. Angioembolization is considered the primary therapeutic option for renal AVMs. However surgical exploration remains a reasonable choice in selected conditions as in our patient.

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