

Nontraumatic Renal Arteriovenous Fistula

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Received date: July 06, 2016; Accepted date: August 05, 2016; Published date: August 12, 2016

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Abstract

Renal arteriovenous (AV) fistulas and malformations are rare in nature with a prevalence of 0.4%. They are commonly associated with traumatic injuries (50-80%) and degenerative changes or inflammation. We present a case of non-traumatic renal AV fistula causing a hypertensive crisis.

Keywords: Renal arteriovenous fistula; Inflammation; Hematuria

Introduction

Renal arteriovenous (AV) fistulas and malformations are rare in nature with a prevalence of 0.4% [1]. They are commonly associated with traumatic injuries (50-80%) and degenerative changes or inflammation [2]. We present a case of non-traumatic renal AV fistula causing a hypertensive crisis.

A 42 year old African American gentleman with mild morbid obesity and a ten year history of hypertension was referred to the hypertension clinic due to poorly controlled hypertension for the 6 months prior to his visit. This required multiple changes in his anti-hypertensive medications. Blood pressure was consistently around 180/100 mmHg. Recent medications included hydrochlorothiazide, clonidine, and angiotensin converting enzyme (ACE) inhibitor.

On presentation to the clinic, the patient was complaining of severe headaches and his blood pressure was 210/140 mmHg. Patient was immediately admitted to the intensive care unit, started on cardene drip to keep his blood pressure around 150/90 mmHg. Physical exam revealed a bruit over the right kidney. Kidney function was normal.

CT scan of head was negative for bleed. EKG showed left ventricular hypertrophy. Ultrasound Doppler showed high flow and turbulent flow suggestive of an AV malformation.

Patient underwent renal arteriography, which revealed a large renal AV fistula with infra-hilar involvement and high flow (picture). Coil embolization and surgical revascularization were determined to not good options. The patient required a nephrectomy to control blood pressure.

Discussion

Renal AV fistula is an unusual presentation as discussed above. It is usually difficult to diagnose. Patients usually present with hypertension and hematuria [3]. Etiologies include congenital, trauma, malignancies, surgery and percutaneous kidney biopsies [1,3]

Treatment and management include transcatheter coil embolization, surgical resection, or a combination of the two for definitive treatment [3]. Embolization is generally preferred in patients with only one functioning kidney and in poor surgical candidates [2,4].

Conclusion

Renal AV fistula is uncommon, however it should remain on one's differential especially in cases of post-traumatic uncontrolled hypertension or when chronic hematuria is present.

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