A Case of Back Pain with Resistant Hypertension Resulting From an Anomalous Accessory Renal Artery

Glenn S. Chapman III DO, Dipl. NMM, CAQPM, Jonathan Decker DO, and Joel S. Stein DO, FAAO, FAOASM, FACOFP
Larkin Community Hospital, South Miami, FL.

Introduction

The presence of an accessory renal artery can be a potential alternate diagnosis for a patient with hypertension that is refractory to treatment for what is seemingly benign renal hypertension. The accessory renal artery usually branches directly from the aorta and usually serves a small portion of the kidney. Due to the presence of an accessory artery which causes an alteration in the fluid dynamics that effect the respective kidney, it develops kidney ischemia, thereby it causes an increase in renin secretions and this leads to a renal-vascular, renin-dependent hypertension, and a chronic kidney disease condition.

Case Presentation

A 60 year old male and avid off road four-wheeler presented with chronic low back pain and concomitant hypertension found on review of vital signs. After several follow-up visits and resolution of the back pain of chief complaint, the patient was noted to have consistently elevated blood pressure that was resistant to medical intervention. After having started the patient on a third medication for the patient’s blood pressure with poor response, the patient was diagnosed with resistant hypertension.

Imaging

Figure one: Demonstrates the origin of an accessory left renal artery from the aorta inferior to the left renal artery and left kidney.

Figure two: Demonstrates the path of the tortuous left accessory renal artery with insertion to the lower pole of the patient’s left kidney.

Conclusion

Accessory renal arteries can be potential causes of resistant hypertension. Abnormalities of renal structures may be present in up to 20-30% of adults. Ultrasound serves as an ideal screening modality for renal artery stenosis and accessory renal arteries due to its being non-invasive, free of radiation, low cost, and lack of contraindications because of renal failure and contrast allergy. After the establishment of a hemodynamically significant stenosis that results in hypertension there exist multiple treatment options. The treatment options which are to be considered for a hemodynamically significant stenosis of an accessory renal artery are embolization, balloon angioplasty, stenting and even partial nephrectomy.

References