**Retroaortic left renal vein**

**Published on 03.03.2005**

**DOI:** 10.1594/EURORAD/CASE.1668  
**ISSN:** 1563-4086  
**Section:** Cardiovascular  
**Imaging Technique:** CT  
**Case Type:** Clinical Cases  
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**Patient:** 66 years, male

**Discussion:**

The left renal vein passes posterior to the aorta. It is an asymptomatic anatomic variant demonstrated on abdominal CT examinations prepared for different purposes. Renal veins and the vena cava develop from cardinal veins during embryological development. Anomalies of the renal veins are classified in the same group with the inferior vena cava anomalies. The major anomalies in this group are classified as (1) retroaortic left renal vein, (2) circumaortic left renal vein, (3) left-sided inferior vena cava (IVC) without situs inversus, (4) left-sided IVC with situs inversus, (5) duplicate IVC, (6) preaortic confluence of the iliac veins. Retroaortic renal vein variant results from persistence of posterior intersupracardinal anastomosis with regression of anterior intersubcardinal anastomosis. The incidence of retroaortic left renal vein is between 1.8% and 2.4% and varies in different studies. There is a crossover occasionally at the level of the right renal vein. Congenital anomalies of major venous structures are not common, but their identification and relative position, particularly in relation to abdominal aortic aneurysms or surgical procedures of the kidneys and the perirenal area are of significant value in planning and conducting aortic operations. Fatal bleeding may occur during clamping of the aorta, caused by a more caudal insertion of the retro-aortic left renal vein and a greater vulnerability of the anomalous tissue. Once such a complication occurs, a reconstruction of the retro-aortic left renal vein using a synthetic graft should be performed to obtain adequate renal venous flow and maintain renal function. Prior to aortic surgery, a preoperative knowledge of the presence of such anomalies helps with operative planning and may reduce the risk of major venous hemorrhage associated with these anomalies. Preoperative diagnosis can be reliably made on a CT scan. Awareness of the associated anomalies such as duplication or transposition of the inferior vena cava makes the appearance of the anomalous left renal vein on CT scans distinguishable from the lymphadenopathy or dilated gonadal veins.

**Differential Diagnosis List:** Retroaortic left renal vein.

**Final Diagnosis:** Retroaortic left renal vein.
Figure 1

Description: The left renal vein crosses behind the aorta and the vertebral corpus at the same level with the right renal vein. A renal vein passing anterior to the aorta cannot be identified. Origin:
Description: Origin:
Description: Origin: