

Anatomical variations of the right renal and spermatic arteries: a case report

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Knowledge of the anatomy of renal vessels and their anatomical variations (diverse branching from abdominal aorta) represents an indispensable moment for planning and performing surgical operations in this area. Renal arteries originate from abdominal aorta at L1-L2 level. Normally the right renal artery passes behind inferior vena cava and right renal vein, the left one is shorter and passes behind left renal vein. Each renal artery gives inferior adrenal gland arteries and divides in four or five branches close to the hilum. Usually, shortly below the right renal artery, right gonadic artery arises and runs in front of the inferior vena cava.

In our Department, during a routine gross anatomy dissection of a 98-year-old Caucasian male cadaver for undergraduated, postgraduated students and residents, we observed that right renal artery exhibit an early bifurcation. The two arteries have a peculiar running, in spite of the more frequent behavior. They cross each other at the middle of the path between abdominal aorta and renal hilum forming a sort of knot. The lower branch goes up looking like a superior polar artery, from which stems a short retropericolic artery. Right gonadic artery originates from right renal artery in spite of its more frequent origin from abdominal aorta at L3 level. These monolateral variations are of course unusual but not responsible for any hemodynamic impairment. Probably as concerning the right renal artery variation it looks like that it is due to a non complete fusion of the primitive segmental arteries at the first steps of formation of right dorsalis aorta. This impinges on the fact that also the right gonadic artery stays close to the upper part of dorsalis aorta and therefore originates eventually from the right renal artery.

Keywords: Anatomical variations, kidney, renal artery, gonadic artery.