An Accessory Renal Artery Originating from the Testicular Artery, a Rare Variant

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Abstract Renal artery variations including their source, number, and course are very common. Accessory renal arteries were discovered frequently on the left side; these arteries entered the upper or lower poles of the kidney. The present cadaver showed a testicular artery origin of the accessory renal artery, which was seldomly described previously.

Keywords Accessory renal artery · Testicular artery · Origin · Variation

Case Report

During the dissection of an 86-year-old Chinese male cadaver, bilateral high origins of the testicular arteries were discovered. The right testicular artery originated from the abdominal aorta, superior to the root of the right renal artery. It coursed laterally behind the inferior vena cava, arching over the right renal vein to descend in front of it. Then, the right testicular artery descended anterior to the inferior pole of the

right kidney and the psoas major muscle to enter the inguinal canal (Fig. 1a).

The left testicular artery also arose from the abdominal aorta, 0.5 cm below the left renal artery. After a distance of 4.6 cm distal to its origin, the left testicular artery gave off an accessory renal artery. This artery ran anterior to the left testicular vein and ureter, and finally penetrated the parenchyma inferior to the hilum of the left kidney (Fig. 1b).

Discussion

It has been reported that the testicular artery, together with one of the suprarenal arteries, may originate from the abdominal aorta as a common trunk [1].

The renal blood supply is completely or partly provided by one or more arteries originating from the abdominal aorta. Accessory renal arteries may originate from the abdominal aorta, the renal artery, the common iliac, and the superior mesenteric artery. Very rarely they arose from the external iliac artery, internal iliac artery, median sacral artery [2], second and third lumbar artery, spermatic artery [3], ovarian artery, celiac artery [4], right colic artery, the twelfth intercostal artery, suprarenal superior artery, phrenic inferior artery, splenic artery [5], above the celiac axis [6], thoracic aortic segment [7], and contralateral renal artery [8].

Knowledge of these variations is very important to radiologists, urologists, and surgeons when performing operations in the retroperitoneal area.

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Fig. 1 Dissection of the retroperitoneal area, showing the renal and testicular vessels. **a** Dissection of the right retroperitoneal area: *RTA* right testicular artery, *RRA* right renal artery, *RRV* right renal vein, *RTV* right testicular vein, *RK* right kidney, *IVC* inferior vena cava, *AA* abdominal aorta, *U* ureter. **b** Dissection of the left retroperitoneal area: *LTA* left testicular artery, *LRA* left renal artery, *RRV* left renal vein, *LK* left kidney, *ARA* accessory renal artery, *AA* abdominal aorta, *U* ureter

Conflict of Interest The authors declare that they have no competing interests.

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