Double Right Testicular Arteries Passing Through the Hiatus in the Trifurcated Testicular Vein

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Abstract Variations of the testicular artery have been commonly described by many authors, although reports for accessory or double testicular arteries were scarce. The testicular vein displays a great variability as regards their numbers, courses, and sites of termination. We present here a single right testicular vein dividing into three trunks at the terminal drainage, and the bifurcated right testicular artery passed through the hiatus of the testicular vein.

Keywords Double testicular arteries · Trifurcated testicular vein · Accessory renal artery · Anatomical variation

Case Report

The right testicular vein (RTV) coursed along the retro-peritoneal region obliquely and upwards. Almost at the level of the right renal hilum, it was divided into three trunks. The lateral trunk passed over the accessory renal

artery and drained into the right renal vein (RRV). The middle trunk ran upwards between the lateral and medial testicular arteries and drained into the confluence of the inferior vena cava (IVC) and RRV. The medial trunk coursed cranially and dorsally and drained into the IVC from the behind.

The right testicular artery originated from the abdominal aorta and ran a distance of 0.9 cm laterally behind the IVC. Then, it was separated into a lateral (LTA) and a medial testicular artery (MTA). The LTA descended over the hiatus between the lateral and middle trunks of the RTV, while the MTA coursed downwards between the middle and medial trunks of the RTV (Fig. 1).

Discussion

Once the double testicular arteries occurred, one of the arteries arose from the abdominal aorta, while the other from renal artery [1] or from a common trunk with the suprarenal artery [2], or both from the abdominal aorta [2]. Duplication of the right testicular vein was noticed in 15% of population [3]. Triple testicular veins have been seldomly reported in the literature [4], with its incidence estimated at approximately 2% [3]. Few reports described the relationship between the testicular artery and the testicular or renal vein. When a testicular artery passed through the divisions of the renal vein [5], it may get compressed between the renal veins, which may lead to degeneration of the testis.

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Fig. 1 Dissection of the right retroperitoneal area, showing the renal and testicular vessels. *LTA* lateral testicular artery, *MTA* medial testicular artery, *RTV* right testicular vein, *LT* lateral trunk of right testicular vein, *MT* middle trunk of right testicular vein, *mt* medial trunk of right testicular vein, *ARA* accessory renal artery, *RRV* right renal vein, *RK* right kidney, *IVC* inferior vena cava, *AA* abdominal aorta, *U* ureter

Variations of the testicular vein may result in persistence of the varicocele. Complex variations in the testicular blood vessels probably cause complexity of varicocelectomy or retroperitoneal vascular operations.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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