Ann Anat **187** (2005) 393–398

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Duplicate testicular veins accompanied by anomalies of the testicular arteries

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Received 14 February 2005; accepted 4 April 2005

KEYWORDS
Testicular vein;
Inferior vena cava;
Subcardinal vein;
Testicular artery

Summary

Duplicate testicular veins associated with other anomalies of the testicular arteries were observed during dissection of the posterior abdominal wall in a 90-year-old Japanese male cadaver. The right testicular vein was composed of the medial and lateral testicular veins. The medial testicular vein drained into the inferior vena cava, whereas the lateral testicular vein drained into the confluence of the inferior vena cava and right renal vein. Several anastomosing branches were seen between the medial and lateral testicular veins. The left testicular vein was formed after the medial and lateral venous trunks joined and drained into the ipsilateral renal vein. The right testicular artery originated from the anterior surface of the abdominal aorta at the level of the left renal artery, passed posterior to the inferior vena cava, and accompanied the right lateral testicular vein running downwards. The left testicular artery arose from the abdominal aorta at a level of 5 cm below the origin of the right testicular artery, and then ran downwards accompanied by the medial trunk of the left testicular vein.

Introduction

The testicular arteries are known to originate from the ventrolateral aspect of the abdominal aorta and descend obliquely to the pelvic cavity. Along their course, the testicular arteries are accompanied by the testicular vein. The testicular vein begins at the confluence of small branches from the testis and epididymis. These small branches run cranially to constitute the pampiniform plexus and further coalesce to form a single testicular vein. The right testicular vein generally drains into the inferior venae cavae, and the left testicular vein drains into the left renal vein. Though these anatomical features of the testicular vessels are relative constant (Ahlberg et al., 1966;

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doi:10.1016/j.aanat.2005.04.007

Machnicki and Grzybiak, 1997), occasional developmental and anatomical variations have been reported (Mijac et al., 1983; Asala et al., 2001). However, anomalies of the testicular veins associated with variations of the testicular arteries are seldom seen (Asala et al., 2001).

During a gross anatomy course for medical students, we found duplicate testicular veins and other anomalies of the testicular arteries in a male Japanese cadaver. Duplication of the testicular veins has been reported in previous studies of the testicular blood vessels (Bensussan and Huguet, 1984; Asala et al., 2001). Anomalies of the testicular veins and arteries that appear simultaneously in a specimen have also been described (Asala et al., 2001). However, the anomaly found in the testicular blood vessels in the present case has not been reported before. In the present report, we investigate the drainage, course, tributaries and communications of the testicular veins, the origin and course of the testicular arteries, and discuss their embryogenesis and clinical significance.

Materials and methods

An anomalous case of the testicular veins and arteries was encountered during a gross anatomy course for second year medical students of Nippon Medical School. This cadaver was a 90 year-old Japanese male (cadaver No: 2142), who had died of chronic renoprival syndrome, and had no history of abdominal operations. The abdominal cavity was opened by routine dissection of the abdominal wall. All abdominal organs and peritoneum of the posterior abdominal wall were resected to expose the

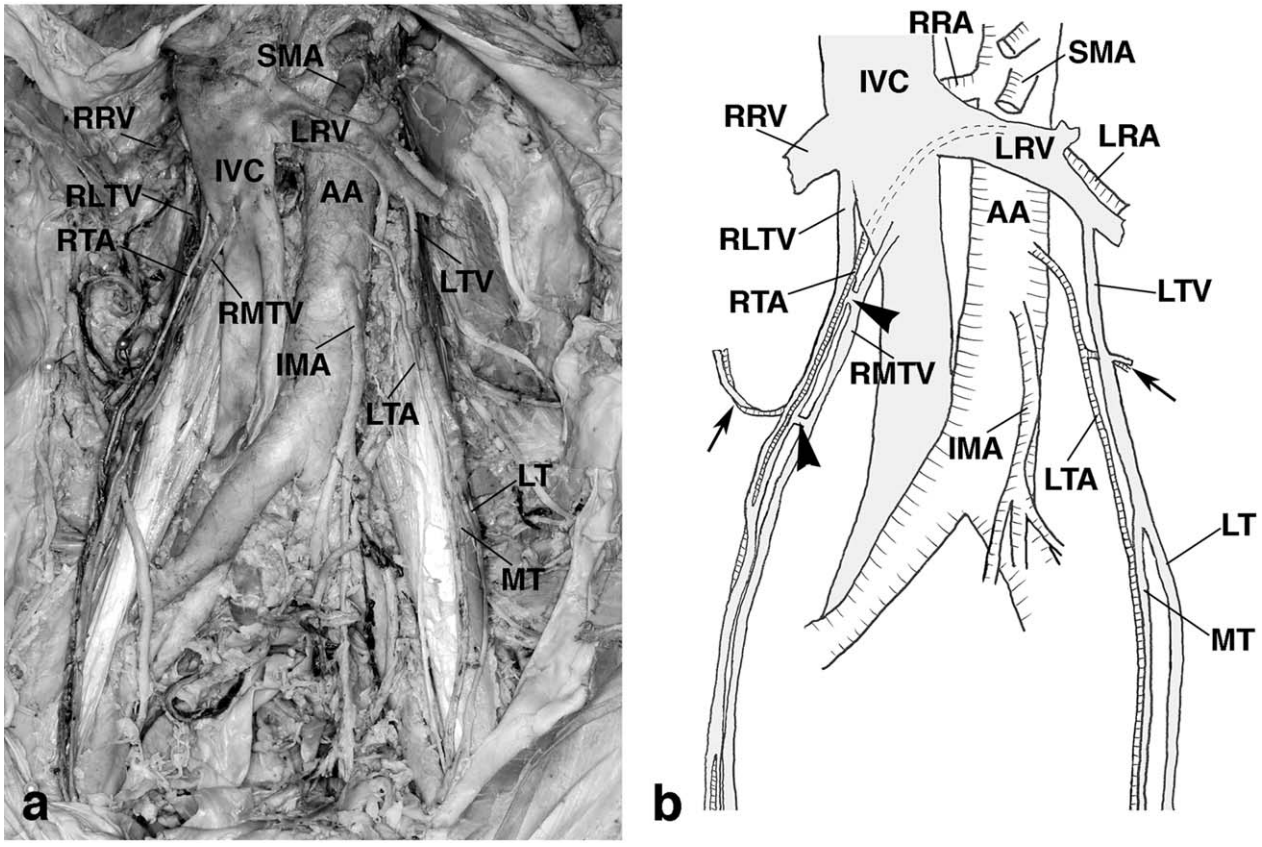

Figure 1. Photograph (a) and diagram (b) showing anomalies of the testicular blood vessels. Arrowheads indicate communicating veins between the right lateral testicular vein (RLTV) and right medial testicular vein (RMTV). Arrows indicate collateral branches of the testicular blood vessels in bilateral sides, which are connected with the renal capsula and ureter. AA: abdominal aorta; IMA: inferior mesenteric artery; IVC: inferior vena cava; LRA: left renal artery; LRV: left renal vein; LT: lateral trunk of the left testicular vein; LTA: left testicular artery; LTV: left testicular vein; MT: medial trunk of the left testicular vein; RRA: right renal artery; RRV: right renal vein; RTA: right testicular artery; SMA: superior mesenteric artery.