

ABNORMAL DRAINAGE OF RIGHT TESTICULAR VEIN

Virender Kumar Nim, Kalpana Mohandas

Department of Anatomy, Pondicherry Institute of Medical Sciences, Kalapet, Pondichary, India

Abstract: During routine dissection of abdomen it was found that in the right side testicular vein was draining into the renal vein. On further dissection right suprarenal was also seen draining into the renal vein. No other abnormality was found anywhere. Normally the right side testicular and suprarenal veins drain directly. It is described by only a few authors, and variations on the left side are common than the right side. This might be due to defective development of the subcardinal vein on the right side, which normally contributes in the formation of mainly the inferior vena cava and part of the right testicular vein. This type of variations become important during surgery of the kidney, in deciding the location of type the renal vein.

INTRODUCTION

Variation of the right gonadal vein draining in the right renal vein is reported by only a few authors as compared to the left side. Zumstein found this variation in 1.5% (4 out of 220 cases), as reported by Bergman. With very few literature citations present the knowledge of signification of these variation increases many folds as the testicular arteries and veins regulate the temperature of the testes. The knowledge of the normal as well as variation of the testicular vessels has its importance for the surgeons/nephrologists to prevent any accident.

CASE REPORT

During routine dissection of abdomen, it was found that the right side testicular vein also draining into the right renal vein. On further dissection right suprarenal vein also seen draining into the right renal vein (Fig. 1, 2 and 3). No other abnormality was found anywhere. Normally in the right side testicular and suprarenal veins directly drain into the inferior vena cava.

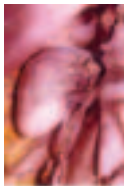


Fig. 1 Kidney in-situ



Fig. 2 Both Kidneys outside Anterior View

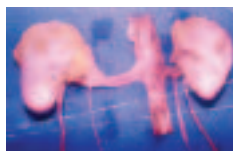


Fig. 3 Both Kidneys outside Posterior View

DISCUSSION AND CONCLUSION

Normally one testicular vein and one renal vein are present on each side of abdomen. On the left side the testicular vein opens in the renal vein, which crosses to the right side in front of the aorta and than draining into the inferior vein cava. But on the right side both testicular vein as well as renal vein open directly into the vein cava. The variations from this normal drainage pattern can be traced out to the embryological development of these structures. The supracardinal and sub cardinal sinuses developed during early embryogenesis. Persistence and regression of the right supracardinal sinus result in left gondola vein draining into the ipsilateral renal vein, and right gondola vein and right renal vein draining into the inferior vein cava. Embryo logically it has been shown in the studies that the embryonic anatomists. Gondola vein develop from the caudal part of the supranational vein draining into the supra-subcardinal anatomists and a small portion of the subcardinal vein form the Inferior

vein cava. This explains the right side gondola vein draining into the Interior vein cava. But on the left supra-subcardinal venous anastomosis form a part of the left renal vein, explaining left gonadal vein draining into the ipsilateral renal vein.

The study done in the University of Witwatersand, Johannesburg and University of Zimbabwe, Harare on the testicular arteries and veins in 150 cadavers showed variation frequently present in testicular vein, common on the left side (21.3%). In 18.8% these variations were bilateral, and most of the variations were either completely or partially duplicated. Only 1.8% of the variation in the form right testicular vein draining in the right renal vein (unilateral). 4.7% of the cases had variation associated with the origin. Das and Vasudeva (2005) studied drainage pattern of the testicular and renal vein in the 42 cadavers and they found that only one among that had the variation in the form of right testicular vein draining in the right renal vein. This form approx. 2.4%. Asala et al (2001) found 2 cases with this type of variation out of 150 cases (1.3%). According to Bergman et al Zumstein found right spermatic vein opened into the right renal vein in 4 cases out of 220. Some other variations of testicular vein are also described by different authors, like double spermatic veins instead of single testicular vein, spermatic or testicular vein draining into the subcostal veins, etc. These are also found to be veryrare kind of variation. This is the first time we have seen this type of variation.

To conclude, this type of variation may not be significant clinically, as this was not seen interfering in the normal life of the affected person. Nor any mark was seen on the cadaver showing that person underwent any surgery and he had a normal life. But knowledge of this type of variation become important for the surgeons, in case the patient has to undergo for surgery of the kidneys, suprarenal glands or for any other organ in the region, hence it needs to be investigated, keeping in the mind this type of variation to avoid any accident at time of surgery.

RECOMMENDED READING

1. Asala S, Chaudhary SC, Masumbuko-Kahamba Normally, Bidmos M. *Ann Anat.* 2001, Nov. 183 (6). Pages 545 - 9.
2. Bergman RA, Afifi AK, Miyauchi RM. *Anatomy Atlases - A digital Library of Antomy Information (www. Anatomy).* 26/06/07.
3. Biswas S, Chattopadhyay JC, Panicker H, Amblagan J, Ghosh, SK. *Variations In Renal and Testicular veins - A Case Report. J. Anat. Soc. India.* 2006, Dec. 55 (2), 69-71.
4. Das S, Vasudevan N. *Study of Anomalous Drainage Pattern of Right Testicular Vein. Nepal Med. Col Journal.* 2005. 7 (1): 21-2.
5. Williams et al: *Gray's Anatomy. Ed 38th (1995).* Churchill Livingstone, Pages 324 - 326.

Correspondence: Prof. Virender Kumar Nim, Department of Anatomy, Pondicherry institute of medical Sciences, Kalapet 605014, Pondichary, India Mobile: 9345454844 e-mail: yknim@rediffmail.com