

## Case Report

# ACCESSORY LEFT TESTICULAR VEIN: A RARE VARIATION

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## ABSTRACT

I am reporting a case of a male cadaver, of 40 years of age. In our routine dissection in our University laboratory at Hubert Kairuki Memorial University for the first year medical students, we observed an accessory left testicular vein draining into the left renal vein. Anatomic variations of the testicular vein are frequent, especially concerning the number of left side testicular veins and the angle of termination of these veins. Normally the left testicular vein ascends almost vertically terminating in the left renal vein in a right angle, and this has been suggested to result in a higher tendency for the left testicle to develop varicocele. This is due to the fact that gravity working on the column of blood in the left testicular vein that connects to the renal vein at a right angle. During pre-operative planning of varicocele, the surgeons should not overlook the possibility of an abnormal drainage site or an accessory collateral drainage as it is in this case, because such a misdiagnosis may result in an increase of varicocele recurrence rate.

**KEY WORDS:** Left accessory testicular vein, drainage site, and varicocele.

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## INTRODUCTION

The testicular vein carries deoxygenated blood from its corresponding testis. The right testicular vein generally joins the inferior vena cava; the left testicular vein, unlike the right one, joins the left renal vein instead of the inferior vena cava.

The testicular veins as it is widely known display a great variability as regards to their number, course and sites of termination [1]. Normally the veins emerge from the back of the testis, and receive tributaries from the epididymis; they unite and form a convoluted plexus, called the pampiniform plexus, which constitutes the greater mass of the spermatic cord; the vessels composing this plexus, are very

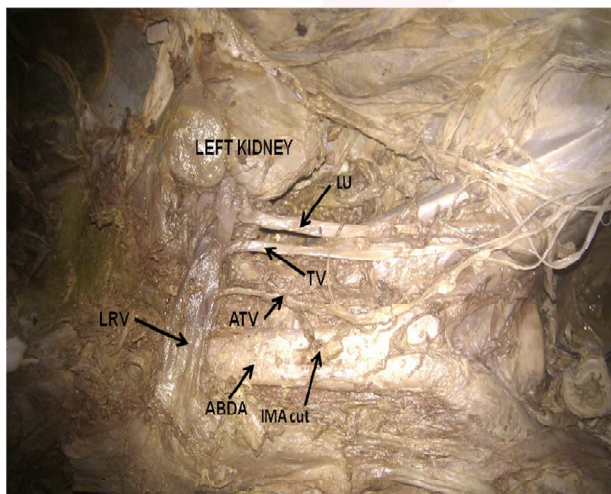
numerous, and ascend along the cord, in front of the ductus deferens. Below the superficial inguinal ring, they unite to form three or four veins, which pass along the inguinal canal, and, entering the abdomen through the deep inguinal ring, coalesce to form two veins, which ascend on the Psoas major, behind the peritoneum, lying one on either side of the internal spermatic artery. These unite to form a single vein, which opens, on the right side, into the inferior vena cava (at an acute angle), on the left side into the left renal vein (at a right angle). The spermatic veins are provided with valves. The left spermatic vein passes behind the iliac colon and is thus exposed to pressure from the contents of that part of the bowel [2]. The pathological dilated pampiniform plexus veins known

as varicocele could be attributed to testicular veins variants. Varicocele appearing in approximately 15% of male population constitutes a specific pathological condition that could lead under certain circumstances to testis atrophy and reduce of fertility [3].

## CASE REPORT

During our routine dissection for the first year medical undergraduates at our University, in the Department of Anatomy we came across an unusual unilateral accessory left testicular vein in a male cadaver aged 40 years. We observed, two left testicular veins draining the left testis, ascending almost vertically and terminating separately into the left renal vein in a right angle (Fig. 1).

**Fig. 1:** A photograph from a male cadaver showing the **IMA cut**: Inferior Mesenteric Artery cut; **LRV**: Left Renal Vein; **TV**: Testicular Vein; **ATV**: Accessory Testicular Vein; **LU**: Left Ureter; **ABDA**: Abdominal Artery.



## DISCUSSION

Anatomic variations of the testicular vein are frequent, especially concerning the number of left side testicular veins and the angle of termination of these veins [4]. In the study by Favorito L A revealed various number of testicular vein, one left testicular vein reported to have occurred in 82% of the cases, two veins in 15%, three veins in 2% and four veins in 1% of the cases [5]. These variations can be explained by the persistence of primary venous systems that during the embryological period originate the inferior vena cava [6]. The embryo's vein system develops out of a very irregular network of capillaries, from which finally individual ones

transform themselves definitively into veins while others disappear again. The result of this is that the venous system is not very uniform, and in the adult far more variants of venous outflows than on the arterial side exist. It has been documented that bilateral supracardinal veins and the subcardinal sinus symmetrically develop during early embryogenesis. However, persistence and regression of the right and left supracardinal veins, respectively, results in drainage of the left gonadal vein into the ipsilateral renal vein. A double inferior vena cava commonly originates from a failure of disappearance of the left supracardinal vein. The subcardinal sinus persists as the left renal vein. The anterior segment of the left subcardinal vein disappears, but its posterior segment forms the left gonadal vein. Although there have been a considerable number of case reports on double inferior vena cava, little attention has been paid to the anatomy of the left gonadal vein in such cases. The left gonadal vein develops between the 5th and the 7th weeks after conception, being derived from the distal or post-renal portion of the sub-cardinal vein [7, 8].

Knowledge of the many anomalies that can potentially occur in the abdominal region is necessary in interpretation of images of this anatomical area. Additionally, knowledge of these variations is important surgically; for example, anomalous veins that ought to be ligated during surgery for varicocele go unnoticed and result in recurrence of the varicocele.

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**Conflicts of Interests: None**

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