



Abnormal course of left ovarian artery

Published online June 27th, 2008 © <http://www.ijav.org>

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Received June 8th, 2008; accepted June 25th, 2008

ABSTRACT

Knowledge of variations of blood vessels in and around the renal hilar region is of utmost importance during operative, diagnostic and endovascular procedures in the abdomen. This report describes the variations found in the course of the left ovarian artery. The variation was found during routine dissection in an approximately 60 years old cadaver. The left ovarian artery took its origin from the abdominal aorta at the level of renal artery, passed upwards between the left renal artery and the renal vein and passed down after hooking around the left renal vein. The knowledge of variations of renal and gonadal vessels is important for surgeons doing kidney transplants and for the radiologists doing radiological procedures. © *IJAV*. 2008; 1: 4–5.

Key words [ovarian artery] [left renal vein] [gonadal artery] [variations]

Introduction

The ovarian arteries are paired lateral branches of abdominal aorta. However, they may also arise from the renal arteries. The left ovarian artery passes downward and laterally very close to the posterior abdominal wall. It crosses the left psoas major muscle and the genitofemoral nerve. At the brim of the pelvis, it crosses the external iliac vessels and enters the suspensory ligament of ovary. It runs medially below the uterine tube and reaches the ovary through the mesovarium. In the broad ligament, it sends a branch that anastomoses with the uterine artery. The left ovarian vein usually runs upwards and medially and terminates in the left renal vein. Usually it lies lateral to the ovarian artery throughout its course. A sound knowledge of the variations in the course of the renal and gonadal vessels is important for urologists, radiologists and surgeons in general. The objective of the case report is to bring awareness to clinicians about the variations in the course of the left ovarian artery. This report may also be useful to clinicians performing invasive techniques and vascular surgeries.

Case Report

During regular dissections for the first year medical students, we observed the variation in the course and relations of the left ovarian artery in a female adult cadaver aged 60 years approximately. The ovarian artery of the left side took its origin from the abdominal aorta at the level of the renal artery. It coursed upwards and to the left between the left renal artery and left renal vein till it

reached the upper border of the left renal vein. At this point, the ovarian artery turned downwards and laterally in front of the left renal vein and coursed downwards very close to the medial border of the left kidney (Figure 1). Throughout its abdominal course, it was situated lateral to the left ovarian vein. The ovarian vein terminated normally into the left renal vein. The pelvic course and distribution of these vessels were normal.

Discussion

Gonadal artery variations are well known. In a study conducted by Cicekcibasi et al., gonadal arteries showed variations in 8.8% of cases [1]. The frequency of variation was more in males and it was more common on right side. Ovarian arteries may originate from aorta above the level of renal artery or they may take their origin from the renal or accessory renal arteries. They may also give branches to diaphragm and suprarenal glands [2]. Singh et al., have reported bilateral origin of the ovarian arteries from the accessory renal arteries [3]. There are reports on variations in the origin and course of the testicular arteries. Ranade et al., have observed a variation in the course of the left testicular artery somewhat similar to the course of ovarian artery that we are reporting here [4]. Acar et al., also have reported a similar course of left testicular artery [5].

The variation in the course of the gonadal arteries can be explained embryologically. The gonadal arteries are persistent branches of mesonephric arteries that develop cranial and caudal to the renal pedicle. If the caudal

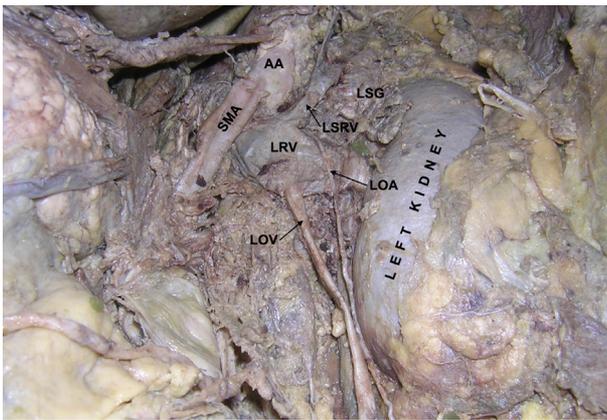


Figure 1. Dissection of the abdomen showing the abnormal course of left ovarian artery. (AA: abdominal aorta, SMA: superior mesenteric artery, LSRV: left suprarenal vein, LSG: left suprarenal gland, LRV: left renal vein, LOA: left ovarian artery, LOV: left ovarian vein)

arteries persist, they produce the type I gonadal arteries. If the cranial arteries persist, they become type II arteries by crossing the renal pedicle with the descent of the gonad. If the kidney ascends much higher, carrying its renal vein to a higher level than the origin of the gonadal artery, the gonadal artery will be forced to follow an arched course around that vein, giving rise to the type III. The fact that the kidney ascends on the left side, generally higher than on the right, gives us the explanation for the higher frequency of the type III on left side [6]. Arched course of the gonadal artery as we have reported here is common in male. There are not many reports on this variation in the female. The arching course of the left ovarian artery might compress the left renal vein. The hypertension in left renal vein can produce hematuria [7] and can cause the dilatation of the left ovarian vein. Since the ovarian artery passes very close to the medial border of the kidney, it might be endangered during kidney transplants or any other surgeries of kidney.

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