RARE ANOMALY OF LEFT RENAL VEIN: REPORTS OF TWO CASES

Sol Renal Venin Nadir Görülen Anomalisi: İki Vakanın Sunumu

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INTRODUCTION

Retroperitoneal vascular structure anomalies are common, with a prevalence of 13% to 30%. Renal vascular anomalies are responsible for most of them (1). Accessory renal artery and renal vein are the most common variation of the renal vascular structure with a prevalence of 15% to 33% in population. Circumaortic left renal vein (CLRV) which surrounds the abdominal aorta is seen rarely, with a prevalence of 2.4% to 8.7%. Retroaortic left renal vein (RLRV), is seen 3% in population (2).

We are reporting a group of renal vascular anomalies, some of which are uncommon.

CASE - I

We described multiple renal vascular anomalies during the surgery of 39 years-old woman with ovarian tumor in January 2014. After the frozen section revealed a tumor at least borderline ovarian tumor, pelvic and paraaortic lymph node dissection was performed. Renal vascular anomalies were recognized during the dissection of retroperitoneum. The findings were; 1. Circumaortic left renal vein, formed by two branches of renal left vein, a retroaortic and a preaortic and draining into the inferior vena cava (IVC). 2. Precaval left renal artery, originating from abdominal aorta and overpassing the inferior vena cava. 3. Double left and right renal arteries, originating from abdominal aorta (Figure 1).

The multilocular solid-cystic pelvic mass, originating from the left ovary and filling the whole abdomen was 6300g in weight. The final pathological finding was mixed (endometrioid type grade I with musinous differentiation) adenocancer of the ovary. All removed 40 retroperitoneal lymph nodes, 21 of which were dissected from paraaortic region, were pathologically free of these. There was no vascular injury associated between these renal vascular anomalies.
CASE - II

During the surgery of a 43-year-old woman with ovarian cancer, we described renal vein anomalies in January 2014. After the frozen section revealed couldn’t be differentiated between borderline ovarian tumor and invasive ovarian carcinoma, staging surgery was performed. During pelvic and paraaortic lymph node dissection, a retroaortic left renal vein joining the IVC below the right renal artery and double right renal veins draining into IVC, were recognized (Figure 2).

The final pathology was mixed (serous and endometrioid type) adenocancer. All removed 73 retroperitoneal lymph nodes, 27 of which were dissected from paraaortic region, were pathologically free of these. There was no vascular injury during the surgery, associated with these vascular abnormalities.

DISCUSSION

Anomalies of major retroperitoneal structure are frequently asymptomatic and they were reported with a prevalence of 2.4% to 30%. The abnormal vascular structure is important because during the surgery they can be injured. To define the vascular anomalies is important in aorta-iliac surgery, renal transplantation surgery, staging surgery in gynecologic oncology (3). During the 7th to 8th week of embryonic development, the subcardinal veins develop and the anastomosis between the subcardinal veins forms the left renal vein. Unusual persistence or regression of the anastomosis at this level results in the formation of left renal vein anatomical variations, such as CLRV and RLRV. CLRV is classified into 3 morphological types (4). In type I morphology, one left renal vein splits into two branches, a preaortic and a retroaortic, draining into the IVC. In type II, one preaortic and the other retroaortic two separate left renal veins; drain into the IVC. In type III, either there are anastomosis between the preaortic and retroaortic vein that may be multiple or not, or there may be multiple preaortic or retroaortic renal veins without anastomosis. The case I presented here was a Type I CLRV. Left renal vein anomalies were classified into four types according to their appearance (5). Type I is left renal vein joining the IVC in the orthotropic position. Type II RLRV joining the IVC at level L4-L5. Type III is circumaortic or collar left renal vein. Type IV joining the left common iliac vein. The case II presented here was a Type I RLRV. Multiple renal vessels are a part of these vascular anomalies. These anomalies are due to various developmental positions of kidneys.
and are seen more frequently in the kidneys not rotated normally. Multiple renal vessels are usually asymptomatic. A special risk associated with multiple renal vessels is the ligation of accessory renal arteries because these are end arteries and ligation of these arteries may cause partial ischemia, renal function loss and renal hypertension.

It was stated that, in patients with a CLRV the risk of venous injury is higher in those with IVC anomaly because the large anterior component of the CLRV can mislead the surgeon into thinking that the left renal vein is normal and there is no retroaortic component (6). Benedetti-Panici et al. reported 7.1% of vascular complications during retroperitoneal lymphadenectomy in 42 patients with vascular anomalies (1). In our earlier study by presented by Kose et al. reported the rate of injury of anomalous vessels was 10.3% in the patients with vascular anomalies (7). All of the vascular complications were repaired primarily. None of the patients required a second laparotomy because of hemoperitoneum. In our cases there was no vascular injury associated with these renal vascular anomalies. It is important for surgeons to remember that any patient scheduled for a surgery may have a vascular anomaly. To prevent complications during retroperitoneal lymphadenectomy, vascular anatomy must be visualized individually.

REFERENCES