



Solitary precaval right renal artery and bilateral double ureter in a patient with high-grade serous ovarian cancer

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Presentation

A 76-year old patient underwent primary cytoreductive surgery (CRS) for high-grade serous International Federation of Gynecology and Obstetrics (FIGO) stage IIIC ovarian cancer. Preoperative imaging by computed tomography described the presence of a solitary right renal artery (RRA), bilateral double ureter and pleviectasis of the right kidney. The CRS resulted in a complete tumor resection and included: infragastric omentectomy, radical hysterectomy, bilateral salpingo-oophorectomy, partial peritonectomy (pelvis, upper abdomen and left diaphragmatic region), para-aortic lymphadenectomy for bulky lymph nodes (up to 4 cm in diameter), right hemicolectomy, anterior resection of the rectosigmoid, cholecystectomy, splenectomy and full-thickness resection of the right diaphragm. Preparation of the abdominal aorta up until the origination of the left renal vein showed a solitary precaval RRA and a bilateral double ureter (Fig. 1). The patient recovered well after the procedure.

Discussion

The RRA passes usually behind its accompanying vein and the inferior vena cava [1]. However, there a large number of anatomical variants of the renal artery (RA), with an additional RA being the most common one [1]. A precaval RRA has a reported prevalence of up to 5% [2, 3]. The majority of precaval RRA appear to be additional arteries with only 10 published cases of solitary precaval RRA [3]. An association with pelvieactasis as described in our patient has also been reported previously [2]. Additionally, a strong relation between a lower origin of the RRA and a precaval course has been described [4]. A correlation between a double ureter and precaval RRA is linked to an embryologic origin [3, 5]. Complex oncological surgery including multivisceral resections and extended multi-field lymphadenectomy requires in-depth anatomical knowledge, including the presented anatomical varieties of the RRA. As in this case shown, pre-operative imaging should be used in order to identify and/or explicitly mention anatomical variations.

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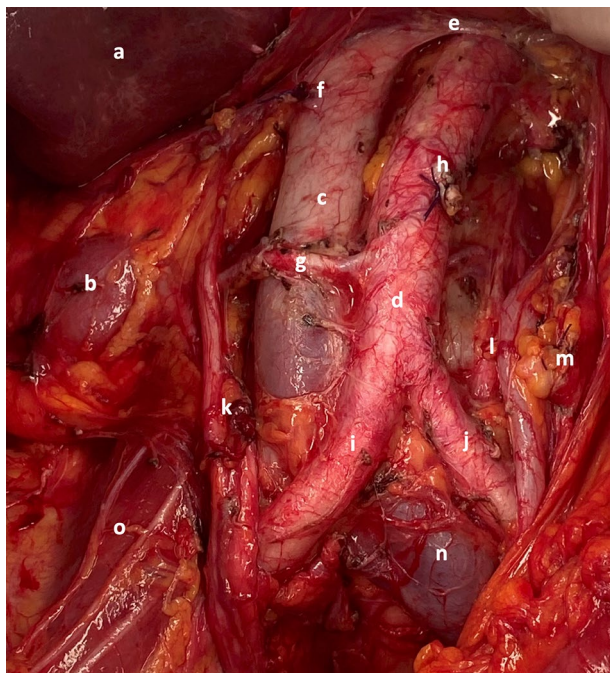


Fig. 1 Solitary precaval right renal artery (RRA) originating from the anterior abdominal aorta (AA) below the inferior mesenteric artery (IMA), which has been dissected in order to achieve complete gross resection (a liver, b right kidney, c inferior vena cava, d abdominal aorta, e left renal vein, f right ovarian vein, g right renal artery, h inferior mesenteric artery, i right common iliac artery, j left common iliac artery, k right double ureter, l left double ureter, m left ovarian vein, n left common iliac vein, o right psoas muscle)

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Declarations

Conflict of interest The authors declare that they have no potential conflict of interest.

Consent to publish The authors affirm that human research participants provided informed consent for publication of the image in Fig. 1.

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