

## Quadruple Right Renal Vein Found During Laparoscopic Nephrectomy

*Emny Rochell Bobadilla Romero\**; *Miriam Artes Artes*; *Víctor García Porcel*; *Pablo Alcón Cerro*; *José David Jiménez Parra*; *Damián García Escudero*

*Hospital General Universitario Reina Sofia, Murcia, Spain.*

**\*Corresponding Author: Romero ERB**

Hospital General Universitario Reina Sofia, Murcia,  
Spain.

Email: e.r.bobadilla@hotmail.com

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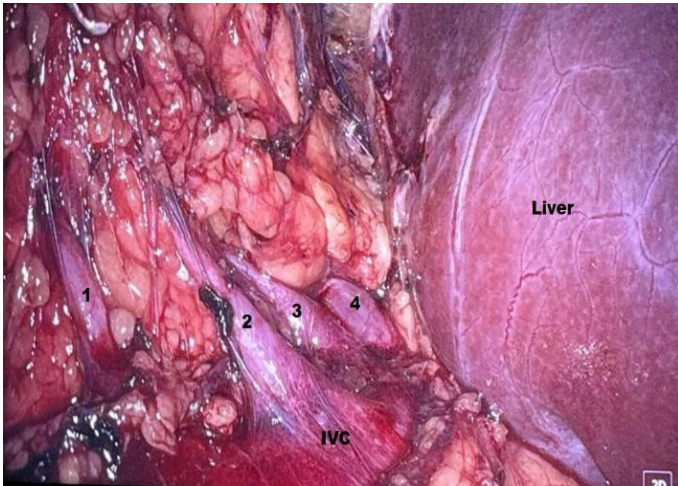
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### Clinical image description

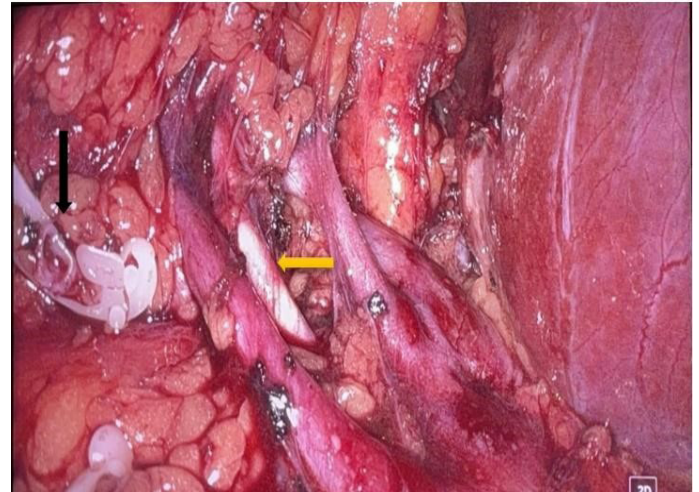
A 42-year-old man with mild to moderate aortic insufficiency was referred to the urology service due to an incidental finding of a right renal mass on aortic angiography during his workup for aortic regurgitation. An abdominal/pelvis Computerized Tomography (CT) was performed, it evidenced a renal mass measuring approximately 4.0 x 2.8 cm located between the middle third and upper third pole of the right kidney.

A laparoscopic right radical nephrectomy was performed and during the course of the procedure while identifying the renal hilum and performing the Kocher maneuver in the midst of exposing the inferior vena cava, four renal veins were found draining directly into the inferior vena cava (Figures 1,2), two renal arteries were also identified. The nephrectomy was successfully completed without complications.

The most frequent anatomical variants of the renal vein are the circumaortic renal vein, retroaortic renal vein and the double renal vein [1]. While a triple renal vein variation is uncommon, a quadruple renal vein is very rare. It is important to recognize anatomical variations of the renal vein at the time of surgery in order to avoid inadvertent injury to these vessels and reduce the morbidity and mortality derived from such complications [2].



**Figure 1:** Four renal veins draining directly into the inferior vena cava (IVC).



**Figure 2:** Renal artery (yellow arrow). Inferior renal vein sectioned (black arrow).