

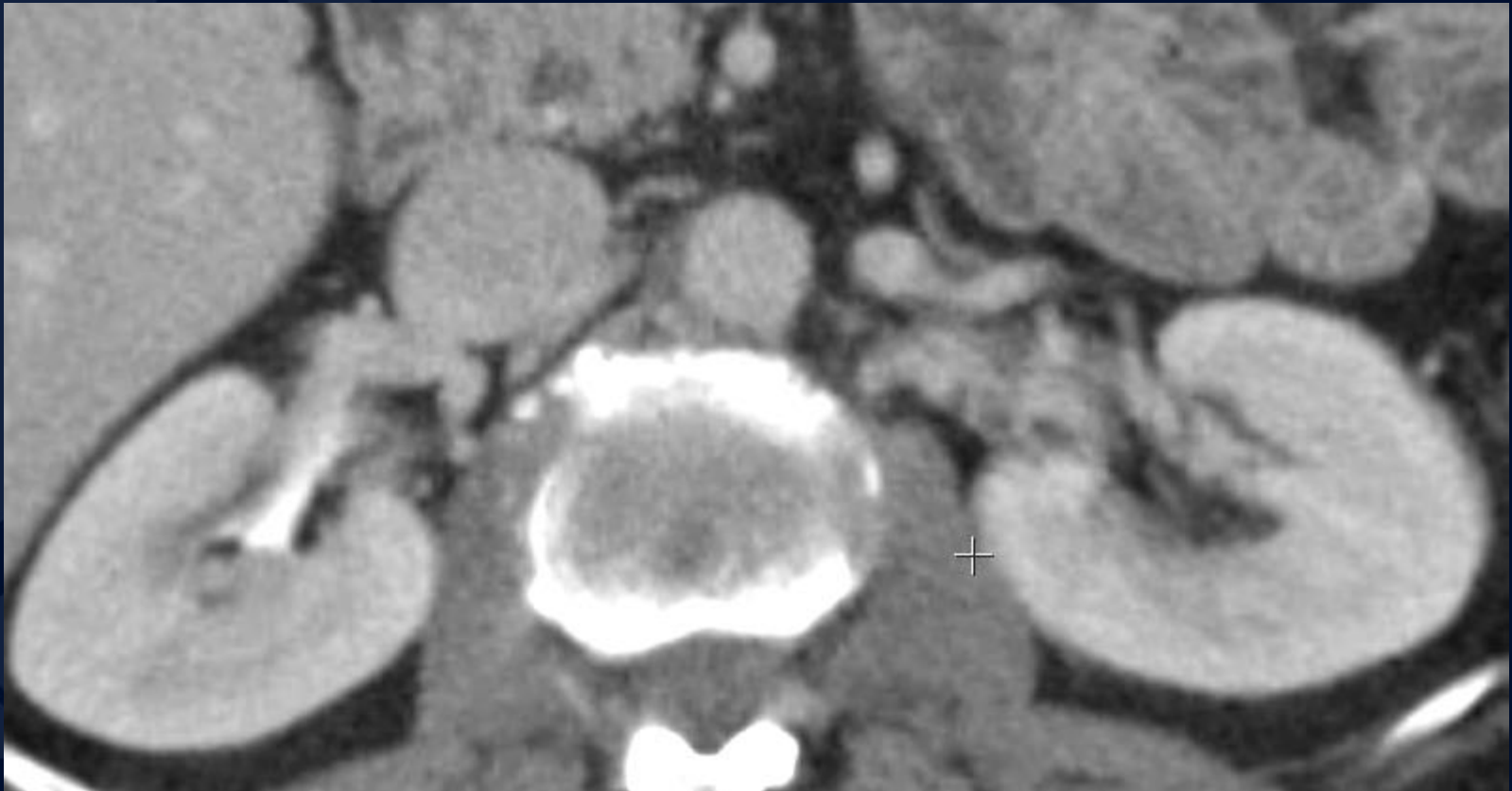
# 63-year-old female presents with gross hematuria.

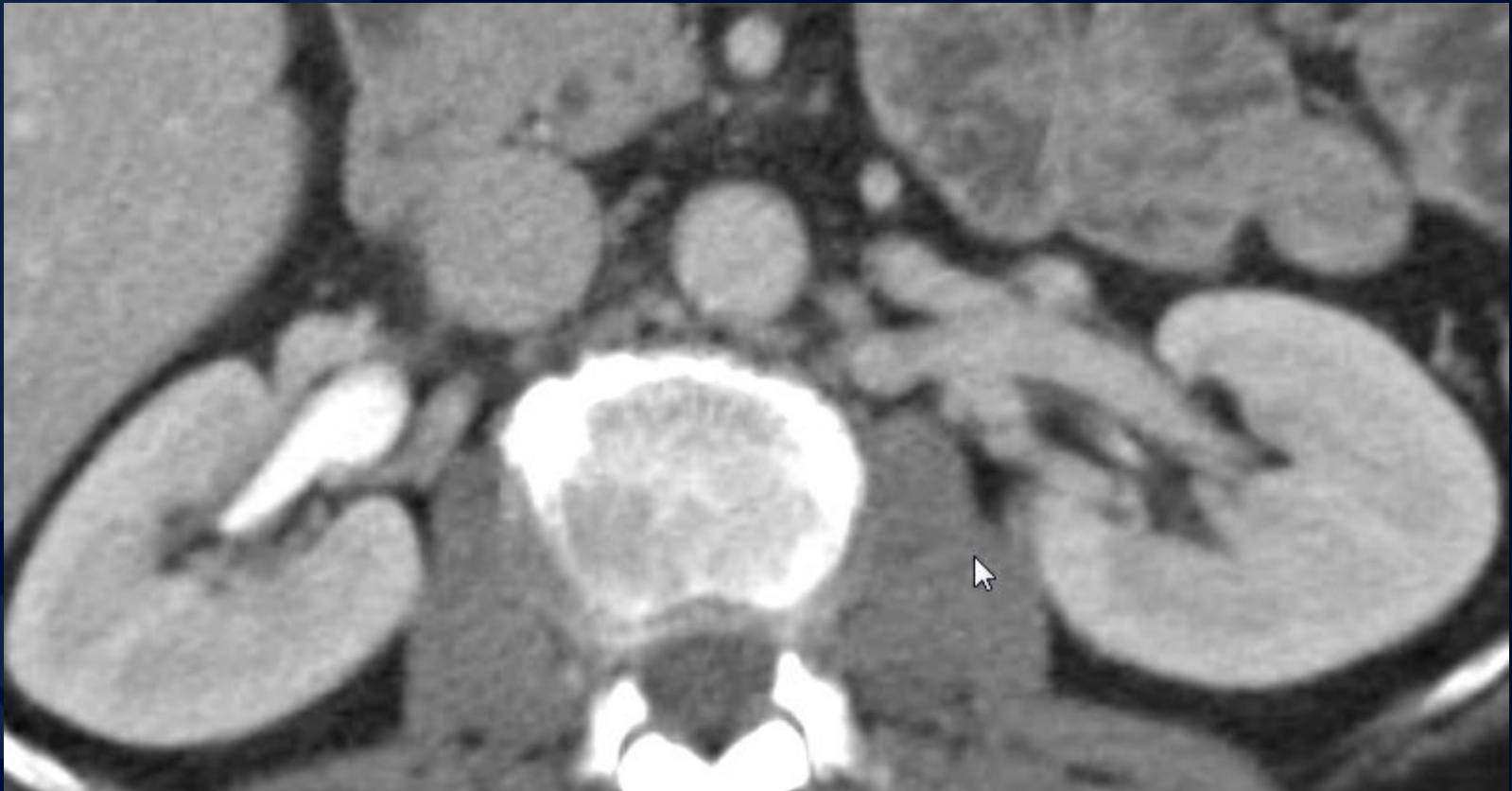
Ryan Joyce, MD  
Charan K Singh, MBBS.













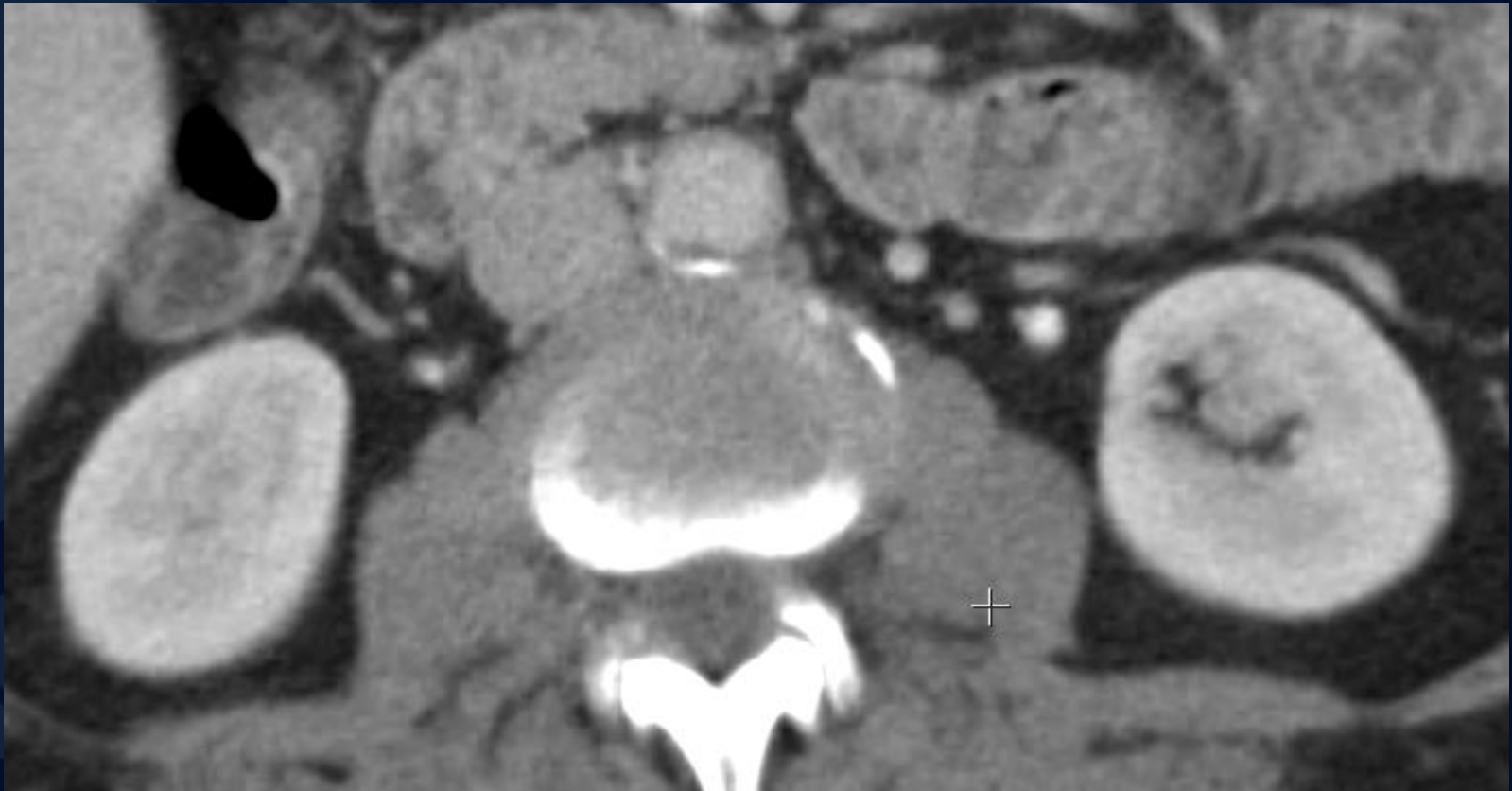












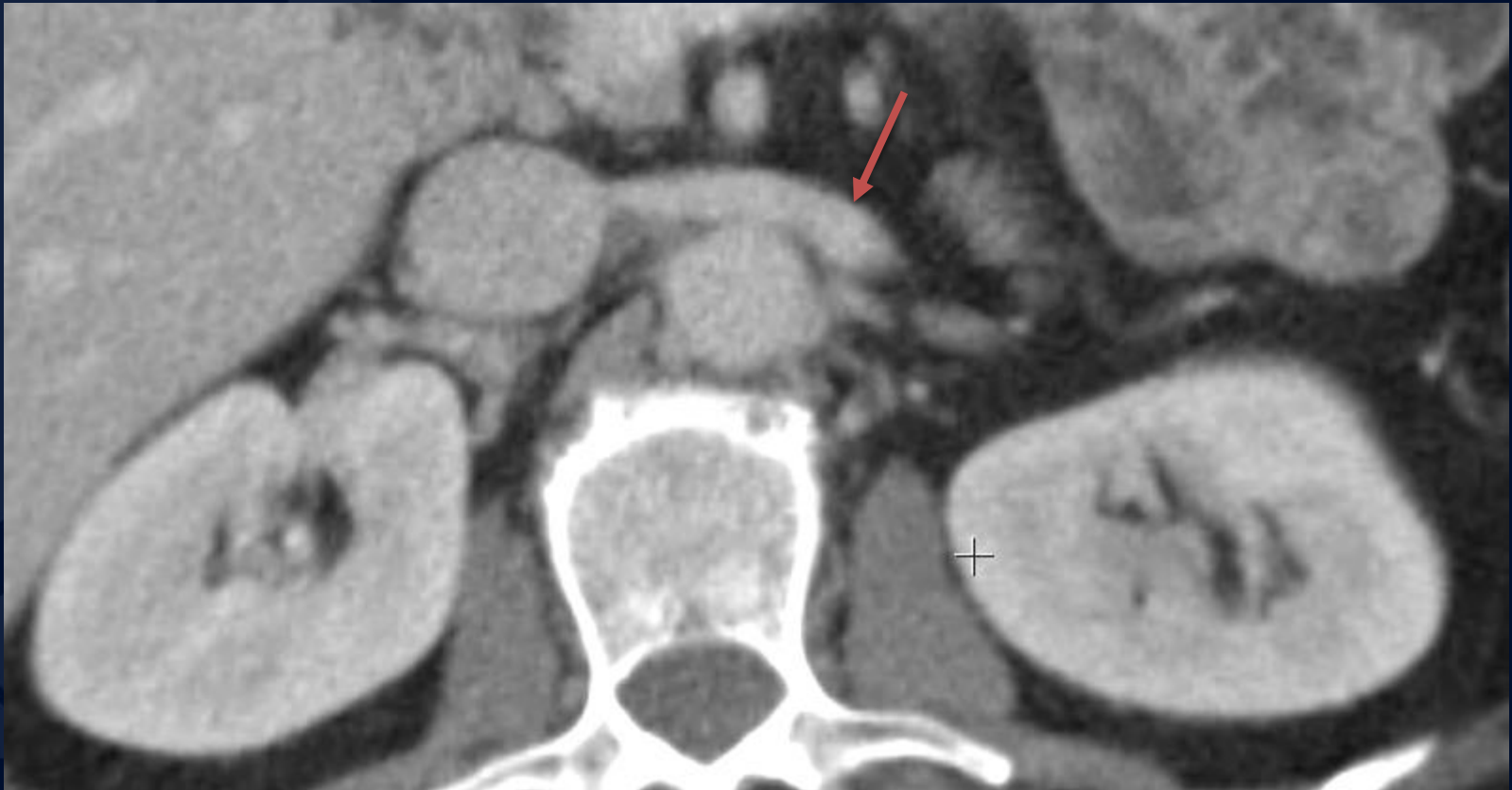
A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. The leaf has a prominent central vein and several smaller veins branching off it. The leaf's edge is serrated.

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# Circumaortic left renal vein



Superior renal vein, crosses anterior to aorta (*red arrows*)



Superior renal vein, crosses anterior to aorta (*red arrows*)





Superior renal vein, crosses anterior to aorta (*red arrows*)



Superior renal vein, crosses anterior to aorta (*red arrows*)



Superior renal vein, crosses anterior to aorta (*red arrows*)  
Inferior renal vein, crosses posterior to aorta (*yellow arrows*)



Superior renal vein, crosses anterior to aorta (*red arrows*)  
Inferior renal vein, crosses posterior to aorta (*yellow arrows*)



Inferior renal vein, crosses posterior to aorta (*yellow arrows*)



Inferior renal vein, crosses posterior to aorta (*yellow arrows*)





Inferior renal vein, crosses posterior to aorta (*yellow arrows*)





IVC (*blue arrow*)

# Circumaortic left renal vein

## Anatomic variant with 2 left renal veins

- Typical orientation of superior left renal vein crossing anterior to aorta and inferior left renal vein crossing posterior to aorta.
  - Superior renal vein typically joined by left adrenal vein.
  - Inferior renal vein typically joined by left gonadal vein.
- Retroaortic vein can be intermittently compressed:
  - Can rarely result in gross hematuria.
  - Also rarely associated with renal vascular hypertension.

# Circumaortic left renal vein

- Incidence estimated 2-9%.
- Represents persistence of the dorsal limb of the embryonic left renal vein and dorsal arch of the renal collar.
- The major clinical significance of this anomaly is preoperative planning prior to nephrectomy, renal vein sampling, and varicocele embolization.

# Circumaortic left renal vein

A careful search for other possible causes of hematuria should be performed before attributing hematuria to a circumaortic left renal vein. In this particular case, there were no urinary tract calculi on either side, no bladder abnormality, and no renal mass to suggest an alternative etiology of hematuria.

# References

1. Malaki M et al: Congenital anomalies of the inferior vena cava. Clin Radiol. 67(2):165-71, 2012
2. Koc Z et al: Venous variants and anomalies on routine abdominal multi-detector row CT. Eur J Radiol. 61(2):267-78, 2007
3. Srivastava A et al: Inferior vena cava in urology: importance of developmental abnormalities in clinical practice. ScientificWorldJournal. 5:558-63, 2005