



8TH - 10TH NOVEMBER, 2024 | GRAND HYATT MUMBAI

Registration number: 240

Title of the presentation :

# ADRENAL VENOUS SAMPLING – A PRACTICAL APPROACH

# Introduction/ Review of Literature:



- Hypertension is considered a leading cause of death and disability.
- Primary aldosteronism (PA) is the most frequent cause of secondary hypertension,
- Primary aldosteronism (PA) -- excessive and aberrant production of aldosterone from the cortex of one or both adrenal glands.
- PA is caused by two main pathologies
  - Bilateral idiopathic adrenal hyperplasia – needs lifelong medical treatment with mineralocorticoid receptor antagonists (MRA)
  - Unilateral aldosterone production needs adrenalectomy.
- The most acceptable technique for lateralization of aldosterone production is adrenal vein sampling (AVS)
- Clinical practice guidelines recommend AVS as the gold standard for PA subtype classification.
- Computed tomography (CT) and AVS have a high rate of discordance in subtyping patients with PA.

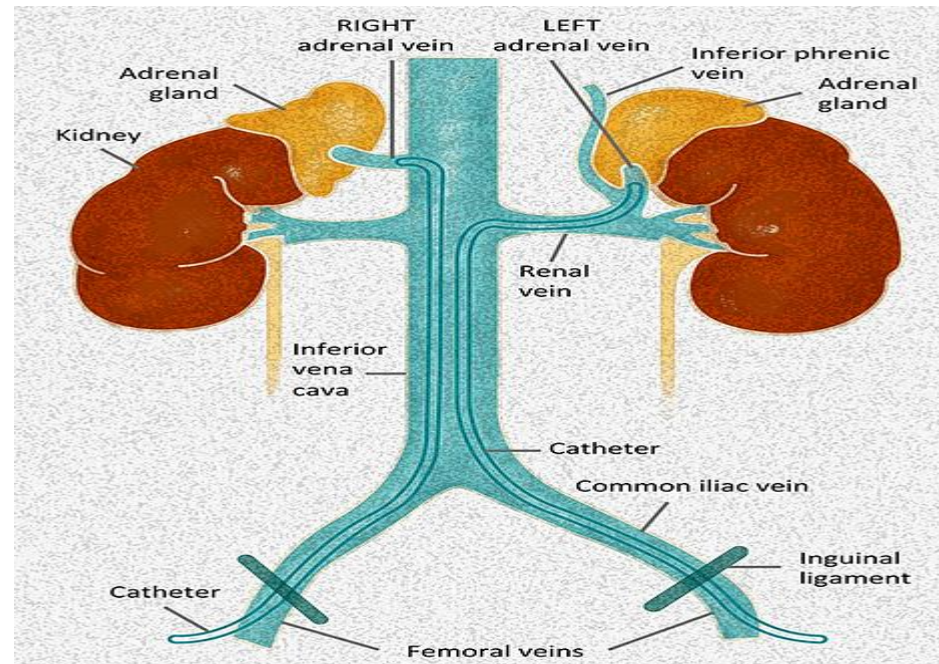
# Aims / Objectives :-

## Aim :-

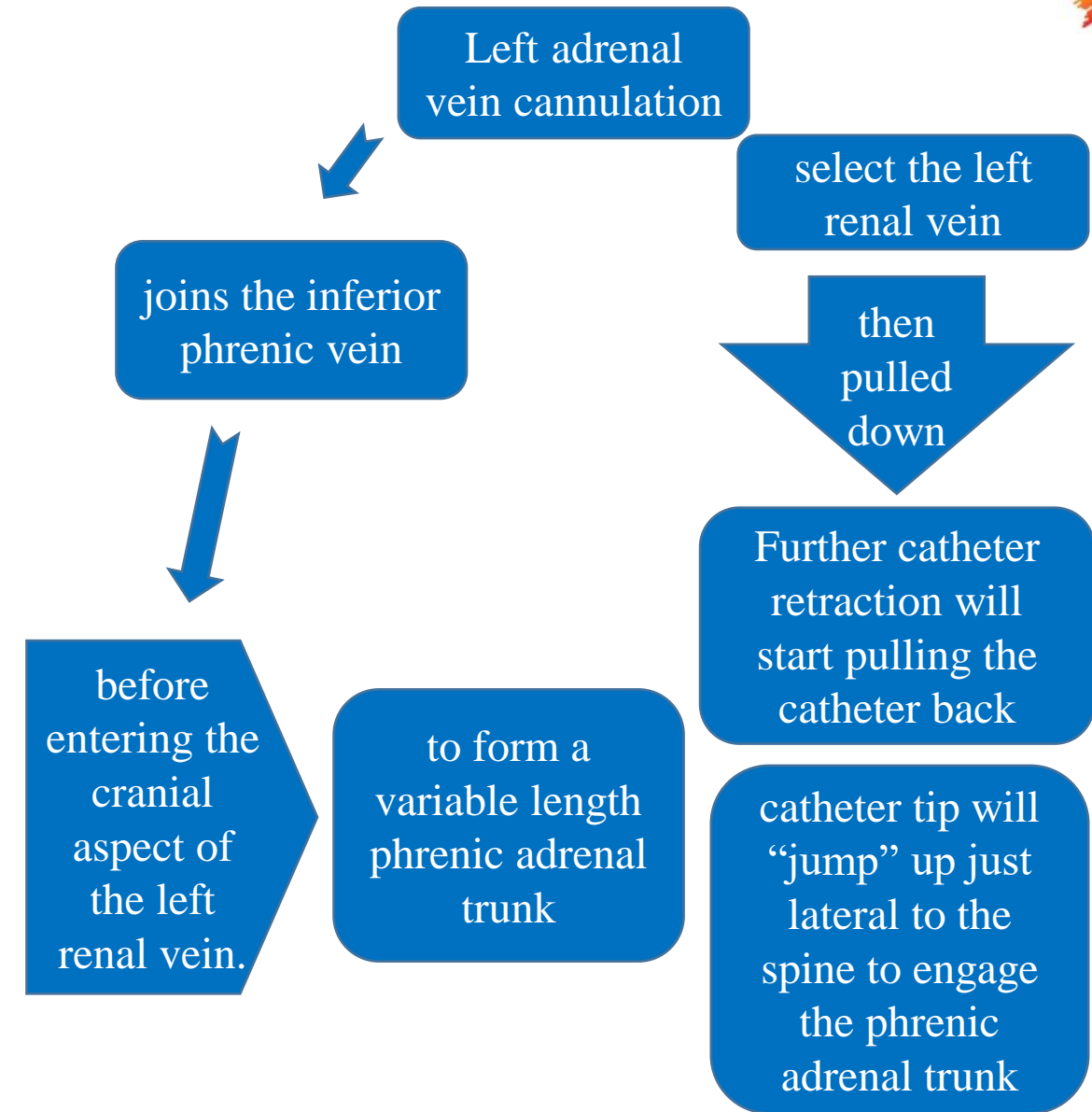
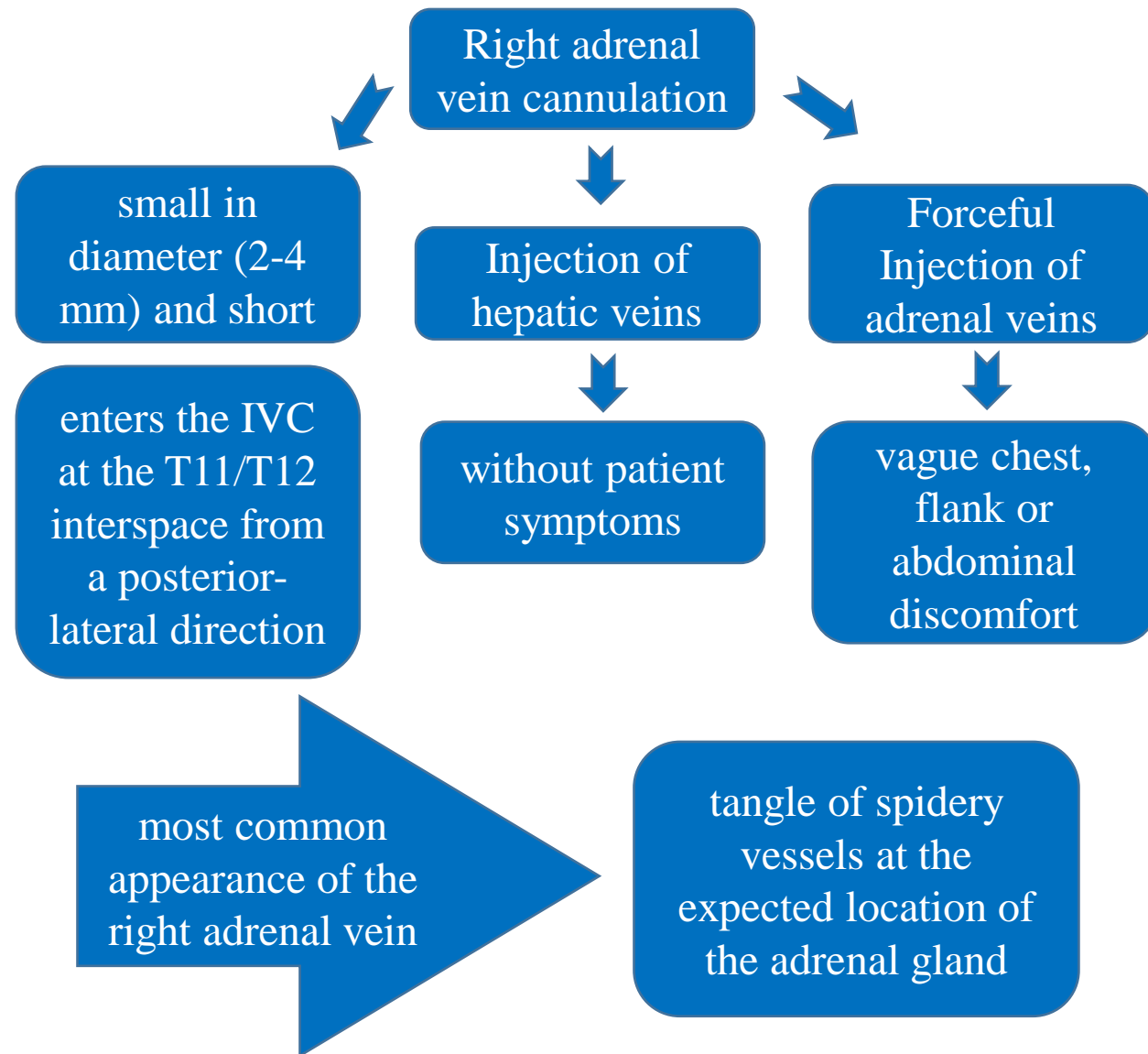
- Approach to primary aldosteronism (PA) secondary to suspicious adrenal adenoma and tips and tricks for adrenal vein sampling (AVS)

## Objectives :-

- To evaluate the procedural approaching steps involved in AVS.
- To determine the optimal approach for AVS in PA by analyzing a case with a suspicious single left adrenal adenoma.



# Methodology :



# Results :-

- A 67-year-old female who was referred to our IR department with a confirmed PA diagnosis and suspicious left adrenal adenoma.
- **CECT Abdomen** --- a normal right adrenal gland and bulky left adrenal gland with suspicious small nodular lesion on left side in medial limb (Abs % washout -79 %, Relative % wash out – 52 %).
- **MRI** --- Bulky left adrenal gland with significant signal drop on chemical shift s/o Adenoma with suspected pheochromocytoma.
- AVS was performed under basal conditions and during continuous cosyntropin infusion (50 µg/h).



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Aldosterone Renin ratio (ARR) – 283 (170/0.6)

PAC – 13.2 ng/dl      PRA - 0.2 ng/ml/hr

Post saline loading suppression Aldosterone – 156 ng/dl

	LAV	RAV	Periphery
Aldosterone (ng/dl)	1280	395	295
Cortisol (mcg/dl)	301	561	38.8
Cortisol Corrected Aldosterone	4.2	0.7	
Selectivity index	7.7	14.4	

	Value	Side
Lateralization index - adrenal	6	Left
C/L Suppression - adrenal	0.09	Right

**Final impression -** AVS is suggestive of autonomous excess aldosterone secretion from left adrenal gland.

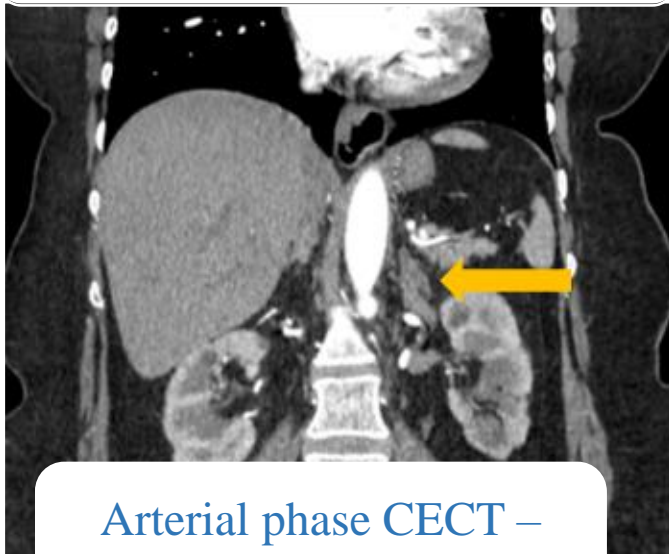
**Advice –** Left lap. Adrenalectomy



Venous phase CECT – axial image

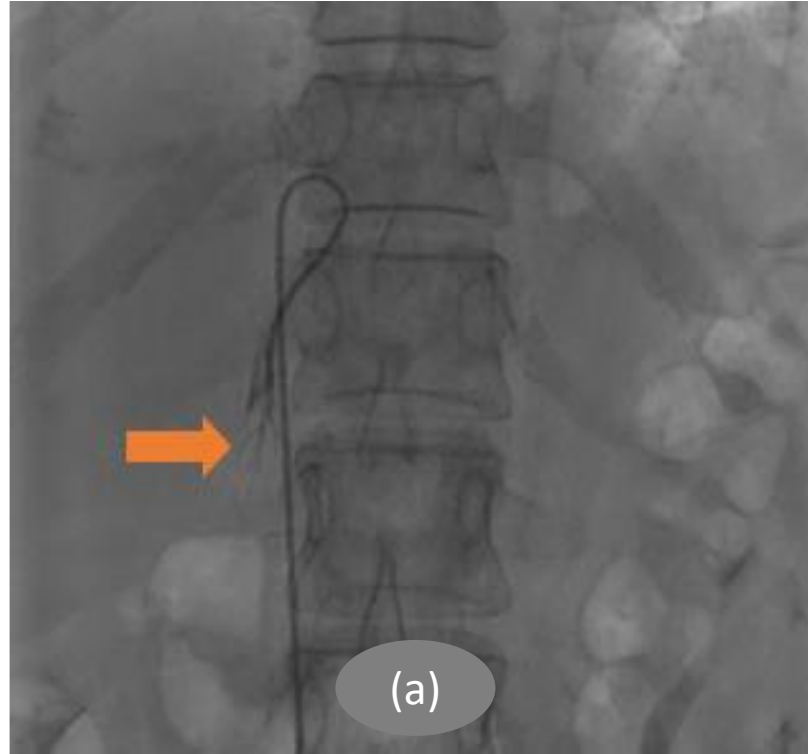


Arrow: Bulky left adrenal gland body



Arterial phase CECT – coronal image

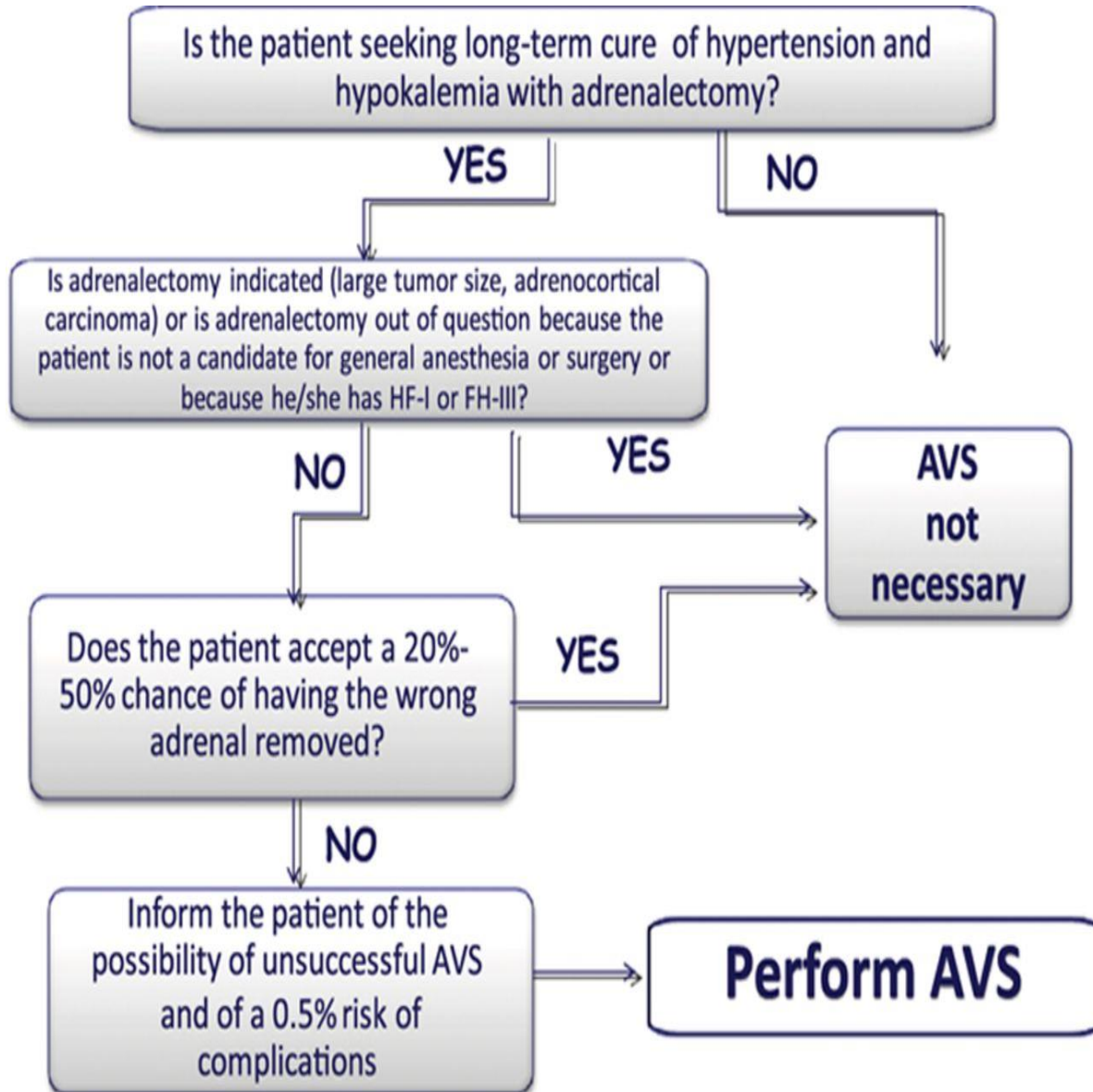
## Representative images :-



### Venography during AVS :---

- (a) Cannulation of the right adrenal vein branch draining the right adrenal gland; arrow indicates adrenal gland venography; a staining of right adrenal vein branches
- (b) Selective cannulation of the left adrenal vein branch, the arrow points to left adrenal vein.

# Conclusion :-



- In conclusion, this case demonstrates insights into the use and interpretation of AVS in the diagnostic PA workup. AVS is a valuable diagnostic tool for primary aldosteronism.
- It can accurately determine the lateralization of aldosterone production, guiding appropriate treatment decisions.
- It demonstrates superior efficacy in lateralizing aldosterone production compared to CT scan.
- Surgical management guided by AVS results can lead to favorable clinical and biochemical outcomes in patients with PA.

# References :-



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