



2025

KARNATAKA RADIOLOGY EDUCATION PROGRAM

CASE PRESENTATION:

Case of bilateral atypical parathyroid adenoma

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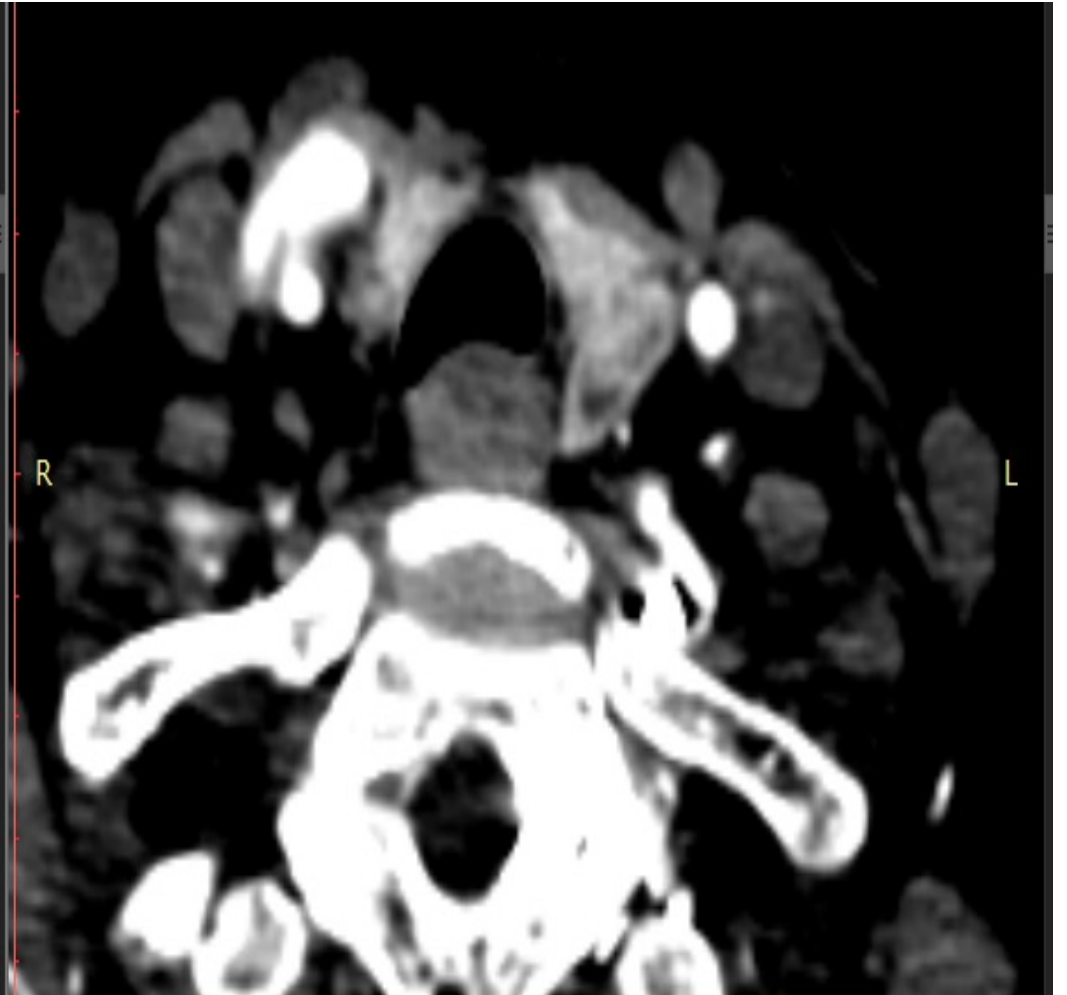
CLINICAL HISTORY:

- AGE: 70 year old female patient
- SYMPTOMS:
 - Chronic fatigue, generalized weakness and depression since 2 years
- PAST HISTORY: Known diabetic and hypertensive. On antidepressants since last 3 months.
- BLOOD INVESTIAGATIONS: Serum PTH and Serum Calcium levels were markedly elevated.
- IMAGING TEST: CT NECK (P+C)

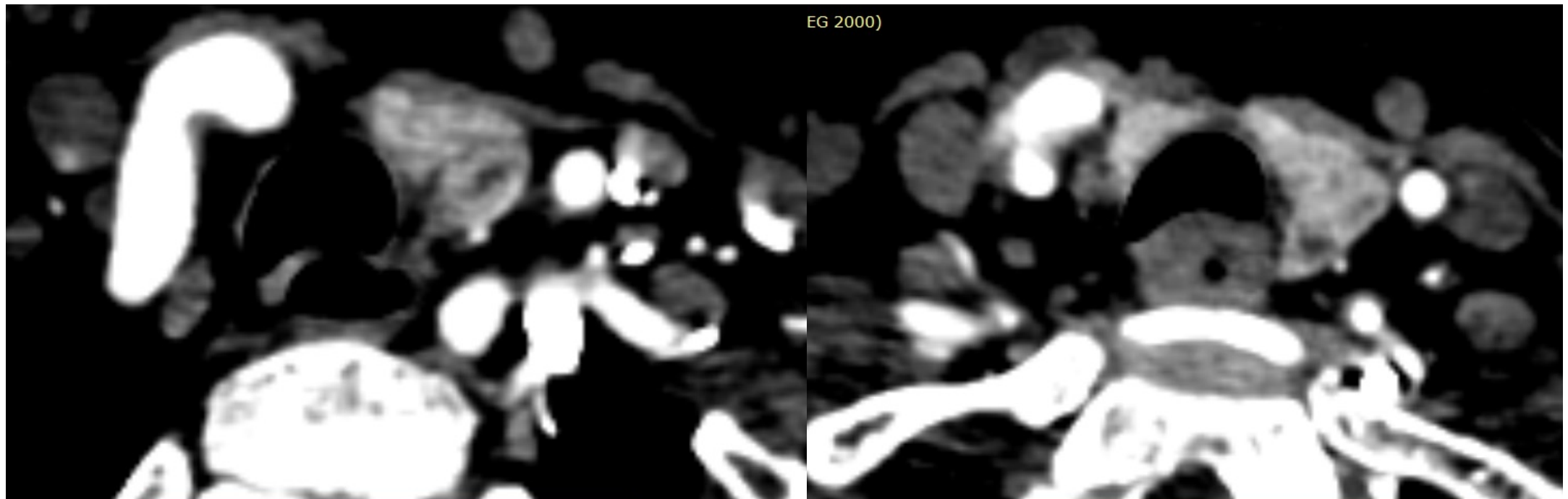
THIN PLAIN



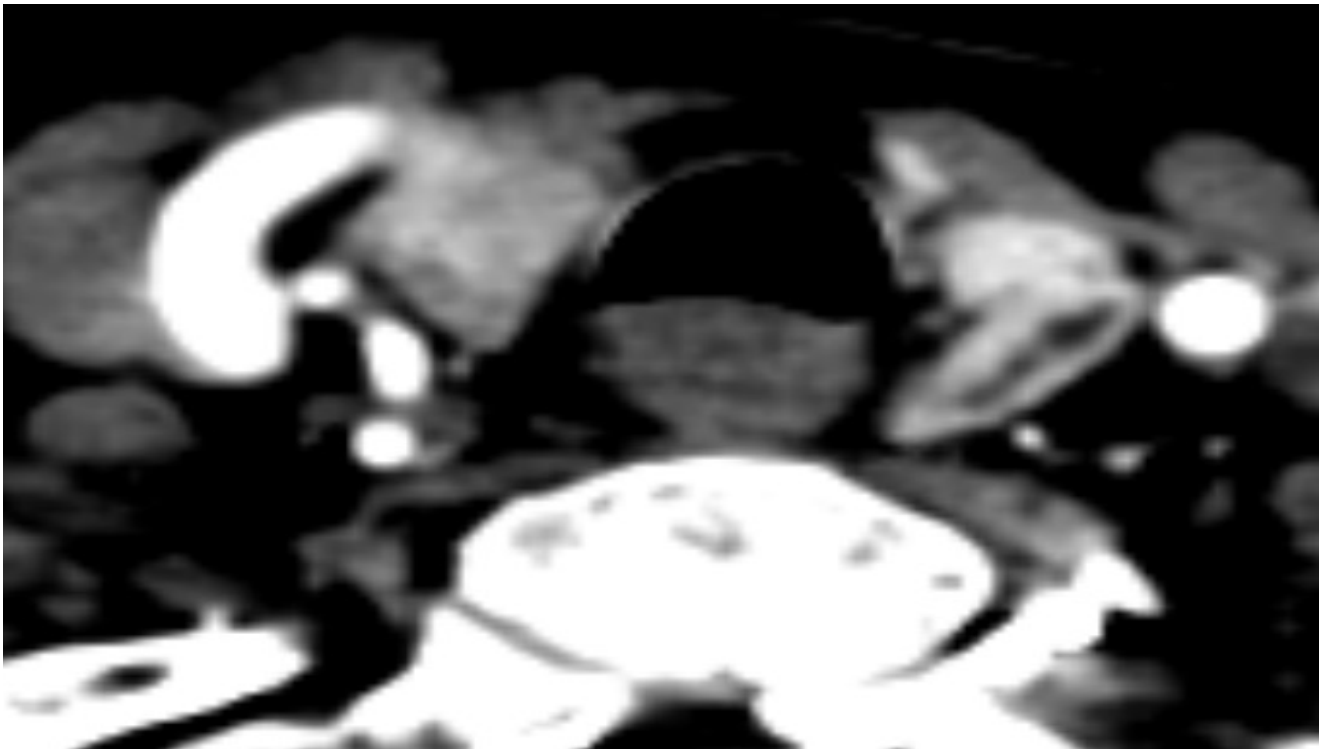
ARTERIAL PHASE



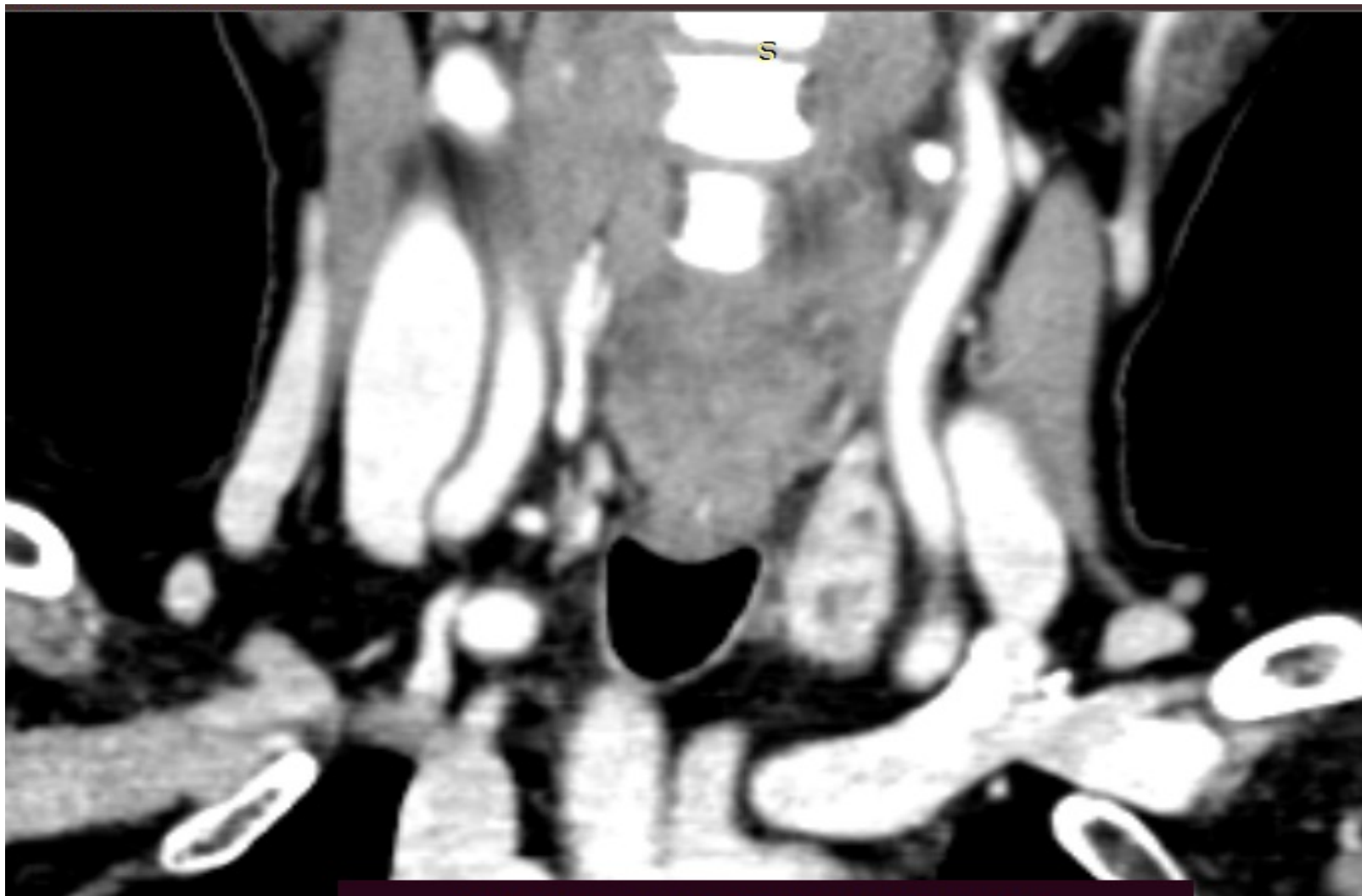
ARTERIAL PHASE



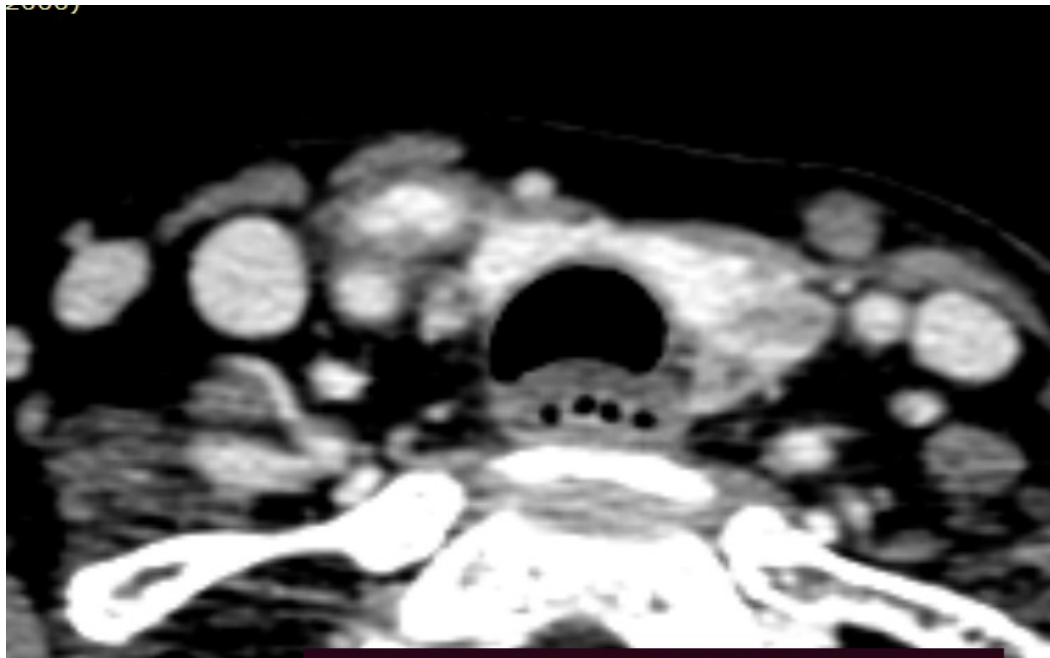
ARTERIAL PHASE



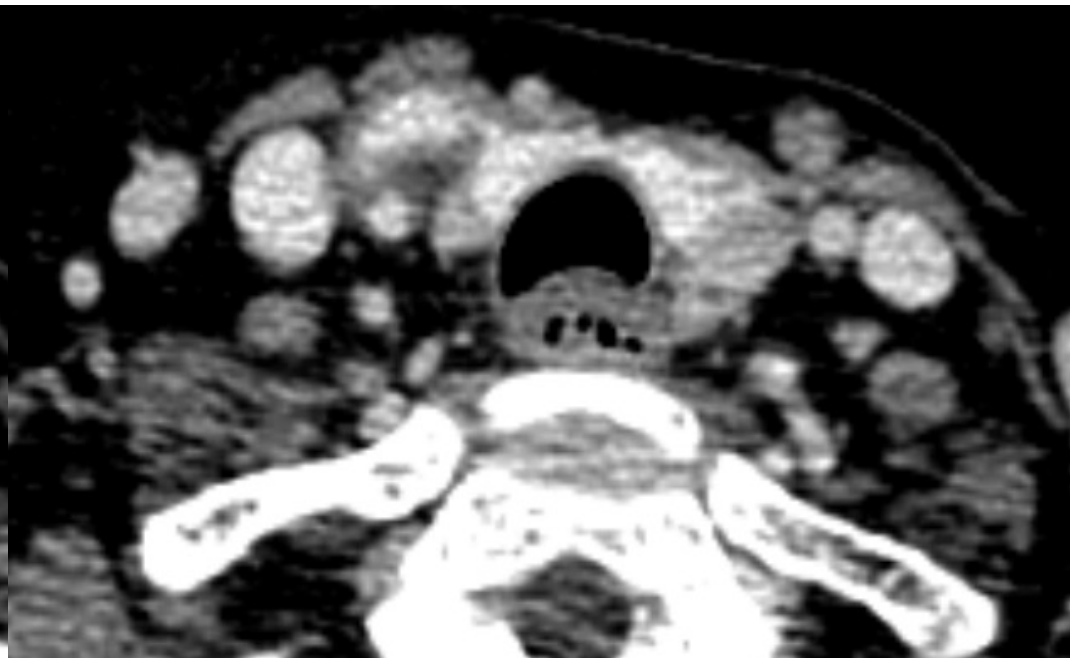
ARTERIAL PHASE



VENOUS PHASE



DELAYED



IMAGINGS FINDINGS:

- Left inferior parathyroid gland appears bulky and shows a heterogenously enhancing (arterial phase) hypodense lesion with cystic changes within it, approximately measuring 0.9 (AP) x 1.5 (ML) x 2.4 (CC) cm, and shows washout on delayed phase. An artery seen to be feeding the above mentioned lesion ... polar vessel sign.
- HU of the lesion is as follows:
 - Thin plain: +40
 - Arterial phase: +126
 - Venous phase: +96
 - Delayed phase: + 90
 - Absolute arterial washout: 34% ; Absolute venous washout: 10.7%
 - Relative arterial washout: 24% ; Relative venous washout: 6.6 %
- Similar small heterogenously enhancing (arterial phase) hypodense lesion is also noted involving the right inferior parathyroid gland, approximately measuring 0.4 (AP) x 0.4 (ML) x 0.5 (CC) cm, and shows washout on delayed phase. An artery is seen to feed the above mentioned lesion... polar vessel sign.
- HU of the lesions is as follows:
 - Thin plain: +25
 - Arterial phase: +198
 - Venous phase: + 134
 - Delayed phase: + 69
 - Absolute arterial washout: 70.5% ; Absolue venous washout: 59.6%
 - Relative arterial washout: 62.1% ; Relative venous washout: 48.5 %

DIFFERENTIAL DIAGNOSIS:

- Atypical parathyroid adenoma
- Parathyroid carcinoma

Atypical parathyroid adenoma:

<u>POINTS IN FAVOUR</u>	<u>POINTS AGAINST</u>
Small size of the lesions, <3 cm	Bilateral involvement
Presence of cystic changes	
Presence of polar vessel sign +	
Heterogenous enhancement	
No signs of invasion / local aggressiveness	

Parathyroid carcinoma:

<u>POINTS IN FAVOUR</u>	<u>POINTS AGAINST</u>
Heterogenous enhancement	Bilateral involvement
Presence of cystic areas within the lesion	Lesion size < 3 cm
	Contrast washout in delayed phase
	Presence of polar vessel sign +

IMPRESSION AND FOLLOW UP:

- Features were likely suggestive bilateral inferior parathyroid adenomas.
- On follow up, patient had an episode of severe hypokalemia resulting in respiratory failure. However the patient was stabilised and has been electively posted for surgery.