

The Suprarenal Gland



Introduction

A significant pair of endocrine glands.

- Situated on the posterior abdominal wall behind the peritoneum, over the upper pole of the kidneys.
- Made up of two parts : a) an outer cortex of mesodermal origin. b) an inner medulla of neural crest origin, which is made up of chromaffin cells.

- - Location : Lie epigastrium, above the kidney, front of diaphragm and opp. the vertebral end of 11th ICS & 12th rib.

- Shape and measurements :

- Right – triangular or pyramidal in shape, resembling to a “top hat”.
- Left - crescentic or semilunar in shape, like a “cocked hat”.

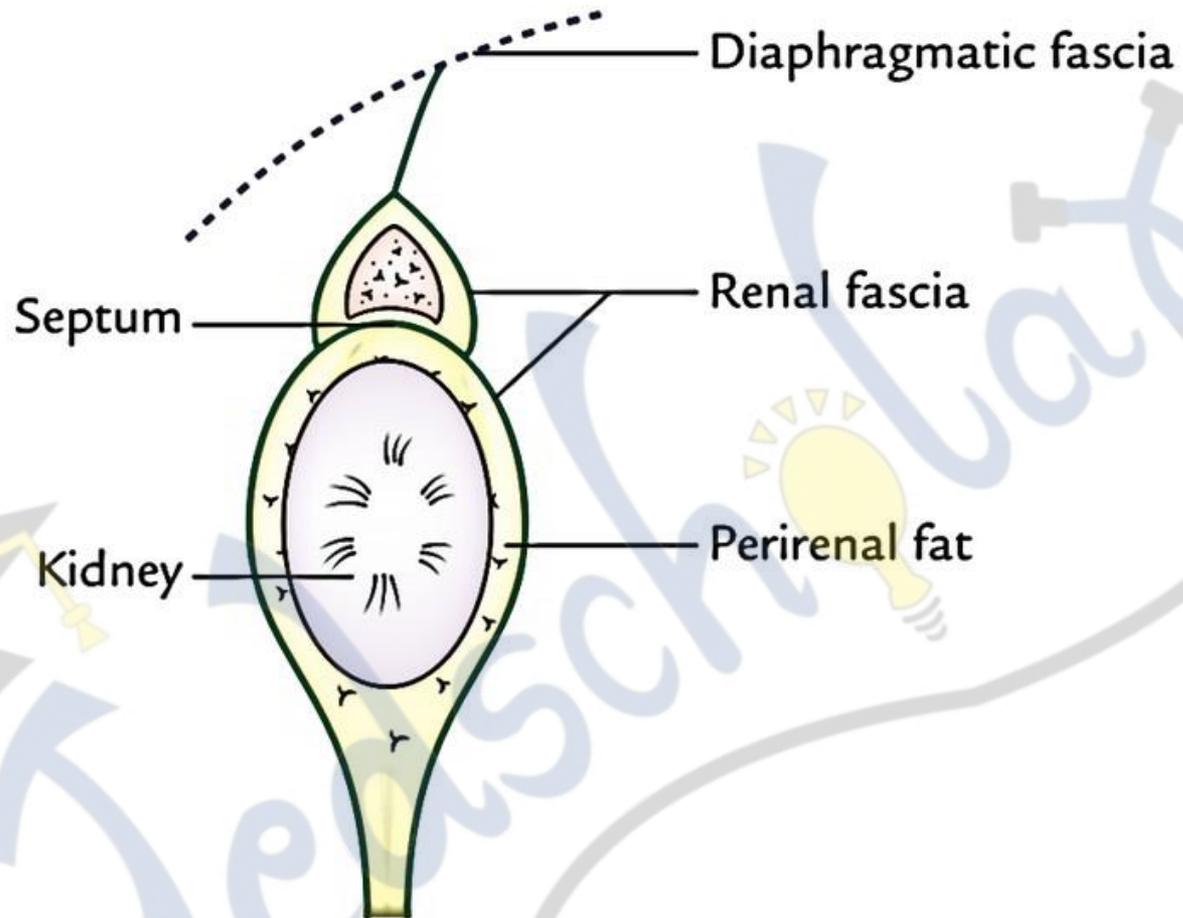
- Measurements - Length : 50 mm
Breadth : 30 mm
Thickness : 10 mm
Weigth : 5 gm

At birth, the gland is about 1/3rd the size of kidney, while in adults it is 1/30th of the size of kidney.

Sheath

Encircled by 2 sheaths :

- Immediate covering of loose areolar tissue .
- Outer to this is renal fascia encloses the suprarenal gland along with the kidney but the gland is divided from the kidney by a septum.



External Features

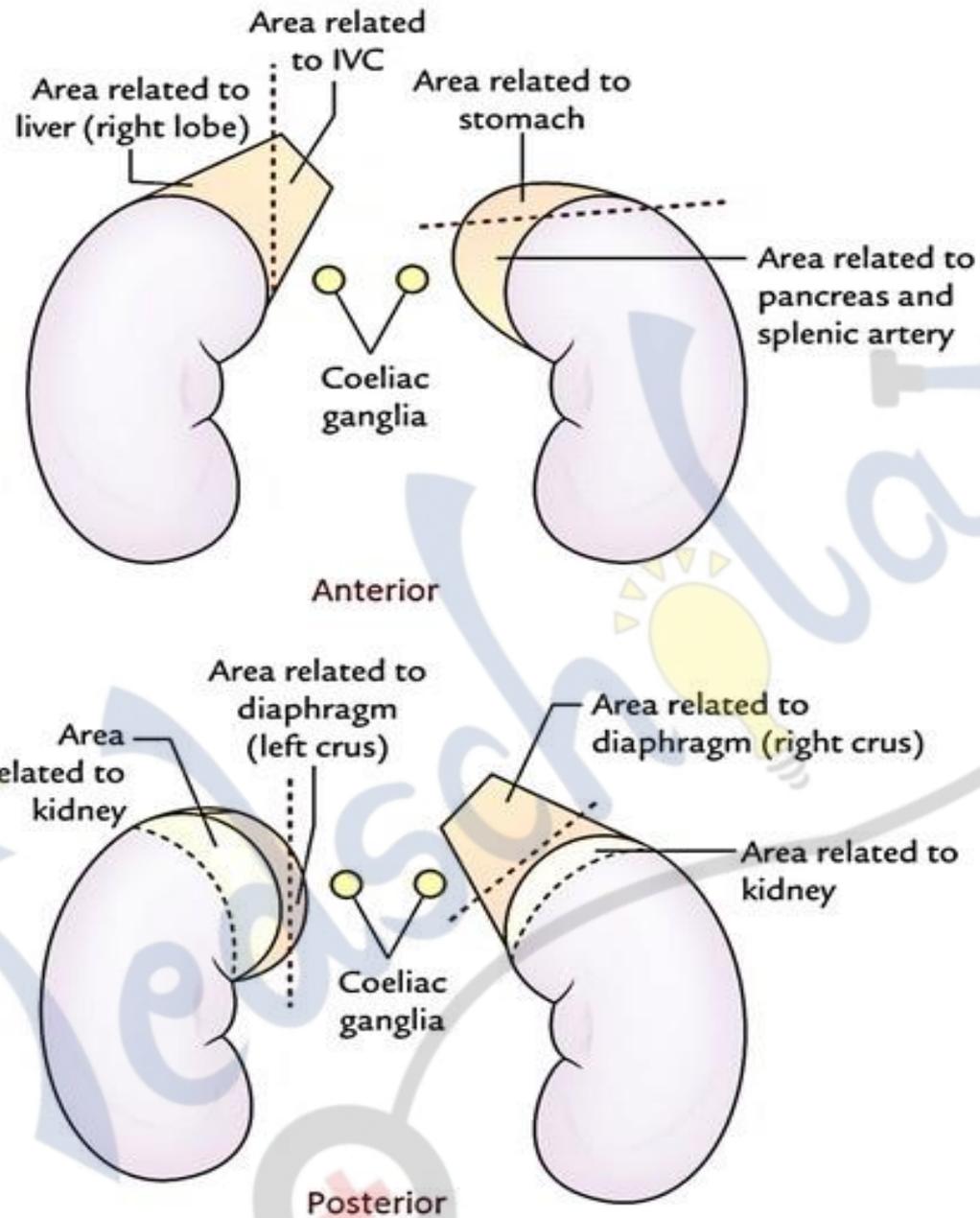
Right suprarenal gland: It has base, apex, 2 surfaces (anterior and posterior), and 3 edges (medial and lateral).

Left suprarenal gland: It has 2 ends (narrow upper end and rounded lower end), 2 edges (medial and lateral), and 2 surfaces (anterior and posterior).

- **Hilum:** The hilum of suprarenal gland gives development of the suprarenal vein. Its location differs on both sides.
- In the right suprarenal gland, it's short sulcus a little inferior to the apex and near the anterior border. From it, the right suprarenal vein comes to join the inferior vena cava.
- In the left supra renal gland, it's situated near the lower part of anterior surface and faces anteroinferiorly. From it, the left suprarenal vein appears to join the left renal vein.

Relations of suprarenal glands

	Right Gland	Left Gland
Apex or upper and lower end	Apex is related to bare area of liver. Base to upper pole of right kidney.	Upper end is related to the posterior end of spleen. Lower end is the hilum.
Anterior surface	Medially, the inferior vena cava; laterally, bare area of liver.	From above below it is related to – cardiac end of stomach, splenic artery, pancreas
Posterior surface	Right crus of diaphragm.	Kidney laterally; left crus of diaphragm medially.
Medial border	Right coeliac ganglion and right inferior phrenic artery.	Left coeliac ganglion, left inferior phrenic artery, left gastric artery.
Lateral border	Related to liver.	Related to stomach



Blood supply

ARTERIAL SUPPLY

Every gland is supplied by 3 arteries from 3 distinct sources:

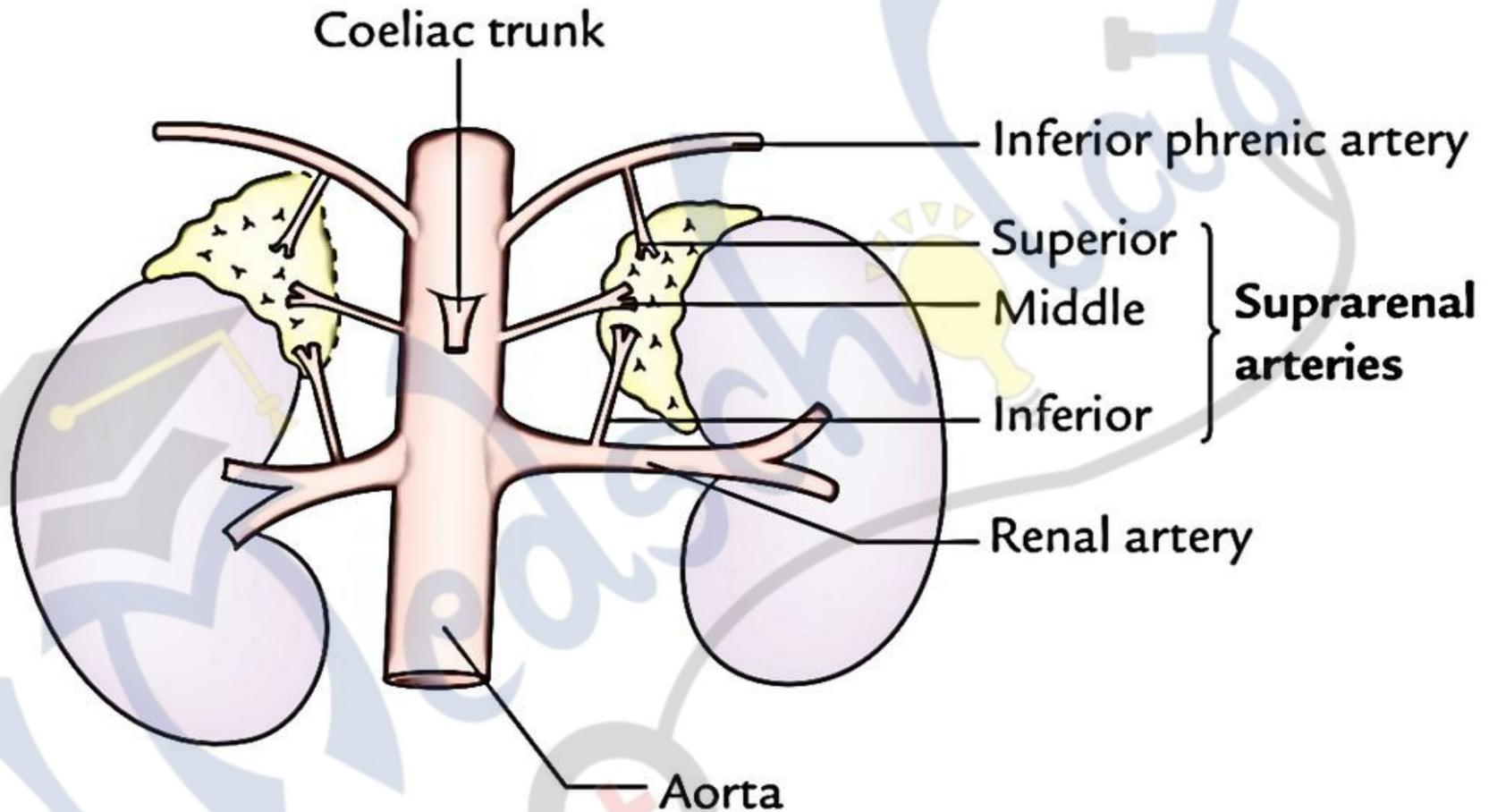
- **Superior suprarenal artery:** A branch of the inferior phrenic artery.
- **Middle suprarenal artery:** A branch of the abdominal aorta.
- **Inferior suprarenal artery:** A branch of the renal artery.

VENOUS DRAINAGE

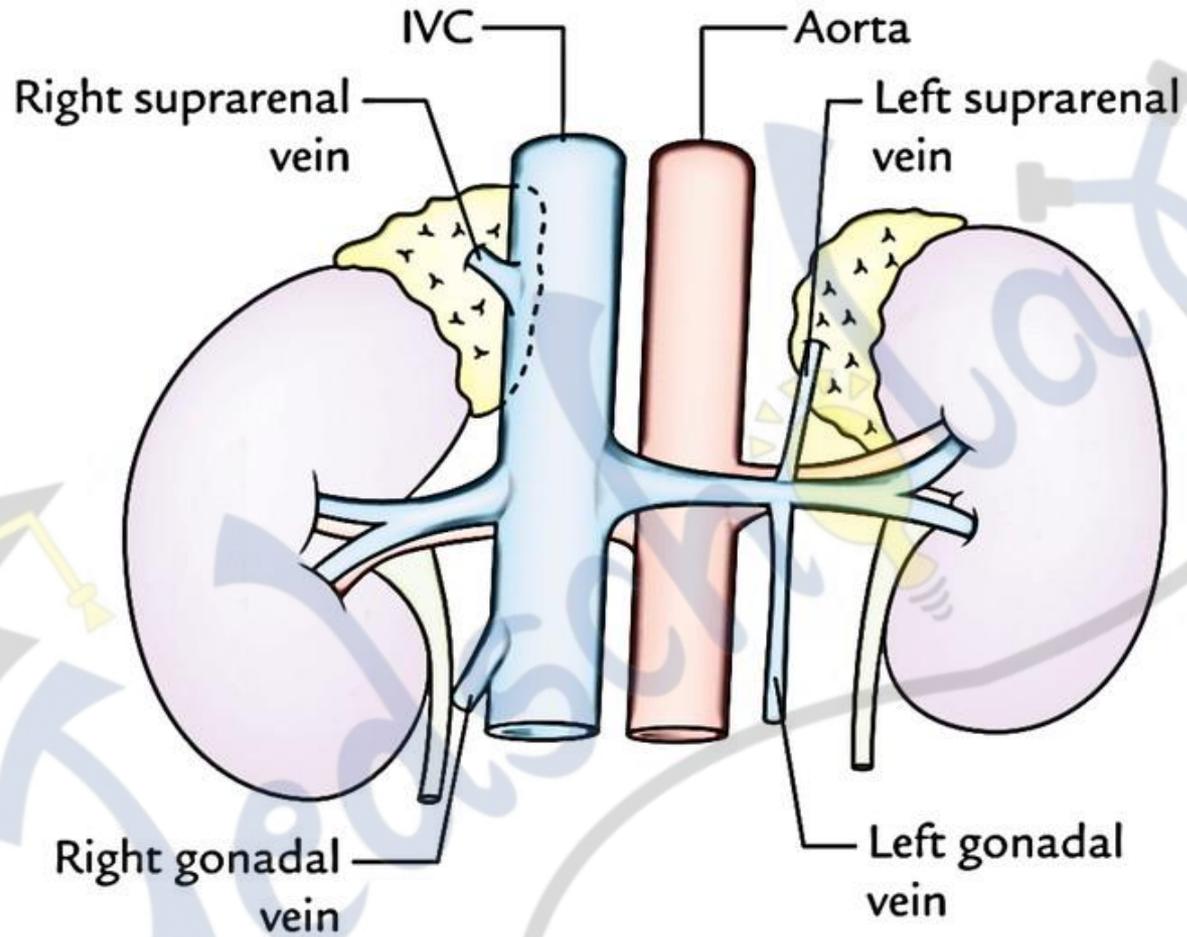
Every gland is emptied only by just one vein which comes from the hilus of the gland:

- Right suprarenal vein empties into the inferior vena cava.
- Left suprarenal vein empties into the left renal vein.

Arterial Supply :



Venous drainage :



Accessory suprarenal gland

These are small masses of cortical tissue often found in the areolar tissue around the main glands and sometimes in the spermatic cord, the epididymis, and the broad ligament of uterus.

Clinical Significance

A number of clinical circumstances may take place following lesions changing the cortex or medulla of the suprarenal gland. They may be attributable to either surplus or lack of secretions from various parts of the gland.

Addison's disease

It happens because of chronic insufficiency of cortical secretion. Medically, it presents as (a) muscle weakness and wasting, (b) increased pigmentation of skin, (c) low blood pressure, and (d) restlessness and tiredness, etc ultimately leading to terminal circulatory and renal failure.

Cushing's Syndrome

It happens because of hypersecretion of the adrenal cortex. Medically, it presents as (a) obesity including the face (moon face), neck, and abdomen, (b) hypertension, (c) hirsutism, and (d) masculinization (virilism) in female and feminization in male, and (e) adrenogenital syndrome in kids.

- Adrenalectomy (bilateral removal of the adrenal glands) is occasionally done in advanced and inoperable cases of carcinoma breast and prostate.
- Pheochromocytoma is a tumor of the adrenal medulla.

