Suprarenal gland

Introduction and Location

- The Suprarenal or adrenal glands are endocrine glands which help to maintain water and electrolyte balance.
- These also prepare the body for any emergency.
- Lack of secretion of cortical part leads to Addison's disease.
- Excessive secretion causes retention of salts and fluids.
- Each glands lies in epigastrium, at the upper pole of kidney, in front of crus of diaphragm, opposite the vertebral end of 11th intercostal space and 12th rib.

Subdivision

- This glands are pair of important endocrine glands situated on posterior abdominal wall over upper pole of kidneys behind the peritoneum.
- They are made up of two parts:
- (1) An outer cortex of mesodermal origin , which secretes a number of steroid hormones.
- (2) An inner medulla of neural crest origin, which is made up of chromaffin cells and secretes adrenaline and noradrenaline or catecholamines.

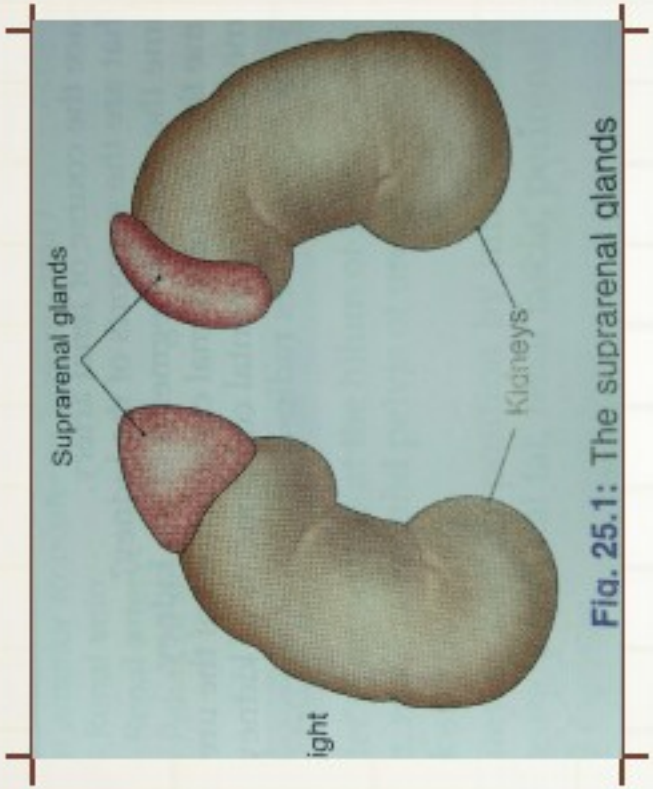


Fig. 25.1: The suprarenal glands

Size, Shape and Weight

Each glands measures 50mm in height, 30mm in breadth and 10mm in thickness.

It is approximately one-third of the size of kidney at birth and about one-thirtieth of it in adults.

It weight about 5 g, the medulla forming one-tenth of the gland.

Right Suprarenal is triangular or pyramidal in shape and the left is semiluar in shape.

Sheaths

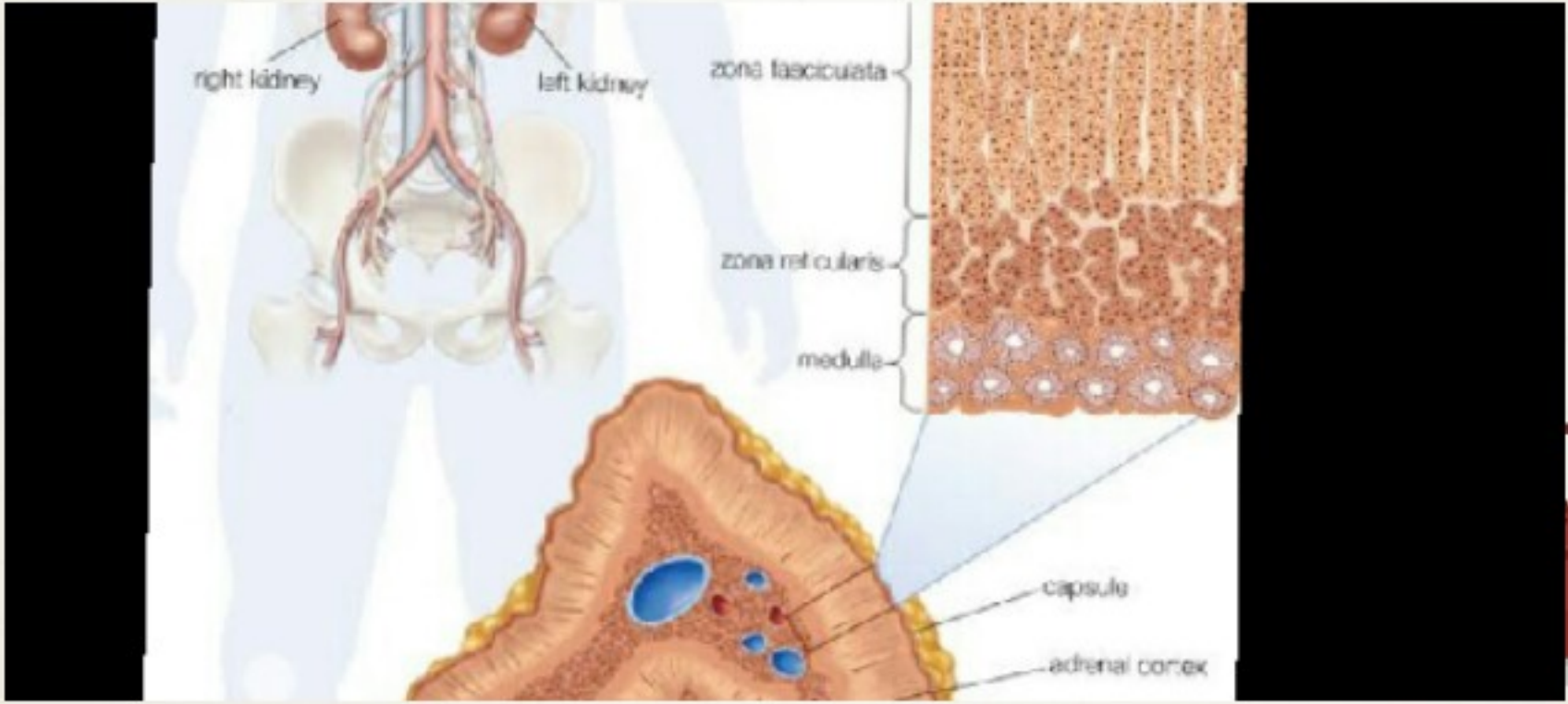
- The Suprarenal glands are immediately surrounded by areolar tissue containing considerable amount of fat.
- Outside the fatty sheath there is phenomenal fascia.
- Between the 2 layer of fascia lies the Suprarenal gland.
- The 2 layers are not fused above the Suprarenal.
- The perirenal space is open and is in continuity with bare area of liver on right side and with subphrenic extraperitoneal space on left side.
- The gland is separated from kidney by septum.

Right Suprarenal gland and Left Suprarenal gland

- Triangular to pyramidal in shape. It has,
- An apex
- A base
- Two surface - anterior and posterior
- Three borders - anterior, medial and lateral

- Semilunar in shape. It has,
- Two ends - upper(narrow end) and lower(rounded end).
- Two borders - medial - convex and lateral - concave.
- Two surface - anterior and posterior.

Structure

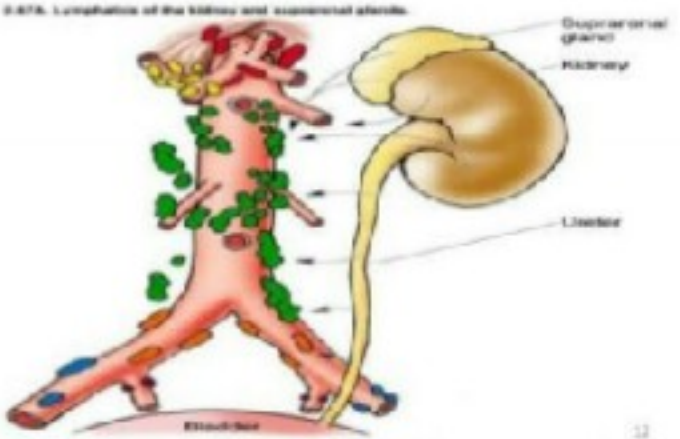

right kidney
left kidney
zona fasciculata
zona reticularis
medulla
capsula
adrenal cortex

Arterial supply and Venous drainage

- Arteries : (1)superior Suprarenal artery
- (2)Middle Suprarenal artery
- (3)Inferior Suprarenal artery
- veins : (1) Suprarenal vein drain into inferior Vena cava.
- (2) Left Suprarenal vein into Left renal vein.

Lymphatic drainage

- Lymphatic from the suprarenal glands drain into the lateral aortic nodes



Nerve supply

Suprarenal medulla has a rich nerve supply through myelinated preganglionic sympathetic fibres.

The chromaffin cells in it are considered homologous with postganglionic sympathetic neurons.

Accessory Suprarenal gland

These are small masses of cortical tissue often found in the areolar tissue around the main glands and some times in the spermatic cord, The epididymis, and the broad ligaments of the uterus.

Clinical Anatomy

- Demonstrated radiologically by computerised tomography (CT) scan.
- Addison's disease
- Hyperplasia
- Cushing's syndrome
- Masculinisation (Virilism)
- Feminisation
- Adrenogenital syndrome
- Adrenalectomy
- Phaeochomocytoma