

Testis and Epididymis

Testis and epididymis

Introduction

The testis and epididymis are paired structures located within the scrotum, playing crucial roles in the reproductive system of males.

Testis are site for sperm production and hormone synthesis

Epididymis is involved in the maturation of the sperm and storage

Anatomical position

Anatomically, the testes are situated within the scrotum, with the epididymis positioned on the posterolateral aspect of each testicle. It's common for the left testicle to be lower than the right one. These structures are suspended from the abdomen via the spermatic cord, having originally developed on the posterior abdominal wall and descended through the abdomen and inguinal canal during fetal development.

Anatomical structure

The testes

The testis has an ellipsoid shape and is composed of lobules containing seminiferous tubules, where sperm are produced. These tubules are lined with Sertoli cells that aid in sperm maturation, while Leydig cells in the interstitial tissue are responsible for testosterone production. Spermatozoa travel through the seminiferous tubules, collecting into the rete testes before being transported to the epididymis for storage and further maturation.

Coverings of the testes:

- 1.) Skin
- 2.) Dartos fascia
- 3.) External spermatic fascia
- 4.) Cremaster and fascia
- 5.) Internal spermatic fascia
- 6.) Tunica vaginalis (parietal)
- 7.) Tunica vaginalis (visceral)

Internal structure-

- Tunica albuginea is a dense membrane of CT covering testis with the vascular layer underneath the tunica albuginea. This pierces the internal structure of testis splitting up testis into lobules

- Lobules of testis – contain a single tubule consisting of:

- o Convoluted seminiferous tubules lined with specialized stratified epithelium (germinal/ spermatogenic epithelium). The basement membrane is covered by fibrous CT with the innermost layer containing flattened smooth muscle like myoid cells allowing for weak contraction of tubule

- o Straight tubules – connects seminiferous tubules to rete testis

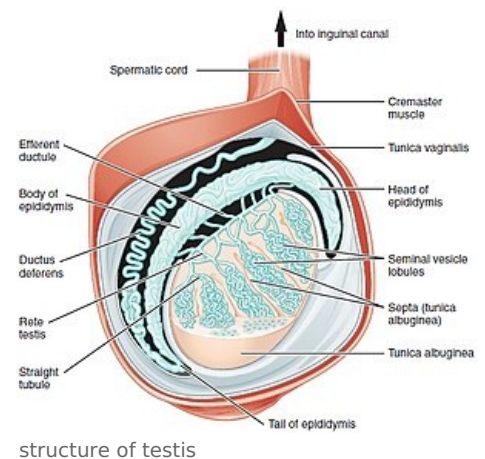
- Rete testis – labyrinth of epithelial lined channels embedded in the mediastinum

- Efferent ductules(around 8-12) – connect rete testis to epididymis

- Mediastinum of testis (close to hilum) filled with CT where rete testes and efferent ductules coalesce

Neurovasculature of testis:

- Arterial supply – via testicular artery from abdominal aorta, but partially by artery to ductus deferens from internal iliac and cremasteric artery from inferior epigastric



- Venous supply – pampiniform plexus – network of small veins due to the union of testicular veins which the right one drains into inferior vena cava and left one to left renal vein
- Innervation
 - o Sympathetic system – testicular plexus around testicular artery
 - o Parasympathetic – vagus nerve
 - o Visceral sensory system – thoracic nerve running to T10

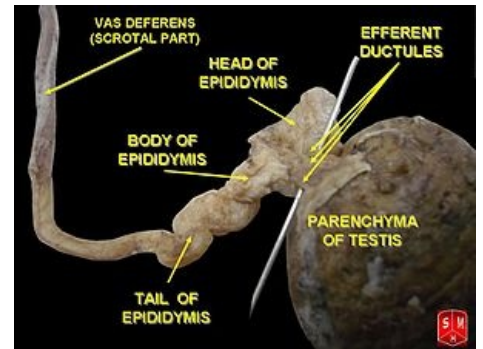
Epididymis

The epididymis is a highly coiled duct divided into three parts: the head, body, and tail.

It found on the posterior surface of the testes, and sits along the entire length of the posterior testes.

Neurovasculature of epididymis-

- Arterial supply – testicular artery from abdominal aorta
- Venous drainage – pampiniform plexus -> testicular veins -> left side left renal vein, right side IVC
- Innervation-
 - o Sympathetic – testicular plexus along testicular artery
 - o Parasympathetic – vagus nerve
 - o Visceral sensory – spinal nerves T11-T12



epididymis structure

References

- HUDÁK, Radovan – KACHLÍK, David. *Memorix anatomie*. 2. edition. Triton, 2013. ISBN 978-80-7387-712-5.