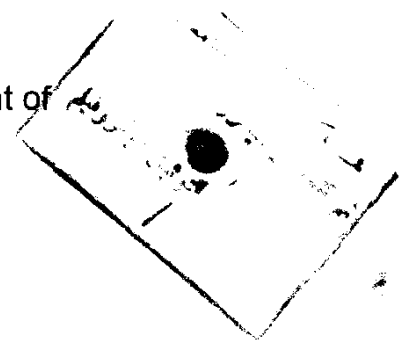
DUPLEX DOPPLER ULTRASOUND IN THE EVALUATION OF SCROTAL DISEASE

ESSAY

Submitted for partial fulfillment of

Master degree in

Radiodiagnosis



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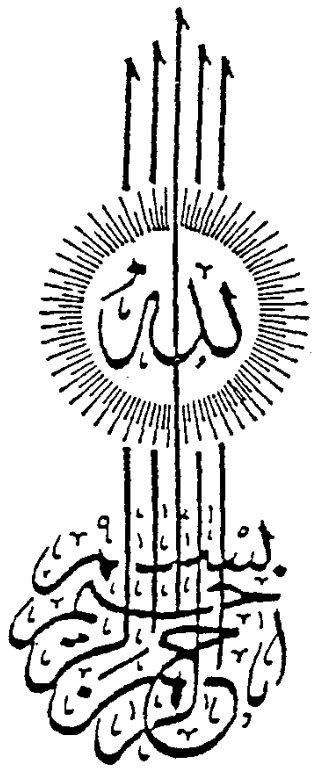

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا
عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ .

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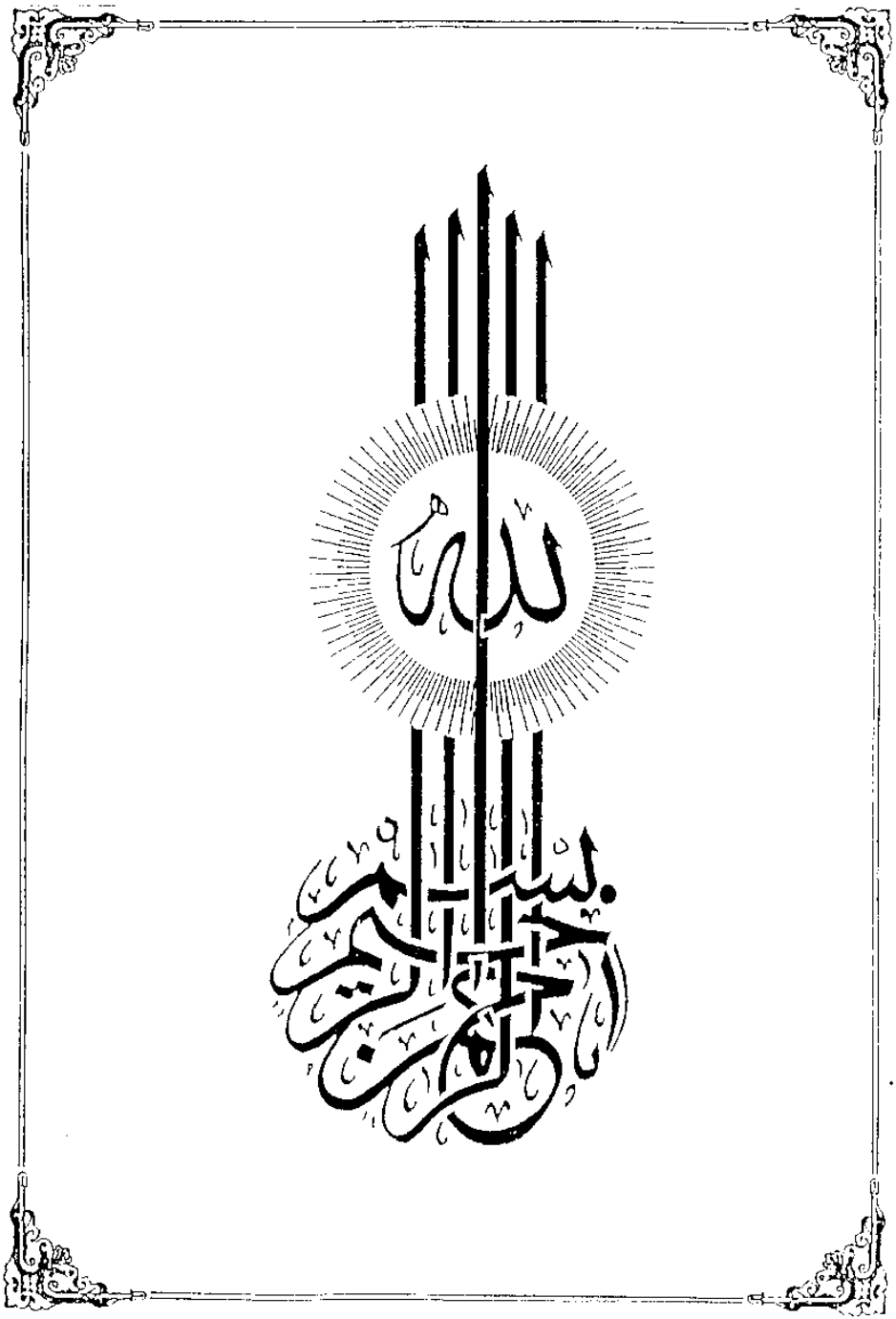

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INTRODUCTION AND AIM OF THE WORK

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* Scrotal disease may be present difficult challenge to experienced clinicians. An ideal imaging technique would allow correlation of anatomy with perfusion data.

* Duplex Doppler ultrasound is ideally suited for diagnosing scrotal disease in which correlated with blood flow provides the information necessary to recommend appropriate management (Lerner et al., 1990).

* The aim of this work is to lie stress on the role of duplex doppler ultrasound in diagnosis of scrotal disease and to define its position in the management of these cases.

ANATOMY

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ANATOMY

Before starting anatomical details, it is necessary to mention breif notes about embryological development.

In the human embryo, the primordial germ cells are initially located in the wall of the yolk sac, adjacent to the allantois.

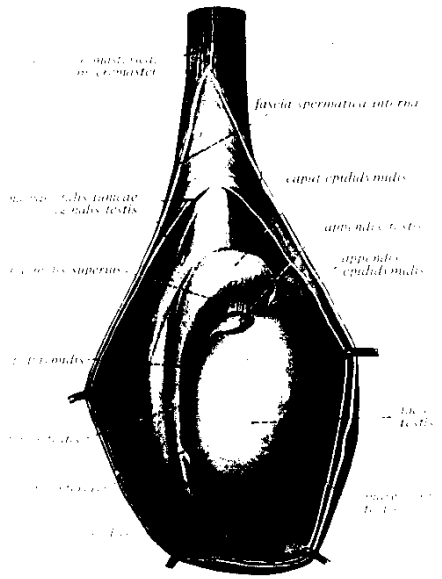
By the sixth week of development, they migrate to the genital ridges on each side of the fetal midline **(Langman, 1975)**.

The testis (Seminiferous) cords develop near the hilus of the gland; they are separated from the surface epithelium by a dense layer of fibrous connective tissue called the tunica albuginea, which forms the capsule of the testis. These cords remain solid until puberty, when they acquire a lumen, thus forming seminiferous tubules **(Reith and Ross, 1983)**.

Once they are canalized, they rapidly join the rete testis, which, in turn, enters the efferent ductules.

Excretory tubules (epigenital tubules) of the mesonephros in the region of the developing testis establish contact with the rete testis to form the efferent ductules. Sertoli cells provide a phagocytic function and have an important role in the regulation of speramtogenesis.

Interstitial cells of leydig develop from the mesenchyme between the seminiferous tubules and produce testosterone. The Wolffian duct



(Fig. 2) Right testis and epdidymis-exposed by removal of anterior wall of scrotum.
(Quoted from, Ferner and staubesand, 1982).

ANATOMY OF THE TESTES AND EPIDIDYMIS

Testes:

The testes, the reproductive glands in the male, are suspended in the scrotum by the scrotal tissues, especially the nonstriated dartos muscles, and by the structures forming the spermatic cords. The left testis usually hanging somewhat lower (about 1cm) than its fellow.

The average dimenstions of the testis are from 4 to 5 cm in length, 2.5 cm in breadth and 3 cm in the anteroposterior diameter, its weight varies from 10.5 to 14 gm.

Each testis is of an ellipsoidal form, compressed laterally, and has an oblique position in the scrotum, upper extremity is tilted antero-laterally, the lower, posteromedially. The anterior border is convex, the posterior border, nearly straight, and the spermatic cord is attached to the latter (Fig. 2).

The anterior border, the medial and lateral surfaces and the extremities of the testis, are convex, smooth and invested by the visceral layer of the tunica vaginalis, by which they are separated from the parietal layer and hence scrotal tissues external to this. The posterior border receives only a partial investment from that membrane. The epididymis lies along the lateral part of the posterior border. The testis is