EVALUATION OF HERNIOGRAPHY AS INVESTIGATION IN PATIENTS WITH CLINICALLY SUGGESTED INGUINAL HERNIA

Thesis

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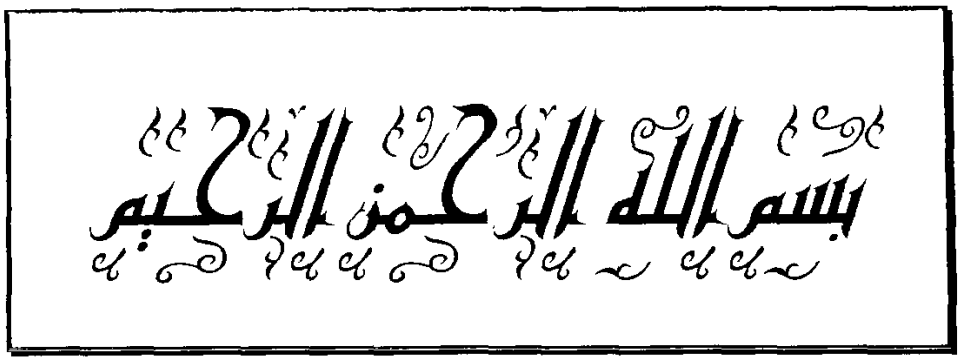

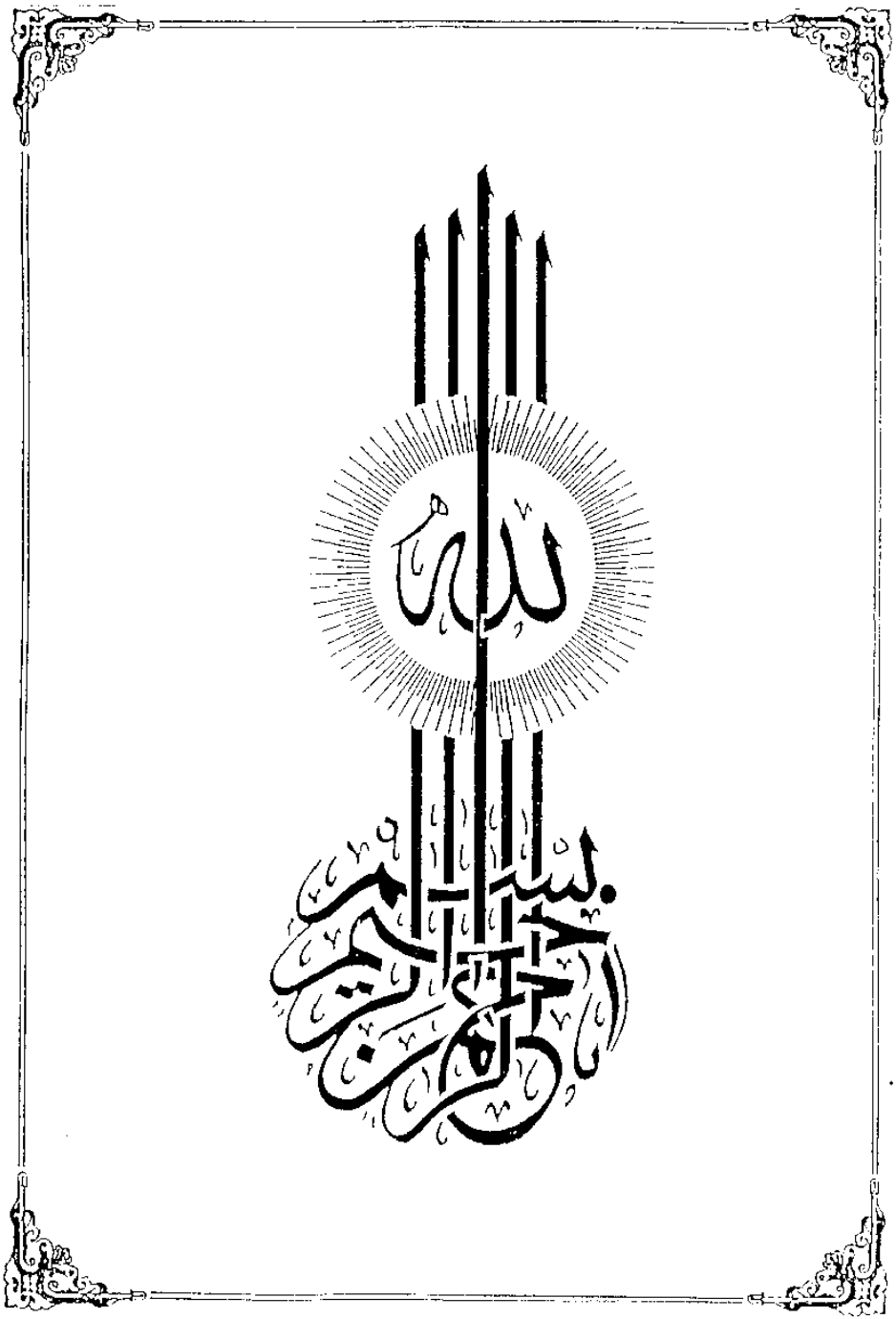

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INTRODUCTION

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Hernia is generally defined as protrusion of abdominal viscera outside the abdominal cavity through congenital or acquired defect. One of the oldest and commonest hernias is the inguinal hernia. The earliest record of inguinal hernia dates back to approximately 1500 BC. The term derived from the Greek word meaning an offshoot budding or bulge. The Latin word hernia means rupture or tear.

It is well known that the clinical diagnosis of hernias often produces doubtful results. As the correlation between positive cough impulse and an underlying hernia appears to be poor (Eames, 1994).

It was found that even large inguinal hernias might escape detection on physical examination (Blomoquist, 1981). Also the ability to discriminate between different types of hernias by physical examination has been shown to be weak (Brain, 1980).

Herniography is used for selective examination of the inguinal region. It is a special method for the diagnosis of inguinal hernias in patients whom-no clinical findings of hernia could be established (Gullmo, 1984).

Herniography, first described in Canada 1967 (Ducharme, 1967). It has been used infrequently in Europe, except in Scandinavia (Devlin, 1988).

It includes injection of radiopaque contrast material intraperitoneally, and the patient is maneuvered through various positions in an attempt to introduce the material into an actual or potential hernial sac that can then be demonstrated radiographically (Swischuk, 1971).

Herniography is a direct method for exact evaluation of the lower part of the abdominal wall. Also, it is easy to perform, sensitive and involves very little inconvenience to the patient. It have the potential to indicate patients suitable for surgical exploration and keep the frequency of negative exploration to a minimum (Ekberg, 1984).

EMBRYOLOGY

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The embryology of the inguinal region is important for a proper understanding of the cause of hernia.

The gonads begin to develop during the fifth week of gestation. When the primordial germ cells migrate from the yolk sac to the gonadal ridges, which are thickened areas of tissue in the medial aspect of the mesonephros (Lemeh, 1960).

The eventual differentiation of the ridges to either testis or ovaries is dependent on the hormonal profile (Moore, 1988).

As the mesonephros degenerates, the ligamentous gubernaculum forms, descending on each side of the abdomen from the inferior pole of the gonad and attaching to the internal surface of the labial-scrotal swelling.

This latter structure will ultimately differentiate into the hemiscrotum or labium majus. During its course, the gubernaculum passes through the anterior abdominal wall at the site of the future inguinal canal.

The processus vaginalis, which is a diverticular evagination of the peritoneum, forms ventral to the gubernaculum bilaterally and herniates through the abdominal wall with the gubernaculum (Skinner, 1993).

The testis, initially located retroperitoneally, has generally descended to the region of the deep inguinal ring by about 28 weeks-gestational age. This descent is a relative movement of the structure that results from the differential growth of the superior portion of the abdomen away from the pelvis.

It is thought that the descent of the testis through the inguinal canal is regulated in part by androgenic hormones produced by the fetal testis and may also be related to mechanical factors resulting from increased intra-abdominal pressure.

The descent of the testis into the scrotum usually begins at about 28 weeks and generally takes 2 to 3 days. As each testis descends through the inguinal canal external to the processus vaginalis, the layers of the spermatic cord are formed by reflections of the layers of the abdominal wall. The extension of the transversalis fascia becomes the internal spermatic fascia, the cremaster muscle is the reflection of the internal abdominal oblique muscle and external spermatic fascia is continuation of the transversus abdominis (Skinner, 1993).

The ovaries also descend into the pelvis but normally do not exit the abdominal cavity. In little girls, the cranial portion of the gubernaculum differentiates into the ovarian ligament and the inferior aspect of a less prominent gubernaculum bwcomes the

round ligament, which passes through the internal ring and into the labium majus.

The processus vaginalis, if it remains patent, extends into the labium majus and is epanymically known as the canal of Nuck.

In the last few weeks of gestation, the layers of the processus vaginalis normally fuse together, obliterating the entrance into the inguinal canal from the peritoneal cavity.

Failure of obliteration results in a variety of inguinal anomalies including an indirect inguinal hernia (Skinner, 1993).

ANATOMY