FISTULA-IN-ANO

THESIS

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PRESENTED BY

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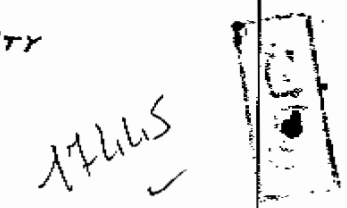
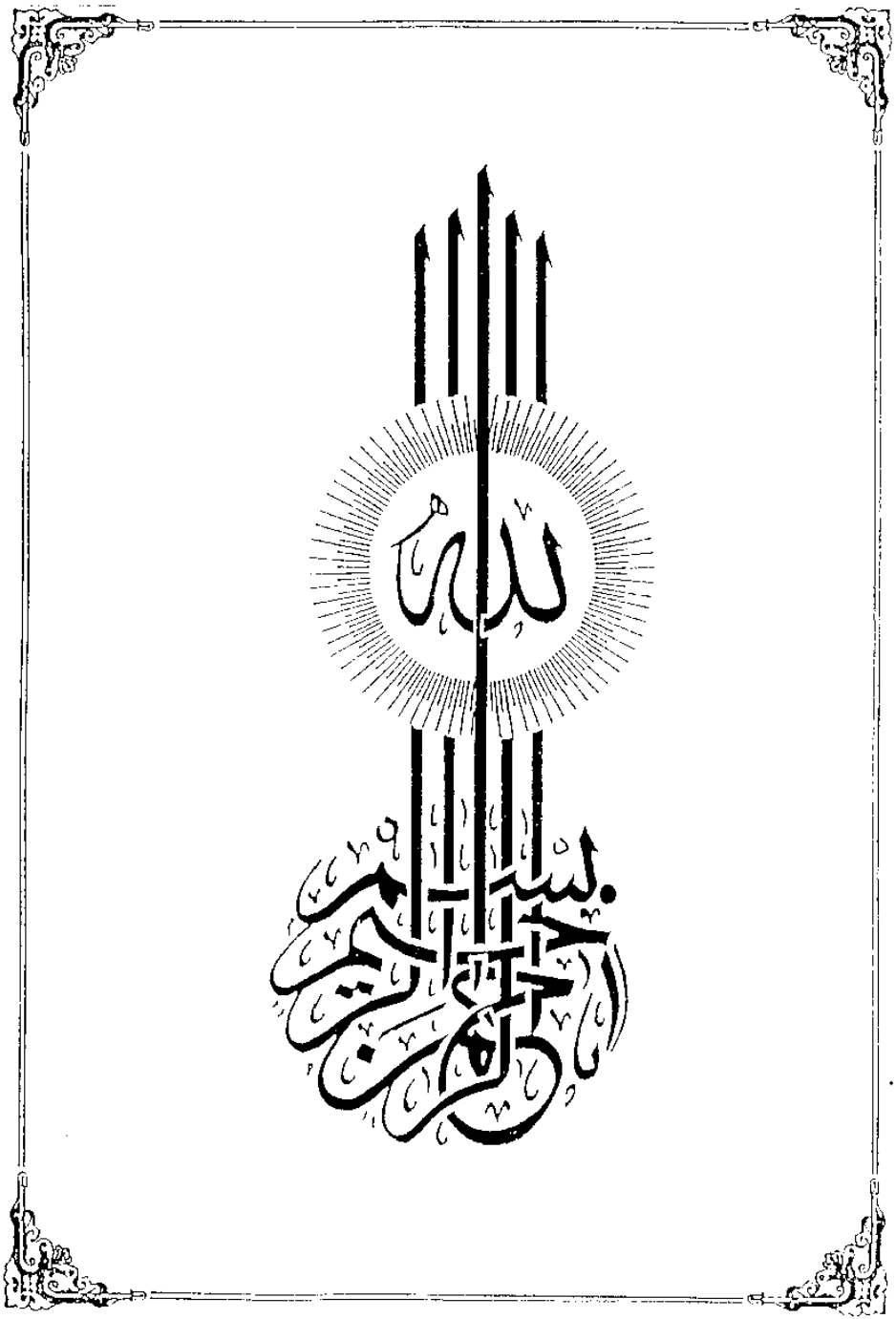


بِسْمِ ٱللَّهِ ٱلرَّحْمَٰنِ ٱلرَّحِيمِ

قَالُوا۟ سُبْحَٰنَكَ لَا عِلْمَ لَنَآ إِلَّا مَا عَلَّمْتَنَآ ۖ

إِنَّكَ أَنتَ ٱلْعَلِيمُ ٱلْحَكِيمُ ۝

صَدَقَ اللّٰهُ العَظِيم



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INTRODUCTION

Fistula-in-ano is a common disease met with in surgical practice.

It is a troublesome condition for the patient as well as the surgeon. As regards the patient, it is not only the apparent well-known symptoms that he suffers from, but also the common psychological problems associating this condition.

On the surgical side, despite the advances in techniques of surgical treatment, some types of perianal fistulae carry the possibility of recurrence.

This work started with the study of the anatomy and physiology of the anorectal region as well as the pathogenesis of the perianal fistula, Parks new classification and its relation to Goligher's classification was included, 20 patients complaining of this condition were thoroughly investigated and were later on subjected to various lines of management.

The results as observed in the follow up were statistically evaluated.

ANATOMY

Anatomy of the rectum and anal Canal

As a matter of fact it is impossible to perform an operation without accurate anatomical knowledge, especially in case of anal fistula, where hazardous surgery can lead to bad results, so it is wise to study the detailed anatomy of the rectum and anal canal in relation to fistula-in-ano, and to help a lot in the diagnosis and management of this very common and familiar disease.

Emberyology of rectum & anal canal:

The part of the hind gut distal to the Allantois dilate to form the entodermal cloaca, having the cloacal membrane at the ventral wall. The cloaca is incompletely divided into ventral and dorsal parts by the urorectal septum.

The rectum and upper part of the anal canal develop from the dorsal part of the cloaca.

The urorectal septum in a 16 mm embryo grows downwards to fuse with the cloacal membrane dividing it

into **anal membrane** behind and **urogenital membrane** infront.

The mesoderm around the anal membrane proliferates to form the anal tubercles which produce an ectodermal depression called the proctodaeum at the depth of which is found the anal membrane. The anal membrane disintegrate at the third month and thus the lumen of the rectum is continous with the proctodaeum. So the upper part of the anal canal develops from the distal end of the dorsal part of the cloaca which is endodermal in origin, while the lower part develops from the proctodaeum, is ectodermal in origin, lined by stratified squamous epithelium.

The anal valves and the white line of Hilton are considered to represent the white line of fusion between the two parts. The part of the rectum above the middle fold is usually considered to develop from the hindgut, while the part below the middle fold together with the upper part of the anal canal are derived from cloaca (Grey's, anatomy).

Anatomy of the rectum

The rectum begins at the rectosigmoid junction where it turns sharply downwards to follow the sacral curve. This rectosigmoid junction may be marked by a distinct flexure in case of fairly long loops of the sigmoid, if it is present. Formerly, it was said that there is a sphincter at the rectosigmoid junction, but it is well known that such a sphincter is not present.

The rectum proceeds downwards, then downwards and forwards closely applied to the concavity of the sacrum and coccyx for 13 - 15 cm, it ends 2 - 3 cm in front of and below the tip of the coccyx by turning abruptly downwards and backwards and then passes through the levator ani to become the anal canal. The upper third of the rectum is completely covered with peritoneum except for a thin strip posteriorly where the peritoneum is reflected off as the two leaves of the thick mesorectum, this becomes broader and shorter as the rectum descends down. At the middle third, the peritoneum covers the anterior aspect and the sides

of the rectum, and as it progresses it becomes reflected forwards at the bottom of the rectovesical or rectouterine pouch and the back of the seminal vesicles, and the bladder, or the vagina and uterus in the female, leaving the lower third of the rectum without any peritoneal covering. Therefore it is possible to distinguish between intraperitoneal and extra peritoneal parts of the rectum or the rectum haut and rectum bas of the frensh surgeons. The peritoneal reflection is not a fixed landmark but it is of considerable individual variations.

Below the pelvic peritoneum and on either side of the rectum, there is a space filled with fibrofatty tissue. The fibrous elements of which are a part of the pelvic fascia and connects the parietal pelvic fascia on the side wall of the pelvis with the rectum. These are the lateral ligaments of the rectum, they have a roughly triangular shape with the base on the pelvic side wall and apex joining the side of the rectum. They may give support to the rectum and they contain inside them the middle haemorrhoidal vessels.

The posterior aspect of the extraperitoneal rectum is loosely bound down to the front of the sacrum

and coccyx by connective tissue, which is easily separated by blunt dissection. When this is done, it is found that there is still a thin layer of fascia covering the fat, vessels and lymph glands on the back of the rectum. This is so called fascia propria or fascial capsule of the rectum. The sacrum and coccyx are also still covered with a fascia known as fascia of Waldayer (1899). This becomes thinner and less distinct as it descends downwards. Inferiorly it bends forwards and downwards to become attached to the anorectal junction and to the fascia propria of the rectum. The middle sacral vessels lie between it and the bone.

Denonvilliers fascia or the recto-vesical fascia is a fascial layer extending from the anterior peritoneal reflection of the extraperitoneal part of the rectum to the superior fascia of the urogenital diaphragm (triangular ligament) below, and laterally becomes continous with the front of lateral ligaments. This fascia intervenes between the rectum behind and the prostate and seminal vesicles or vagina anteriorly but is more adherent to the rectum. Sometimes this fascia consists of two layers.

The rectum has other relations, behind and outside the fascia of Waldayer the rectum is related to the sacrum and coccyx, the leavator ani muscles, the left and sometimes the right coccygeus muscle, the middle sacral vessels and the roots of the sacral plexus on either side.

In front where the rectum is considerably covered with peritoneum, the relations of the rectum are mainly visceral, in the male, the extraperitoneal part is related to the prostate, seminal vesicles, vasa deferentia, ureters and bladder wall from below upwards; the intraperitoneal rectum is in contact with loops of the small intestine and sigmoid colon, and across the rectovesical pouch to the upper parts of the seminal vesicles and the bladder.

In the female, the extraperitoneal rectum lies immediately close to the posterior vaginal wall, the intraperitoneal rectum is related across the pouch of Douglas to the upper part of the vagina and the uterus with coils of small gut, the ovaries, uterine tubes and the sigmoid colon in the pouch itself.

Laterally above the peritoneal reflection are

visera, mainly loops of the small gut, uterine appendages and the sigmoid colon. Below, the reflection is separated from the side wall of the pelvis, the ureter, and iliac vessels by the connective tissue and fascia of the lateral ligament. At still lower level the levator ani becomes a close lateral relation separated by the lower part of the lateral ligaments.

Anatomy of the anal canal

Anal canal is a short passage 3 cm long connecting the rectum superiorly to the exterior, and is surrounded by a muscular compartment controlling the passage of its contents. It is collapsed anteroposteriorly by the action of its sphincters. Its relations, posteriorly it is related to the coccyx with certain amounts of fibrous, fatty and muscular tissue in between; while laterally and on both sides there is the ischiorectal fossae with their contained fat and the inferior haemorrhoidal vessels and nerves crossing them to the anal canal. In male; it is related anteriorly to the central point of the perineum, the bulb of the urethera and the posterior border of the urogenital diaphragm containing the membranous urethra, while in female, it is related anteriorly to the perineal body and the lower part of the vaginal wall.

Mucocutaneous lining of the anal canal, as embryological studies of the anal canal showed that it is formed by the fusion of postallantoic gut with the proctodeal membrane. So, in study of the mucocutaneous lining of the anal canal we find that it is composed