

COMPLETE RECTAL PROLAPSE

Thesis

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By

Tarek Abdel-Ghany El-Khwas

Supervised by

Prof. Dr. Ali Lashin

Prof. of General Surgery

Ain Shams University

Dr. Hesham Souka

Lecturer of General Surgery

Ain Shams University

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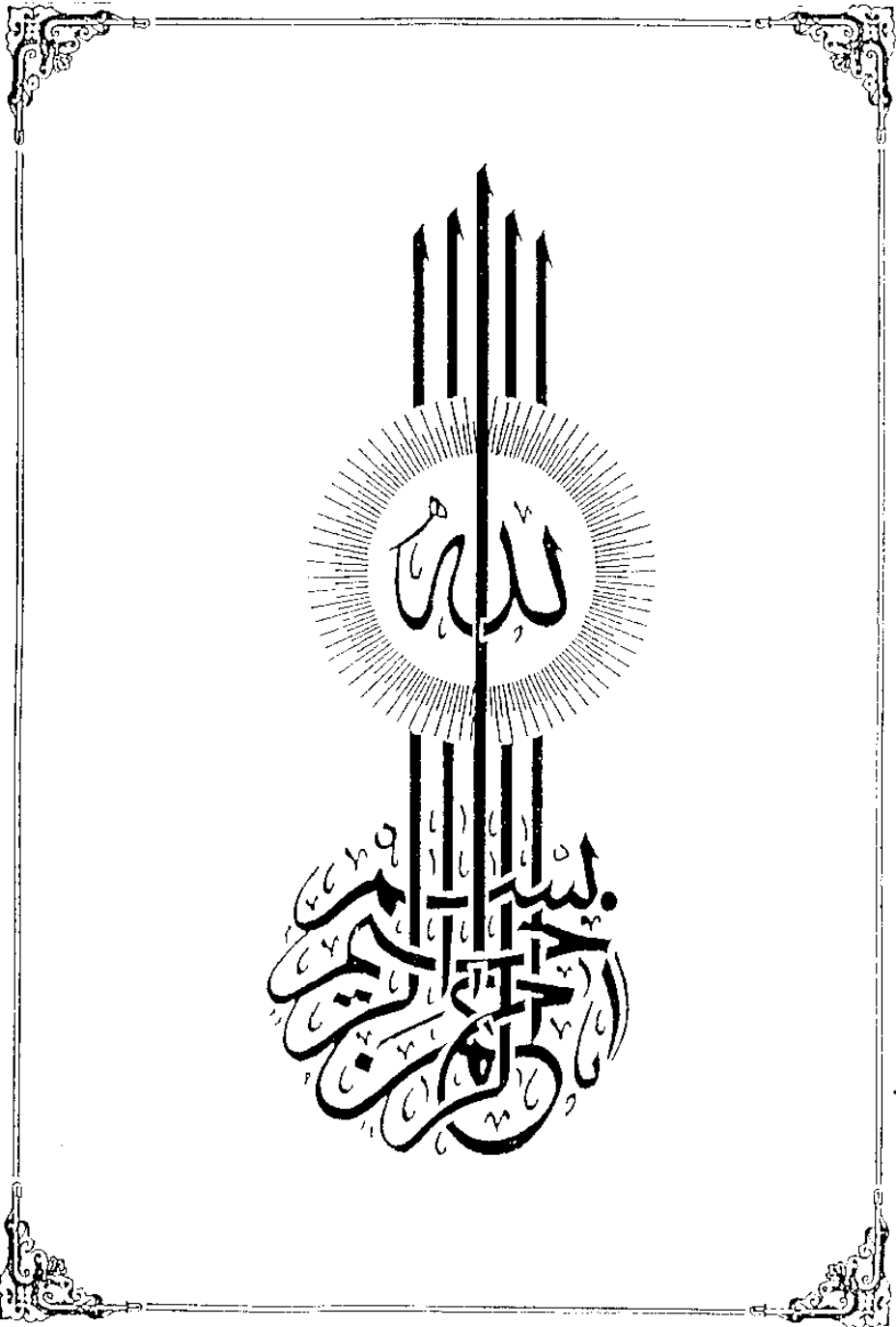
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Introduction

Rectal prolapse or procidentia is an uncommon clinical entity that has long fascinated surgeons. Factors associated with the etiology may be congenital or acquired (Corman., 1988).

Rectal prolapse is a condition that was recognized in antiquity, having been described in the Ebers Papyrus of 1500 B.C. (Mann., 1969).

Complete rectal prolapse in the adult is an uncommon condition (Graham et al., 1984). It often occurs in persons in the extremes of life (Corman, 1984).

Rectal prolapse is a distressing disease of the elderly because it is frequently accompanied by faecal incontinence (Matheson & Keighley., 1981).

Although rectal prolapse and fecal incontinence are both well recognized sequelae of the aging process, functional disorders of the anorectum are increasingly diagnosed in much younger age groups (Henry., 1988).

The prolapse causes considerable discomfort and social embarrassment, and is associated with a wide variety of symptoms including faecal incontinence constipation and diarrhea, persistent mucus discharge and bleeding and exoriation of the prolapsed rectal mucosa (Graham et al., 1984).

Rectal prolapse is defined as the protrusion of one or more layers of rectum through the anal sphincter. If mucosa alone is involved, the prolapse is called incomplete, if all layers of the rectal wall protrude, it is termed complete (Thomson et al., 1981).

For years most surgeons ascribed to the belief that complete rectal prolapse was a sliding hernia, but in more recent years it has been refuted (Theuerkauf et al., 1985).

After years of debate concerning the nature of the pathologic condition, Ripstein and Lanter and others introduced the concept of an intussusception.

When the act of defecation is viewed by means of cineradiography or by defecography, the sequence of the events is confirmed (Corman., 1988).

Internal intussusception is a distinct clinical entity that represents the precursor of complete prolapse. It is an early stage of the disease-, occurring internally before the prolapsed bowel becomes evident externally (Theuerkauf et al., 1985).

The diagnosis is frequently missed in the young and in some subjects the prolapse is occult (White et al., 1980). Sometimes, prolapse is suspected but cannot be demonstrated given the constraints of the examination couch. In these circumstances, the prolapse might be diagnosable with the patient straining in the squatting position or,

alternatively, during evacuation proctography (Henry., 1988).

Because many patient presenting with rectal prolapse are old and infirm, surgeons tend to favour low morbidity, local operations on the anal canal (Goligher., 1984).

Such local procedures include the Tintersch wire or a silastic sling around the anal canal (Jackman et al., 1980).

Some surgeons prefer the operation described by Delorme, in which the predominant rectal mucosa is excised per anus. This procedure, although less invasive, does in most series have higher recurrence rates (Henry., 1988).

Operations to cure rectal prolapse now simply mobilize the rectum and fix it to the sacrum or the symphysis pubis so that an intussusception cannot occur (Keighley et al., 1983).

Patients suffering from faecal incontinence can undergo a post-anal repair. Nevertheless some cannot be helped, and then a colostomy is often the last management (Thomson., 1986).

Anatomy

Anatomy of the rectum

The latin word ' rectus ' means straight,. The rectum is misnamed, for it is curved in conformity with the hollow of the sacrum and, in addition, has a secondary bulge to the left of the midline (Last., 1985).

The rectum is continuous with the sigmoid colon and there is no change of structure at the junction. Where there is a mesocolon the gut is called sigmoid, where there is no mesentery it is called rectum (Last., 1985).

This part of the large bowel commences where the pelvic colon loses its mesentery opposite the third piece of the sacrum and ends at the tip of the apex of the prostate, 1 to 1.25 inches (2.5 to 3.1 cm) below the tip of the coccyx, where it changes direction to become part of the anal canal (Ralph Ger., 1988).

No sphincter exists at the rectosigmoid junction (Goligher., 1984).

The sacculations and appendices epiploicae present in the sigmoid are absent in the rectum (Warwick & Williams., 1973).

Approximately 5 inches (12.5 cm) long. It is curved in an anteroposterior direction so as to fit into the hollow of the sacrum, a most important point in preventing descent or

prolapse. In the sagittal plane, the upper and lower thirds are straight, but the middle third curves to the left. The latter curve results in indentations into the rectum, two of which lie to the left and one to the right. The rectum is much straighter in the child and also relatively larger (Ralph., 1988).

The angulation of the bowel on the concave side of each of these curves is accentuated by infoldings of the mucosa known as Houston's valves. Fig. (1) The last is the most prominent and is situated about the same level as the anterior peritoneal reflection. The part of the rectum below this level has a wider lumen and is known as the ampulla of the rectum (Goligher., 1984).

The indentations, plicae transversalis recti (transverse folds, Houston's valves) are usually three in number, although there may be one less or one more. Unlike the small bowel, where the valvulae conniventes are folds of mucous membrane only, the rectal folds contain submucosa and circular muscle. This allows an adequate rectal biopsy in patients with suspected Hirschsprung's disease with a sharply reduced risk of perforation (Spandling, 1961). The levels of these semilunar folds are important. Of the two on the right, the upper and most constant one lies at the level of the fundus of the bladder. The fold on the left lies at a level between the two on the right and indicates the level

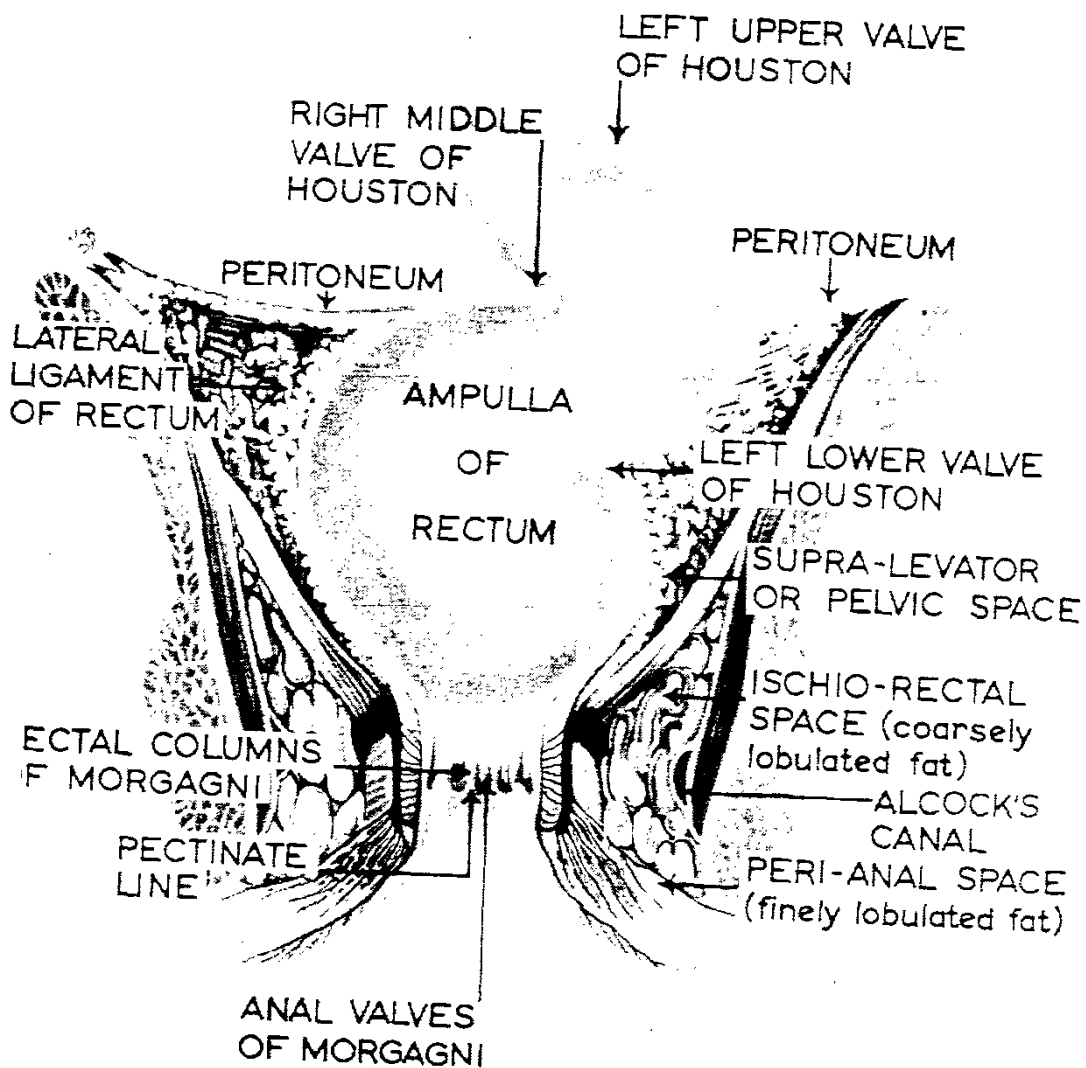


Fig. 1 Coronal Section of the pelvis and rectum showing the lateral curves and the valves of Houston. (Goligher., 1984).

of the anterior peritoneal reflection. A perforation below this level will not enter the peritoneal cavity, and this allows more aggressive local treatment of lesions below this valve than above. The function of these folds is intriguing. they were held by Houston to delay the passage of stool and by others to help distinguish flatus from feces (Ralph., 1988).

Structure : Fig. (2)

The upper rectum and sigmoid are of a similar and narrow caliber, but near its lower end, the rectum dilates into an ampulla, as do most ducts in the body when they approach their external opening. The taenia coli spread out to provide the rectum with a complete outer longitudinal muscular coat that is thicker anteriorly and posteriorly than laterally. The walls of the rectum are composed of the same layers as the colon. Immediately above its transition to the anal canal, the smooth muscle is reflected anteriorly to insert into the urogenital diaphragm and perineal body as the rectourethralis muscle and posteriorly to the coccyx as the rectococcygeus muscle. Both of these structures require division during mobilization of the rectum (Ralph., 1988).

The relation of the pelvic peritoneum to the rectum is of considerable surgical importance. Fig (3) The upper

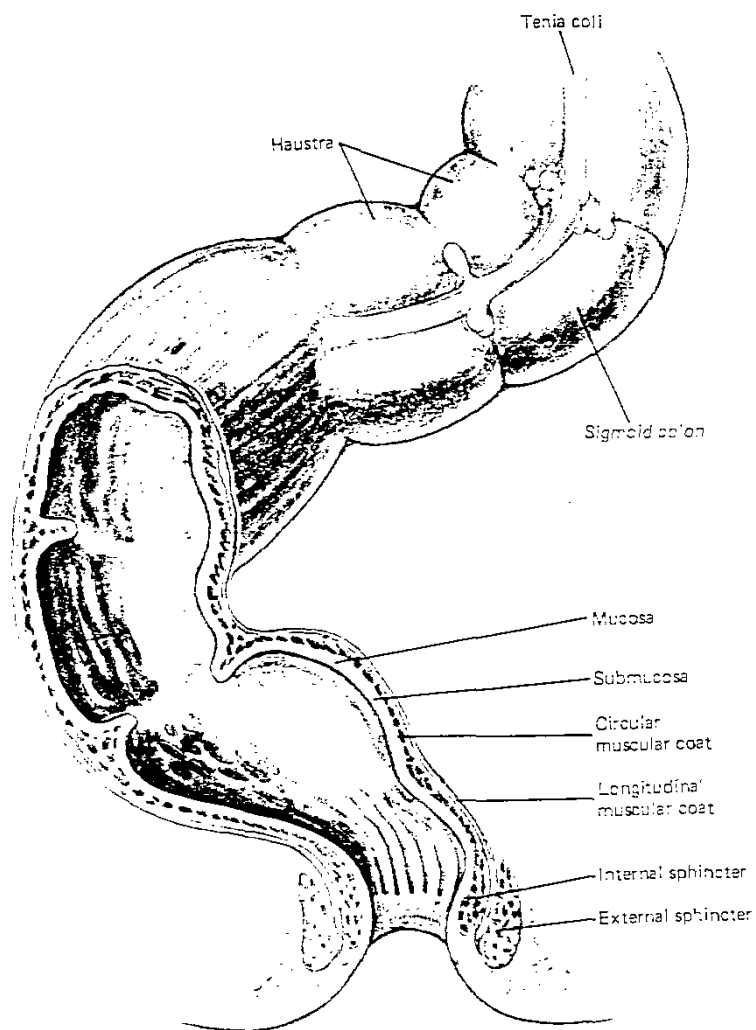


Fig. 2 Structure of the rectum and anus (Shwartz., 1988).

third or so of the rectum has a complete peritoneal investment except for a thin strip posteriorly where the peritoneum is reflected off it as the two leaves of the thick short mesorectum. As the rectum descends, the mesorectum becomes broader and shorter and the peritoneum sweeps off at the sides of the rectum until only the anterior aspect has a peritoneal coat which finally becomes reflected forwards at the bottom of the rectovesical or rectouterine pouch, leaving the lower third or so of the rectum without any peritoneal covering. In the upper rectum the peritoneum is closely applied to the underlying muscle coat, but this attachment becomes gradually looser lower down as a result of the interposition of a layer of fatty tissue. On the average the anterior peritoneal reflection lies about 8-9 cm from the perineal skin in the male and 5-8 cm in the female. In women with complete rectal prolapse Fig. (19) the rectovaginal pouch is abnormally deep and actually protrudes into the rectum and through the anus into the prolapse (Goligher., 1984).

The fascia of the rectum consists of loose areolar tissue surrounding the rectal venous plexus. Posteriorly, a sheet of fascia, more membranous in character, suspends the lower part of the ampulla to the hollow of the sacrum, it encloses the superior rectal vessels. It is known as the fascia of Waldeyer. Laterally, just above the pelvic

floor, the middle rectal artery and the branches of the pelvic plexuses are enclosed in a slight condensation of areolar tissue that is known to surgeons as the lateral ligament of the rectum. The fascia of Waldeyer, the lateral ligaments, the pelvic peritoneum and the vessels and most of all the pelvic floor combine to hold the rectum stable in its position (Last, 1985).

Anteriorly, the extraperitoneal part of the rectum is also covered with a layer of visceral pelvic fascia which extends from the anterior peritoneal reflection above to the superior fascia of the urogenital diaphragm (triangular ligament) below, and laterally becomes continuous with the front of the lateral ligament. It is known to surgeons as Denovillier's fascia (Goligher., 1984).

Relations of the rectum :

Posteriorly the rectum is related to the lower three sacral vertebrae, the coccyx, the median sacral vessels, the piriformis, the anterior rami of the lower three sacral and coccygeal nerves, the sympathetic trunk, the ganglion impar, the lower lateral sacral vessels and the coccygei and levators ani (Warwick & Williams, 1973).

Anteriorly, the relations differ in the sexes. These can be well appreciated by the examining finger.