DIFFERENT LINES IN TREATMENT OF PILES

AN ESSAY

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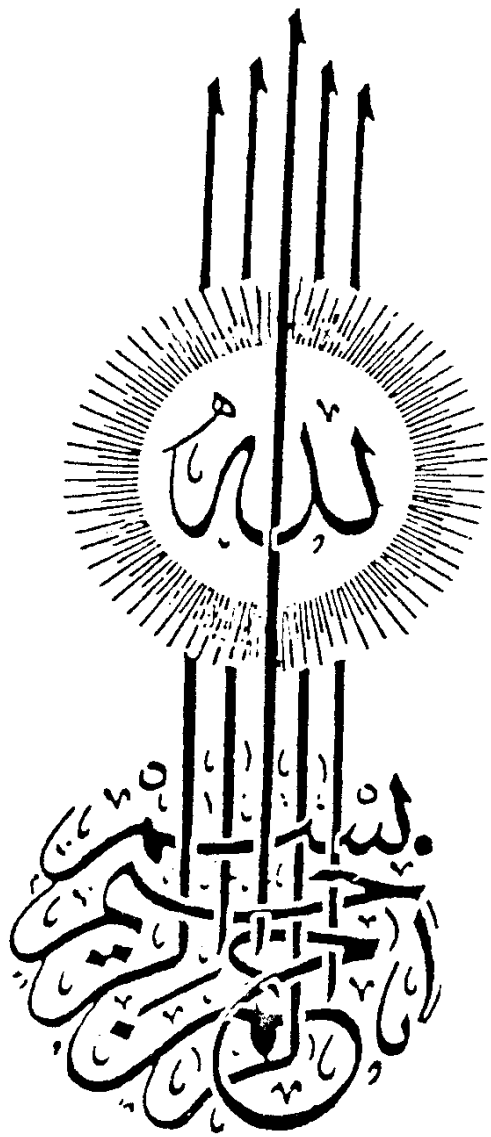

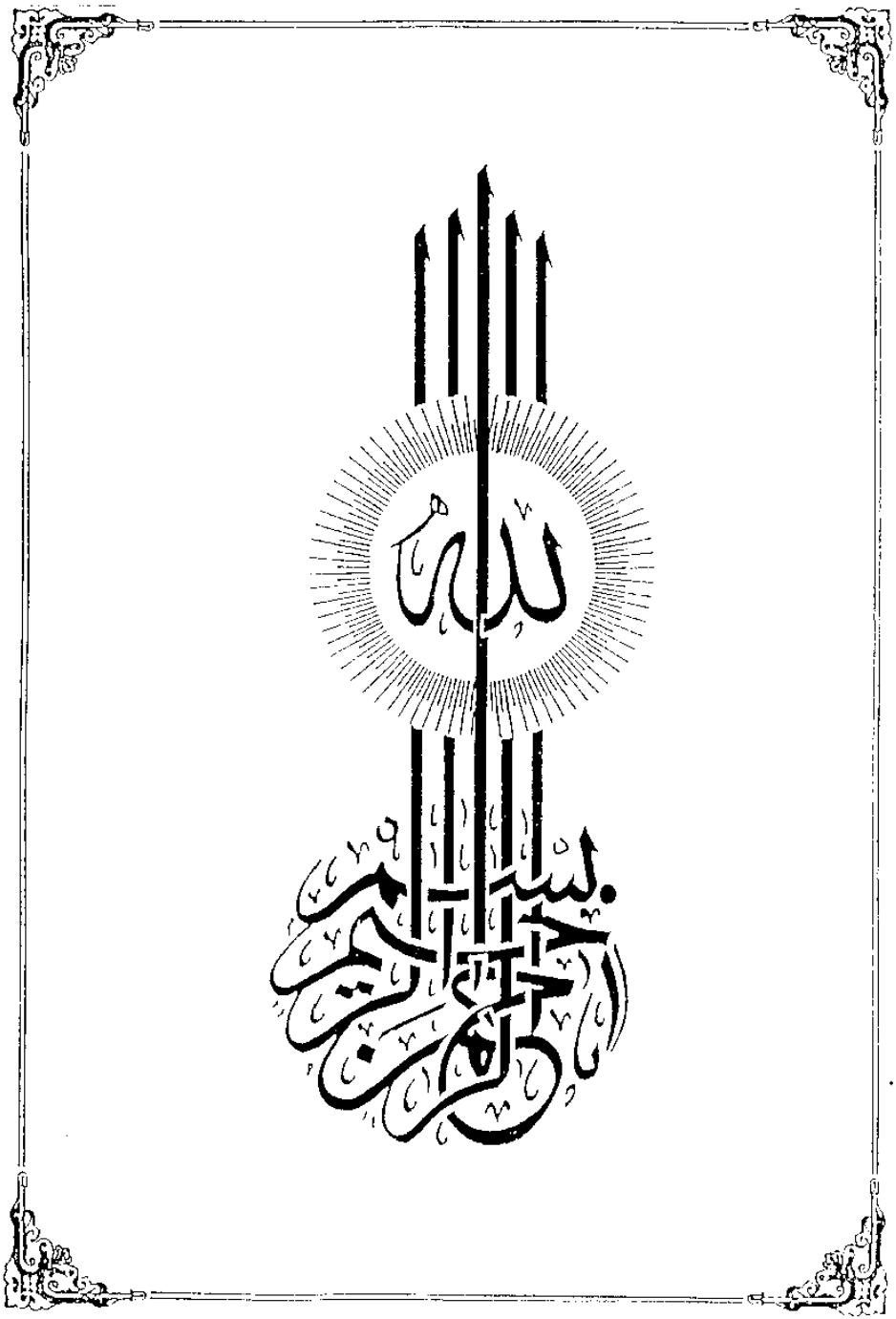

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I N D E X

INTRODUCTION

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Piles are certainly one of the commonest ailments that afflict mankind. It is difficult to obtain any accurate idea of their incidence, but clinical experience suggests that very many people of both sexes suffer from haemorrhoids and that even more perhaps have piles in a symptomless form. It is a frequent experience to find haemorrhoids on routine rectal examination in patients who have never had any complaint referable to them. The incidence of piles apparently increase with age and it seems likely that at least 50% of people over the age of 50 have some degree of haemorrhoid formation and piles are encountered in people of all ages, including occasionally young children. Men seem to be affected roughly twice as frequently as women (Goligher 1980).

The surgical treatment of piles was one of the earliest exercises in operative surgery and was practiced even in ancient Greece and Rome (Parks 1955).

It is important to realise that schemes and methods of treatment have not evolved logically but empirically.

Accounts of the available methods of treating haemorrhoids written in the last century show that many of the so-called new developments are nothing more than a rediscovery or resurgent popularity of methods known and used a hundred years ago.

For convenience the principles of surgical treatment of haemorrhoids can be classified under three headings- those designed to prevent mucosal prolapse through the anus, to correct anal outlet obstruction or spasm and to remove redundant tissues (Thomson 1981).

Anatomy of the anal canal

This short passage though only 1¼ inches long, is of the greatest surgical importance both because of its role in the mechanism of rectal contineence and it is prone to certain diseases.

The anal canal begins where the lower end of the ampulla of the rectum suddenly narrows, and it passes downwards and backwards to end at the anus. Its anterior wall is slightly shorter than its posterior wall, in the empty condition its lumen has the form of an anteroposterior longitudinal slit due to the tone of the anal sphincters.

It is related posteriorly to the cocyx with a certain amount of fibrous, fatty and muscular tissue intervening (the anococcygeal ligament). Laterally, there is the ischiorectal fossa on either side with its contained fat and the inferior haemorrhoidal vessels and nerves which cross it to enter the wall of the canal. Anteriorly, in the male, the canal is related to the central point of the perieneum, the bulb of the urethra and the posterior border of the urogenital diaphragm containing the

membranous urethra, in the female, the canal is related infront to the perineal body and to the lowest part of the posterior vaginal wall (Wilde1949).

The mucocutaneous lining of the anal canal consists of an upper mucosal and a lower cutaneous part, the junction of the two being marked by the line of the anal valves about ¾ inch from the anal orifice and opposite the middle of the junction of the middle and lower thirds of the internal sphincter, this level is also refereed to as the pectinate or dentate line which marks the junction of the postallantoic gut and the proctodeum, the valves themselves representing remnants of the proctodeal membrane. Johnson (1914) however, maintained that the junction of the ectodermal and endodermal parts of the anal canal is situated lower down at the lower border of the pecten. Above each anal valve is a little pit or pocket known as an anal sinus; or crypt or sinus of Morgagni. Above the pectinate line, the mucosa is thrown into 8-14 longitudinal folds, known as the rectal columns or columns of Morgagni, each adjacent two columns being connected below

at the pectinate line by an anal valve. The mucosa immediately above the valves is lined by an epithelium consisting of several layers of cuboidal cells, traced upwards these give way at a variable distance, usually about ¼-½ inch from the valves, to a single layer of columner cells. Milligan and Morgan (1937). Pointed out that there are colour changes in the lining anal mucosa when followed upwards from the pectinate line, for ½ inch or so, above the line the mucosa is a deep purple but above the anorectal ring it changes to the pink colour of rectal mucosa.

Below the pectinate line, the anal canal is lined with a modified skin devoid of hair and sebacious and sweat glands, and closely adherent to the underlying tissues, the lining of this part of the canal for about ½ inch below the anal valve apears thin, smooth, pale and stretched, this area is sometimes known as the pecten (Stroud, 1896); traced further inferiorly, the lining becomes thicker and just outside the anal orifice acquires the hair follicles, glands and other histological

features of normal skin (Goligher 1980).

The anal intermuscular glands or ducts were first discribed independntly by Chiai (1878), an excellent recent anatomical study of these structures with particular reference to their role in the pathogenesis of infection in the anal canal, is that of Parks (Parks, 1961), he described that there are apparently 4-8 of these glands in the normal anal canal as a rule, each has a direct opening into the apex or the anal crypt and occasionally 2 glands open into the same crypt, about half of the crypts in any canal have no glands communicating with them, traced outwards from its cryptal opening the average gland has a short tubular portion in the submucosa which quickly branches into a racemose structure of widely ramifying ducts, some glands appear to be confined entirely to the submucosa, but with two-thirds of them one or more branches enter the internal sphincter, and with one half branches cross this sphincter completely to reach the intersphincteric longitudinal layer though some of the terminal leculi have been described as penetrating the external sphincter as

well to reach the ischiorectal fossa, Parks (1961) found that in non of his specimens did the glands proceed beyond this longitudinal intermuscular spectum. The general direction of extension of the gland is outwards and downwards but practically never upwards above the level of the anal valves. The epithelium lining the glands is of stratified columner type, the glands are surrounded by lymphocytes in a form resembling lymphocytic follicles. (Sharyock and Rebell, 1943).

The surgical significance of the anal glands arises from the fact that they may provide an avenue of infection from the anal canal to the submucosa and intersphincteric spaces, they may also be the site of origin of an adenocarcinoma, as has been pointed out by Dukes and Galvin (1956).

The first serious study of the anatomy of the anal musculature from the surgical point of view was made by Milligan and Morgan (Milligan 1942; Milligan and Morgan; 1934; Morgan, 1936) whose description was widely accepted at one time. However, their original conception of the anatomy of this region has been shown to be incorrect in

several respects by the subsequent research in particular regarding the division of the external anal sphincter into three parts and regarding what Milligan and Morgan called the subcutaneous external sphincter which is really the lowest part of the internal sphincter (Morgan and Thompson 1956).

On histological sections of the anal canal, the internal sphincter shows a very striking structure, superiorly it is contineous with the circular muscle coat of the rectum, and inferiorly it ends with a well defined rounded edge ¼ to $\frac{1}{5}$ inch above the level of the anal orifice, and ½ to $\frac{1}{3}$ inch below the level of the anal valves.

the plain muscle fibres constituting the sphincter are grouped into discrete ellipitical bundles which in the upper part of the sphincter lie obliquely with their transverse axis running internally and downwards, this obliquity becomes progressively less as the internal sphincter is traced downwards so that in the lower part of the muscle bundles lie horizontally and some of the lower ones even incline slightly upwards.

The external anal sphincter extends farther downwards than the internal sphincter and the lowermost portion curves medially to occupy a position below and slightly lateral to the lower rounded edge of the internal sphincter and close to the skin of the anal orifice. Contrary to the account of Milligan and Morgan there is no suggestion on histological section of division of the external sphincter into three speparate parts, the muscle is one contineous sheet. However, the lowest or subcutaneous portion of it, which lie below, the internal sphincter does differ from the rest in that it is traversed by a fan-shaped expansion of the longitudinal muscle fibres of the anal canal which split it up into 8-12 discrete muscle bundles. At its upper end the external sphincter fuses with the puborectalis part of the levator ani muscle and it is quite impossible on histological section to say where one muscle ends and the other begins. Both muscles are, of course, made up of striped muscle fibres.

The main layer of congitudinal fibres in the anal canal is seen to lie between the internal and external