INTESTINAL POLYPOSIS: CLINICAL, PATHOLOGICAL AND OPERATIVE STUDIES

THESIS

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By

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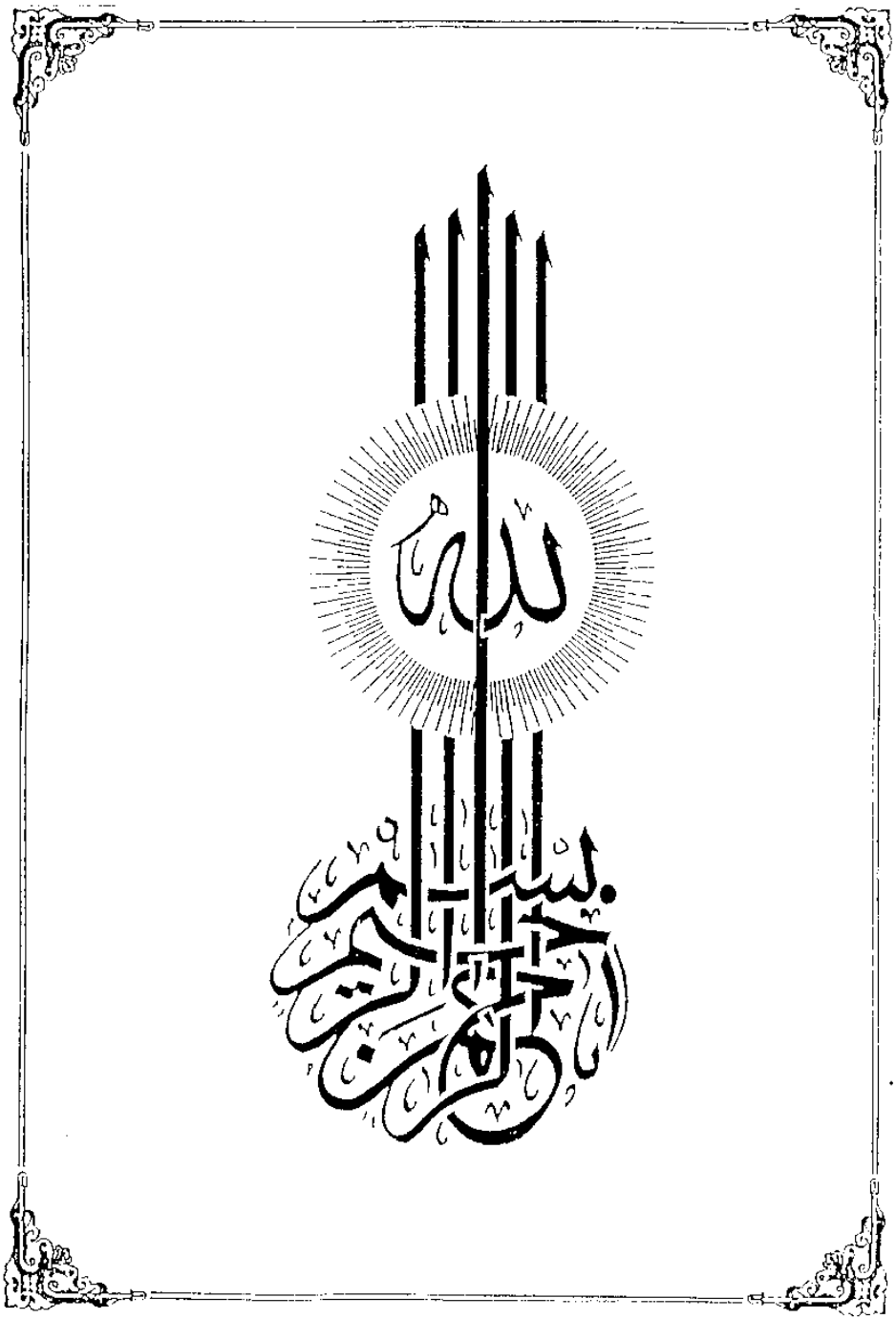

LIST OF ABBREVIATIONS

BE:	Barium enema.
CUC:	Chronic ulcerative colitis.
DCE:	Double contrast barium enema.
FPC:	Familial polyposis coli.
GIA:	Gastrointestinal autosuture apparatus (stapler).
GS:	Gardner's syndrome.
IAA:	Ileoanal anastomosis.
JPC:	Juvenile polyposis coli.
MF:	Mesenteric fibromatosis.
MNP:	Multiple neoplastic polyps (multiple adenomas).
PJS:	Peutz-Jegher's syndrome.
TP-IPAA:	Total proctocolectomy ileal pouch anal anastomosis.
TP-SIAA:	Total proctocolectomy straight ileoanal anastomosis.

CONTENTS

AIM OF THE WORK

The aims of this work were; to study the various types of colorectal polyps and polyposis with special attention to the malignant potential of each type, to define their commonest presentations and the associated extracolonic manifestations (if any) with each type, to determine the best method(s) for diagnosing such lesions and to discuss and evaluate the various lines of treatment of each type.

Introduction

INTRODUCTION

The word "polyp" has a different connotation to many observers. The derivation of the word does not provide a clue. It is derived from the greek word "polypous" (poly = many, pous = foot) (Webster, 1984). According to the standard and medical dictionaries a polyp is defined as a smooth projecting growth of hypertrophied mucous membrane (Webster, 1984), or more simply, as a morbid excrescence from a mucous membrane (Dorland, 1972). This broad meaning of the word has been modified considerably by many pathologists who apply a histologic description and consider polyps of the gastrointestinal tract to be synonymous with "adenomatous polyps", or what is better called tubular adenomas (Morson, 1976)). This latter limited connotation of course, excludes such lesions as the villous adenomas, tubulovillous adenomas, hyperplastic polyps and other types of polyps. This controversy about nomenclature and the wrong use of words had led to confusion and disagreement over the classification of gastrointestinal polyps, especially those of the large bowel (Welch and Heldberg, 1975).

Morson (1978) mentioned that the word polyp should not be used by itself as a histologic diagnosis and that it is only a clinical term or gross description of any circumscribed tumor or elevation that projects above the surface of surrounding normal mucous mebrane. Nichols and Glass (1985) defined the word more precisely as any localized elevated lesion arising from an epithelial surface.

From the numerous previous definitions, it can be concluded that for a lesion to be called polyp it should originate from the mucosal layer lining the gastrointestinal tract (or other body cavities). On the other hand, a "polypoid lesion" is defined as any circumscribed lesion that protrudes into the lumen of the gastrointestinal tract. This includes both; lesions arising from the mucosa and protruding into the lumen (i.e. polyps) and

submucosal or other tumors that push the overlying normal mucosa into the lumen of the bowel (e.g. lipomas, haemangiomas, carcinoids and leiyomyomas). Thus all polyps are polypoid lesions but not all polypoid lesions are polyps (Welch and Heldberg 1975).

Review of literature

HISTORICAL REVIEW

During the last 260 years a heterogenous mass of material has accumulated under the term "intestinal polyposis", and the classification of this material into separate entities began about ninety years ago and is still proceeding. The first report of a condition of multiple polyps in the large bowel is usually ascribed to Menzel (1721), and it is almost certain that the case he described was one of inflammatory polyposis. Another century was to elapse before further cases were reported (Wagner, 1832; Rokitansky, 1839; Lebert, 1861; Luschka, 1861). Most of these earlier cases were probably also inflammatory in origin.

Corvisart (1847) may have given the first record of a case of adenomatous polyposis and Chargelaigue (1859) probably gave the first definite account of the disease. Woodward (1881) divided polyposis cases into primary polyposis, that is to say adenomatous polyposis, and secondary polyposis which followed inflammation of the intestine. The distinction was more firmly established when a familial tendency was observed in the primary type of polyposis. Cripps (1882) first recorded polyposis coli in two members of the same family who were brother and sister. This was followed by other reports of the familial nature of the disease (Bickersteth, 1890; Niemack 1902 & Zahlmann, 1903), which was recognized by the more general use of the term "familial polyposis coli". The association of the disease with cancer of the large intestine was first mentioned by Handford (1890), and during the next thirty years both the precancerous nature and the heriditary character of the lesion had been firmly established.

By the beginning of this century there was a general tendency to divide polyposis cases into familial and nonfamilial types, these corresponding approximately with familial adenomatosis and inflammatory polyposis respectively. Although most of the nonfamilial conditions appeared to be sequelae to previous inflammation of the bowel.

Other conditions formerly believed to be polyposis coli have also been recognized as different lesions. The first of these was the Peutz- Jeghers syndrome (Peutz 1921 and Jegher and his collaegues 1949). The intestinal polyps in this syndrome were found to be hamartomatous. Recently, it has been found that some cases which were considered as adenomatosis in the past were, in fact, not adenomatous in nature, but are mucous retention polyps (Juvenile polyps). These tumors like the Peutz-Jeghers polyps, are hamartomatous in character (Morson, 1962).

The recognition of these two types of hamartomatous polyposis emphasized the necessity to base the diagnosis of any case of polyposis on histology whenever possible. This policy lead to the recognition of two more of the nonadenomatous polyposis, namely; multiple hyperplastic polyps, (Westhues, 1934) or, as they have more recently been termed "metaplastic" polyps (Morson, 1962). And Benign lymphoid hyperplasia which may give rise to intestinal polyps resembling multiple adenomatous polyposis.

Hutchinson in 1928, working in the Egyptian Nile Delta, was the first one to describe polyps associated with schistosomiasis of the large bowel. In the same year, El Afifi described, for the first time, the radiological picture of intestinal schistosomiasis. He showed that radiological diagnosis of these cases is mainly concerned with the diagnosis of bilharzial polyposis and colonic masses.

Nowadays, schistosomiasis is still a major health problem that has been estimated to affect 150 million people (Wright, 1968). Three species of the parasite are known, these are; S. mansoni, S. haematobium and S. japonicum. The first two are endemic in Egypt, Central and Northern Africa, and the Middle East. S. mansoni is also endemic in South America and Carebbean countries. S. japonicum is endemic in Japan, China and other countries of the Far East (Tan, 1978 and Shindo, 1976). A fourth type of schistosome, S. mekongi, was recently described, affecting South-East Asian refuges in the United States of America

(Dunn and Kamel, 1981). The four species can affect the large bowel with the possibility of formation of polyposis in the colon and rectum.

After the introduction of the fiberoptic colonoscopy in the last decade, helped by the advance in the science of surgical pathology, the diagnosis of the different types of polyposis became more accurate and much easier than before.

ANATOMY OF THE COLON, RECTUM AND ANAL CANAL

Anatomy of the colon:

The colon extends from the end of the ileum to the anus, being about 135 cm. long, (ranging from 120 to 200 cm). Its calibre is greatest at its commencement at the caecum, and gradually diminihes as it is traced distally, but again becomes more dilated in the lowermost part of the rectum just above the contracted anal canal (Goligher, 1981).

The outer longitudinal muscle coat is concentrated into three narrow bands or *taeniae*, relatively shorter than the bowel itself, so that the latter is puckered with the production of the typical haustrations or sacculations. The three taeniae commence at the base of the appendix which has a complete longitudinal coat. In the distal sigmoid they eventually coalesce to provide a complete longitudinal muscle coat for the rectum, though sometimes the process of fusion is complete before the rectum is reached.

Between the taeniae the colonic wall is extremely thin and this accounts for the great capacity of this part of the bowel to undergo distention when obstructed, the caecum being particularly notable in this respect (Last, 1978). Bulbous pouches of peritoneum, distended with fat, project in places from the serous coat. These are the *appendices epiploicae*.They are most numerous along the taeniae and relatively flat in the proximal colon but elongated and pedunculated in the sigmoid colon, this fact being an important distinguishing feature of that segment.

It is not difficult to identify a loop of colon and distinguish it from the small intestine during surgery. The surgeon usually looks for: The taeniae coli, the haustral sacculations of the wall of the colon and the appendices epiploicae. It should be added that the attachment of the greater omentum to the transverse colon is an important landmark in identifying that structure, and that generally the colon is of a whiter color than the small intestine (McVay, 1984).

Divisions of the colon:

Embryologically and to some degree, functionally, the colon may be devided into two parts: The first is that portion proximal to the midtransverse colon in common with the small intestine, springs from the embryonal midgut and receives its arterial blood supply from the superior mesenteric artery. Like the small intestine it has an important absorptive function. The second part is the distal half of the colon (embryonal hind gut) which functions as a storage unit having no essential digestive or absorptive function and is supplied by the inferior mesenteric artery (Bockus, 1946).

Anatomically the colon is devided into:

- The caecum and the vermiform appendix.
- The colon proper, formed of the ascending, transverse, descending and sigmoid segments.
- The rectum and anal canal.

The Caecum And Vermiform Appendix: The caecum is that part of the large intestine that is located below a transverse line just above the ileocaecal valve and into which opens the ileum, the vermiform appendix, and the ascending colon. It is usually located in the right iliac fossa but may be found elsewhere in persons with malrotation of the intestinal tract or situs inversus. It averages 6.25 cm. in length and 7.5 cm. in width. The caecum is covered with peritoneum over the front and on both sides. The serous coat continues up behind it and is reflected downwards to the floor of the right iliac fossa (Last, 1978). Anson and McVay have distinguished six types and several subtypes of the peritoneal reflection of the caecum ranging from a caecum with its entire posterior surface attached to the posterior abdominal wall to a caecum which is wholy unattached (McVay, 1984).