CIOBRATIVE COLITIN



ULCERATIVE COLITIS

HARRY E. BACON

B.S., M.D., Sc.D., LL.D., F.A.C.S., F.A.P.S.

Professor and Head of Department of Proctology, Temple University Medical Center, Philadelphia, Pa.; President, American Board of Proctology; Diplomate, American Board of Surgery and American Board of Proctology; Honorary Fellow: Royal Society of Medicine, Philippine College of Surgeons, International College of Surgeons, Brazilian College of Surgeons, Japanese College of Surgeons

Foreword by

ALTON OCHSNER, B.A., M.D., SC.D., F.A.C.S., F.A.P.S. (Hon.)

Professor of Surgery, Tulane University School of Medicine; Director of Surgery, Ochsner Clinic and Ochsner Foundation Hospital, New Orleans, La.; Founder Member, American Board of Surgery; Past President, American College of Surgeons and American Cancer Society

With Contributions by PAUL T. CARROLL, B.S., M.D.

Former Resident in Proctology, Temple University Medical Center, Philadelphia, Pa.

Chapter on Anesthesia by LEROY W. KRUMPERMAN, M.D.

Professor and Head of Department of Anesthesiology, Temple University Medical Genter, Philadelphia, Pa.; Diplomate, American Board of Anesthesiology

184 ILLUSTRATIONS



J. B. LIPPINCOTT COMPANY

Philadelphia and Montreal

ULCERATIVE COLITIS







(Top, left) Placement of ileostomy determined by intersection of lines drawn from 9th rib to symphysis and from right anterior iliac spine to umbilicus.

(Top, right) Appearance of ileostomy on 10th day prior to discharge.

(Bottom) Specimen removed by single-stage ileocoloproctectomy.

Copyright © 1958, by J. B. Lippincott Company

This book is fully protected by copyright and, with the exception of brief extracts for review, no part of it may be reproduced in any form without the written permission of the publishers.

Distributed in Great Britain by Pitman Medical Publishing Co., Limited, London

Library of Congress Catalog Card No. 57-11336

Printed in the United States of America

To ÁLTON ÖCHSNER

Distinguished surgeon, teacher, investigator, whose vision in establishing and developing a department of colon and rectal surgery has proved to be an expanding influence, bringing increased knowledge and enhanced skills to those who serve and relief from suffering to those who are served.

Foreword

There are few conditions that have presented greater problems in therapy and more controversy than chronic ulcerative colitis. As succinctly stated by Dr. Bacon: "The fact must be recognized that there is no specific cause and, at the present time, no specific nonsurgical form of treatment." In view of the complete ignorance concerning the etiologic factors involved in the production of chronic ulcerative colitis, it is understandable that there is a lack of uniformity concerning therapy.

Dr. Bacon has made a distinct contribution to a rational understanding of chronic ulcerative colitis. The subject is considered from every possible angle, with an extensive and thorough evaluation of the various theories concerning etiology and a detailed description of the pathologic lesion associated with ulcerative colitis. The clinical picture of chronic ulcerative colitis and the methods of diagnosis, including a complete consideration of differential diagnostic are thoroughly discussed. problems, Complications of ulcerative colitis, which from the standpoint of diagnosis are extremely important, are very carefully considered, and recommendations are made concerning their prevention and correction.

Unquestionably, psychiatric disturbances and emotional instability are prominent factors in many patients with chronic ulcerative colitis; probably it is for these reasons that many physicians believe psychiatric treatment to be all that is necessary in the care of these unfortunate individuals. Though emotional instability can never be disregarded, the organic phases of chronic ulcerative colitis are equally as impor-

tant as the emotional factors, if not more so. Regarding this, Dr. Bacon says: "The psychiatrist should not be permitted to imprison a patient in a special department or even compartment for hourly intervals, three to five times a week for months or even for years, while the patient suffers continuing, intractable diarrhea or pseudopolyps abound, recurrent abscesses develop, fistulas drain and carcinoma tends to develop."

Because many cases of chronic ulcerative colitis can be treated adequately by conservative measures and because many physicians have the misconception that ulcerative colitis should be treated only by nonsurgical measures, Dr. Bacon discusses with considerable detail the nonsurgical treatment. He states: "There is perhaps no illness the treatment of which has so completely defied all efforts at standardization as nonspecific colitis. Indeed, it is this nonconformity and departure from the usual among diseases that has so greatly engendered and nourished the many biases and misconceptions that even today prevail in no small number." The nonsurgical methods of therapy are considered, presented and carefully evaluated in an extremely complete manner as only one with such extensive experience could do. Dr. Bacon's experience embraces over 400 cases of chronic ulcerative colitis in a period of 16 years. He emphasizes that approximately 60 per cent of patients can be fairly well controlled by general medical care, but that they must be followed carefully because of the danger of recurrence and exacerbation.

Unfortunately, in too many cases, progression to the severe form of chronic ulcerative colitis is permitted by continu-

ation of nonsurgical treatment in patients who do not respond to the therapy, and, according to Dr. Bacon, surgery is required in from 20 to 30 per cent of all cases. To quote Dr. Bacon: "The danger of procrastination to these patients who do not respond to a conservative regimen is all too evident. In fact, if we are to see substantial reduction in morbidity and mortality, counsel with the surgeon, whether or not operation is elected, should be obtained early. Even before diagnostic studies are complete, the surgeon should have the liberty of supervising all decisions." The indications and the contraindications for surgical intervention are carefully considered and evaluated. The various operative procedures employed, colectomy and ileostomy, are discussed, a critical analysis of the results obtained from each procedure being given. Colectomy is employed at times as a life-saving procedure in acute fulminating toxic ulcerative colitis. Surgical procedures are used to correct and prevent disabling and fatal complications, and they are used as well in patients in whom the lesion becomes intractable. Technics of the various surgical procedures are excellently described. Although the author decries procrastination in the use of surgical procedures when they are indicated, he is certainly not "knife happy," as shown by the fact that of the 440 cases with chronic ulcerative colitis treated by him and his colleagues, only 108 patients had colectomies. Undoubtedly, the cases seen by the author and his associates represent the most severe types of chronic ulcerative colitis. Because of Dr. Bacon's tremendous experience in the treatment of bowel conditions, a large number of cases are referred to him, and, therefore, the cases seen by him and his group are much more severe than those seen by most surgeons.

A chapter, written by Dr. LeRoy W. Krumperman, is devoted to anesthetic management in surgery for ulcerative colitis. There is also an excellent chapter on preoperative and postoperative treatment of patients with chronic ulcerative colitis.

Dr. Bacon's contribution on chronic ulcerative colitis is the most complete consideration of the subject that has ever been prepared. It is so well done and so authoritative that physicians who might come in contact with the disease cannot afford to be without the book. The pathologist, the internist, the gastroenterologist, even the pediatrician (because the disease does occur, although infrequently, in patients under 15 years of age) and the surgeon need this monograph in their libraries. There is no other place where so much factual information and critical evaluation of chronic ulcerative colitis can be obtained so readilv and so easilv.

ALTON OCHSNER

Preface

Nonspecific ulcerative colitis is a debilitating and devastating disease, the many facets of which often are viewed with little concern. In fact, there is probably no other clinical entity in which the extensiveness is so frequently undetermined, the ramifications so definitely unappreciated and the treatment so often futile. While the disease in its incipient form generally responds to conservative measures, it is in its more severe manifestations, limited to approximately 20 to 30 per cent, that surgery is required, yet so belatedly instituted.

The clinical problem of nonspecific colitis is one of magnitude and infinite complexity that has challenged the acumen and skills of the medical profession for decades. The disease has been the testing ground of well-based as well as half-hatched theories, and the patients have been subjected to clinical methods not thoroughly thought through. More unfortunate is the fact that these sick have been the birds that have been batted back and forth across the net of argument in the clinical game of badminton. On one side of the net have stood those clinicians who obstinately persist in medical treatment when all signs point to failure and deterioration. On the other side is the psychiatric fraternity, many members of which display an unenlightened propensity to toss all colitis patients into an unqualified psychotic group with an unchastened disregard of common sense and pathologic facts. Is it any wonder that pseudopolyps abound, cancer develops, abscesses and fistulas appear, ileal invasion progresses and hepatic as well as pancreatic disease becomes manifest? This is a situation fraught with disaster for the patient, and

the tables in the following text lend support to this statement.

From the welter of theory and practice certain facts emerge—facts that one would suppose even the narrowest mind could not discount: procrastination spells doom for the patient; the high rate of cancer is more than coincidental; organic manifestations differ from functional syndromes; through surgery complete rehabilitation can be obtained in over 90 per cent of cases and with low mortality and decreased morbidity.

The mortality rate would drop materially if clinicians were quicker and more willing to recognize the line where their methods no longer benefit the patient, where colectomy could save and rehabilitate many who now reach the operating table too advanced for salvage either for life or for the resumption of the useful duties of the living. Such clinical procrastination dooms the patient, not the physician. Many psychiatrists rate criticism because they assume an unjustified authority over the life and being of these patients, often isolating them from access to the gastroenterologist and the surgeon, in complete disregard of organic lesions that, for want of surgical care, continue an unobstructed course of deterioration.

In the past, any type of surgical intervention ran the gamut of criticism, perhaps rightly so. Largely because patients were referred when nearly moribund, the operative mortality was extremely high and paralleled closely the mortality from a medical regimen. Many who were fortunate enough to survive their ileostomy required repeated hospitalizations for revisions; those who submitted to segmental colectomy usually experienced protracted morbidity, and many who had

not been colectomized developed malignancy. A new era was initiated through the advocacy of colectomy by such pioneers as Cave, Strauss, Lahey and Stone. Particularly through refinements in technic, improvements in anesthetic management, enhanced knowledge of biochemistry and more exacting preoperative and postoperative care, surgical extirpation is being performed in two stages and even in one stage, and patients are able to return to their former work, raise families and serve their community as useful citizens.

There must be a middle ground on which the several branches of medicine can meet in the interest of patients afflicted with this disorganizing disease. It is for such co-ordination of thought and effort that the author makes this plea. To forget oneself in the patient is the highest ethic of the physician-forget a theory, forget the "perhaps" of another therapeutic idea that will prove to be fruitless, forget a personal failure that carries no blame once one has done all that is possible, to remember that no physician is God and that where one man fails because of the peculiarity of a case, another, given the chance in time, may be more fortunate, again because of the same peculiarity. By pooling opinions, experience and skills in a spirit of humility the ultimate good for these patients can be accomplished.

HARRY E. BACON

Acknowledgments

The author wishes to express his appreciation to all those who were so generous with their time and skill during the preparation of this monograph. During the original writing, our then Senior Resident in Proctology, Dr. Paul T. Carroll, rendered invaluable service. For a period of 3 months he reviewed all available literature on this subject. He prepared many case reports, compiled tables, collected the material on steroids and accumulated all data pertinent to the psychiatric aspects of ulcerative colitis. Dr. Carroll was charged with the responsibility of planning the layout of the photographs, and he served as liaison agent between the Departments of Pathology and Photomicrography. In addition, he shared materially the burden of working with the medical artists—a task which, although pleasant, is often arduous. Dr. LeRoy W. Krumperman, Professor of Anesthesiology at Temple University Medical School, is particularly well qualified to discuss the anesthesiologic management with reference to the technic of epidural block which we have found to be ideal for these patients.

The writer is indebted to Mr. Melford D. Diedrick, Director of Medical Illustration at the University of Buffalo, to Mr. Yun Yong, Head of the Department of Medical Art at Temple University Medical Center, and to Tetsuo Yajima, Head of the Department of Medical Art at the University of Chiba, Japan, for the excellence of their illustrative material. A large measure of credit must be accorded

to Mr. William J. Taylor, Head of the Department of Photography at Temple University Medical Center, for permission to use his prints and photomicrographs.

Without the able assistance of Miss Lucile Grebenc, whose editorial experience and skill have added materially to the completion of this monograph, the preparation of this volume for publication would have been protracted. The galley proof was read with meticulous care by our former Chief Resident in Proctology, Dr. Robert A. McGregor, whose suggestions have been helpful. Particular attention should be accorded to our present Chief Resident, Dr. T. B. Myers, who read the page proof.

Expressions of gratitude go to my secretaries—Miss Charlotte Braun, Miss Irene Engard, Mrs. C. Hammond and Miss J. Smeby—for patiently typing the manuscript through 14 rewritings; to Mrs. E. Mandelbaum for biometric calculations and to Miss Alberta Dill for checking the bibliographic references.

My warmest thanks go to my wife, Althea Perot Bacon, whose affection, understanding and wise counsel during the preparation of this monograph have been a constant source of inspiration and in no small measure lightened the grim hours of nightly toil and transformed them into hours of pleasant endeavor.

Finally, to the publishers, J. B. Lippincott Company, the author wishes to express his thanks for their counsel, cooperation and patience.

Contents

1.	GENERAL CONSIDERATIONS—SCOPE	OF	STUI	OY.		,			•			•		1
	Synonyms								•		•			1
	Definition		. 1		e 18	1 9								1
	History								•					1
	Incidence	*		a .		a .								3
	Familial		*									*		3
	Age											*:		3
	Sex and Race		ik i											8
	Location and Distribution of	Ethe	Di	seas	e					×	i.			8
	Personal Series	v										*		9
	Estimated Site of Origin .								·				•	9
	Classification and Course .		let s						ž.		žii.			10
														12
2.	ETIOLOGY	è	*							•		•	•	12
	Predisposing Factors									·	•			12
	Infection		(*)					٠		•	٠	ř		12
	Bacterial Infection	*		ė		•	•	•	*	٠	•		*	15
	Parasitic Infection			*		٠	*	•				*	×	
	Viruses				ě	٠	×	ř	٠			*		16
	Fungi	*						*	*	ž	(e)	ė	Į.	16
	Allergy		*								*	ě		16
	Enzymes	ž.				4				1	•	*		16
	Lysozyme					ē				2	×		•	18
	Metabolic Factors			*:		•		×		*)¥!	1	ır.	19
	Neurogenic Factors			×							*			19
	Autonomic Nervous System	×			¥	6							×	19
	Myenteric Plexus	(4)								*				19
	Collagen Hypothesis			*		•	*	×	(v)	4	*	*	*	22
	Psychogenic Factors					**					٠			23
	Causes of Exacerbation				•				4					24
	Upper Respiratory Infection	is		N.				ž.						24
	Emotional Disturbances .						**				×		*II	24
	Improper Dietary Habits .												181	26
	Bowel Irritants								4	4	×	,		26
	Pregnancy	:*:											4	26
	Nutritional Deficiencies .		v .											27
	Miscellaneous													27
														31
3.	Pathology			•	*			٠	*		*	•		
	Clinical Pathology							•			*	٠		31
	Proctosigmoidoscopy						•	•	•	*		*:		31
	Inspection of Anal and Peria	ınal	Reg	gion		٠	٠	*	×	*	×	*		3.9
	Laparotomy						×	¥	*	٠)E	•	ř	37
	Gross Pathology							1	•	*		*	*	37
	Ileitis			3	÷						•		*:	38

	\sim 1 1
XIV	Contents

3.	Pathology (Continued)								
	Gross Pathology (Continued)								
	Jejunitis			ž.	*			\times	41
	Stricture								41
	Polypoid Hyperplasia or Pseudopolyposis .		×.	4		*			42
	Microscopic Pathology								43
	Healing								45
	Treating								48
4.	ULCERATIVE COLITIS, PSEUDOPOLYPOSIS, CARCINOMA		•		•	•		•	48
	Polypoid Hyperplasia-Pseudopolyposis	•		*	•			•	51
	Incidence			٠	٠	•		•	51
	Age Incidence	•	•	٠		•	•		53
	Location	•	•	*		•		1	53
	Pseudopolyposis and Carcinoma			*		•			55
	Relationship of Carcinoma to Ulcerative Coli	tis		*	•	×	•	•	
	Variation in Statistical Data							٠	55
	Type of Tumor					1	•		60
	Grade of Tumor					•			60
	Multiplicity						*		61
	Survival in Ulcerative Colitis with Carcinoma		×						61
	Development of Carcinoma Following Ileostomy		¥	•	*	ž			67
	Colectomy for Polyposis in Ulcerative Colitis				×				70
	Summary							•	70
-	Symptoms								73
5.	SYMPTOMS	٠		•					73
	General Aspects		on .		•	,			75
	Prodromal Symptoms		(4)						75
	Diarrhea		•	1		•			75
	Rectal Discharges	*		ě	,		•		76
	Pain		c	×	*				76
	Perianal Pain	X	•		*		٠		77
	Fever	•	*	1				٠	77
	Neuropsychiatric Aspects			٠	*			•	
	Neurologic	٠	٠			•	•		77
	Psychiatric	•	*		*	*	•		77
6.	Diagnosis			×		*			80
٠.	General Appearance and Examination					141	٠		80
	Digital Examination							4	81
	Proctosigmoidoscopic Examination				,				82
	Acute Phase				×				82
	Chronic Phase								83
	Roentgenographic Examination		1		100				85
	Opaque Enema Contrast Study								87
	Roentgenography of the Chest			•					91
	Laboratory Procedures Employed in Diagnosis						,		91
	Examination of the Feces	,	*		٠			•	91
			*	*	•				91
	Hematologic Studies					•		*	93
	Urinalysis		.*:		*	*		•	93
	Gastric Analysis						•	1	93
	Metabolic Changes			*					90

								Contents			•	X
												93
7. DIFFERENTIAL DIAGNOSIS						*	*		*		•	9.
Regional Ileitis		•	•	•							٠	9.
Pseudomembranous Enterocolitis					*	*	•	*		**	*	
Shigellosis			*.		(*)		٠			•	•	9
Amebic Colitis						•	${\bf x}_{i}$	*		8	•	10
Tuberculous Colitis	•		•							•	٠	10
Ulcerative Tuberculosis	e.		*	×								10
Hyperplastic Tuberculosis .		181					*					10
Diverticulitis		*		II+C								10
Lymphogranuloma Venereum .								¥.				10
Multiple Polyposis												10
Schistosomiasis	•		.,•,			551						10
Radiation Proctitis							100					10
Radiation Proctitis	*		•	•		100		•			•	10
8. Complications												11
Incidence							Û					11
Rectal and Colonic Complications			*	•								11
Passiden alunesis					1741		•		30			11
Pseudopolyposis	×			1.					14)	•	*	11
					•				*			11
Anorectal Abscess and Fistula						*	*		*		1	11
Anal Ulcer or Fissure	٠		•			*	*	•	Œ	٠	*	
Anal Stenosis	*	*	*	*	*				*	*	*	11
Anal Incontinence	ž		*	*	*	×	٠				4	11
Hemorrhoids		:*	:•/	÷	*	×		*	×			1 1
Colonic Fistulas				100						*		11
Internal Fistulas	£	*		\mathbf{x}	9	×	9		30			11
Ileitis	į.		*		*1	6.		,				11
Jejunitis		1.0						÷		36		12
Stricture of the Rectum and the									191			12
Postoperative Bowel Contracture	2	14										12
Obstruction						2		ĵ.				12
Perforation							- 101					12
Perforation of the Ileum												12
Hemorrhage												12
										•		12
Systemic Complications		141					*	•		*	•	12
Nutritional Deficiency		20	٠	+	*			•		•		
Skin Lesions	•	•		•	*	*			*			12
Arthritis		161			*	*			*	*	*	12
Hepatitis	Tel.	×11	*	\mathcal{A}_{1}		161		*	*	*	*	12
Hepatic Abscess								18		*	100	13
Splenomegaly		*			,							1.9
Oral and Gastric Complications	÷		*	×	100		*			•	*	13
Stomatitis				ž.					*			13
Peptic Ulcer	Let								×			13
Pancreatitis						v.						13
Miscellaneous Complications .		-	2		100		- 0	1	-		12	13
Andermited Compileations					1.0		1.0				•	
9. Ulcerative Colitis Associated with What Effect Does Pregnancy Bear						F I I	lcer	ativ	e C	olit	is?	

9.	ULCERATIVE COLITIS ASSOCIATED WITH P	REG	NAN	CY	(Co	ntir	ıue	d)				139
	What Effect Has Ulcerative Colitis or	ı Pr	egn	anc	y?	٠					·	159
	Should Interruption of Pregnancy Be	Cor	isid	erec	Di	ırın	g ti	ie C	ou	rse	OL	1.40
	Ulcerative Colitis?											140
	Mortality, Morbidity and Heostomy		٠.	*		¥	٠				*	140
	How Should Pregnancy Be Managed 1	Follo	owi	ng I	leos	ton	ıy,	Lot	al (Jol€	.C-	
	tomy and Protectomy?	•			¥			÷	3	•	*	141
	Summary	*	ž				*:	¥	•	*	\times	145
10.	Nonsurgical Treatment											147
	Rest											148
	Food and Diet											149
	Parenteral Administration of Fluids		,			,					•	151
	Vitamins					¥.	8	ž	*	*	4	154
	Transfusions of Blood and Blood Der	ivat	ives		*		· s	×	×		*	155
	Drugs				141		٠.		*		*	156
	Sulfonamides	•	,			,						156
	Antibiotic Agents					ě		ř		*		157
	Steroids											160
	Antilysozyme Agents			,			*				ī	175
	Stomach and Intestinal Extracts .											176
	Antihistaminics				(*)	,		×			÷	176
	Thiouracil Compounds				: 41				×			177
	Vaccines and Sera		,			¥						177
	Irrigations, Enemas and Instillations											177
	Oxygen Therapy						v					177
	Artificial Fever Therapy	-										177
	Psychotherapy in Ulcerative Colitis											178
	rsychotherapy in electronic control			-								
П.	SURGICAL TREATMENT		,	ě		÷	•	*	*		•	190
	Part 1: Indications for Surgery											
	General Considerations											190
	Indications for Surgery											191
	Acute Fulminating or Toxic Ulce	rati	ve	Col	itis					Ī		191
	Chronic Ulcerative Colitis of Mod	erat	e S	evei	itv					-		197
	Complications as Indications .											199
	Segmental Ulcerative Colitis											209
	segmental electative contis	•	•			•	•		*	*	•	200
	Part 2: Ileostomy											
	,											011
	History	•	*	[•]	*		•	*	٠	×	•	211
	Indications for Ileostomy							•		•	•	213
	Requirements for Satisfactory Ileosto								•		•	213
	Types of Ileostomy					•		*	•	*	•	214
	Selection of Site for Ileostomy .										•	215
	Circular Stab Wound Incision .											216
	Site of Ileostomy in Relation to Ex											217
	Length and Diameter of Heostomy									•		200
	ing					ne:			*			217

Surgical Treatment (Continued)					
Part 2: Heostomy (Continued)					
Requirements for Satisfactory Heostomy (Continued)					
Suture Material and Its Placement	(4)		*		100
Single-Barrel, Terminal or End Ileostomy	$\langle \hat{x} \rangle$	×	4		
Technic of Operation		÷	\times	*	*
Fashioning the Heostomy	582	*			•
Immediate Postoperative Management	(*)		•		
Ileostomy Dysfunction	2	×			
Complications Following Ileostomy Alone		*	ž.	*	
Obstruction	÷	*	è	•	
Fluid and Electrolyte Balance	*				*
Prolapse of the Ileostomy					
Fistula Formation .				*	
Perforation of the Ileum			£	•	*
Retraction of the Ileostomy					·
Para-Ileostomy Hernia	34		191		
Persistent Bleeding Following Ileostomy Alone				(4)	
Psychological Aspects Incident to Ileostomy					
Mortality from Ileostomy					
Posthospital Fate of Patients with Ileostomy Alone .					
The Ileostomy Bag					
Purpose					
Types of Appliances			Ŷ.		
Application and Removal of the Nonadherent Bag			Ĵ		
Application and Removal of Adherent Bag			·	-	
Skin Care					•
				*	•
Skin Protectants		•	•		•
Deodorants	*		•	•	•
The Patient and His Ileostomy Life		,	*	•	•
Diet	*	•			•
Economic Adjustment		*	*	•	•
Economic Adjustment	(*)	•	•		٠
The Heartenny Clubs				•	
The Ileostomy Clubs	•	*	٠	*	•
Marital and Sexual Adjustment	*	•	ě		
Intrahospital Instructions to the Patient	*				
Part 3: Vagotomy and Pelvic Neurectomy					
Vagotomy					
Conclusions					
Pelvic Neurectomy					
Conclusions		,			
Part 4: Radical Surgical Procedures					
Terminology					
Classification of Operations					
I Ileostomy Total Colectomy and Protectomy—					٠

xviii

11.	Surgical Treatment (Continued) Part 4: Radical Surgical Procedures (Continued) Classification of Operations (Continued)	
	II. Ileostomy and Subtotal Colectomy—First Stage; Abdomino- perineal Excision—Second Stage	272
	teetom, Time stage	284
	tomy—I stage	289
	VI. Subtotal Coloproctectomy with Transverse Colo-Anostomy	296 299
	VII. Total Coloproctectomy with Ileo-Anostomy and Preservation of the Sphincter Muscles—1- or 2-Stage	307
	Summary	308
	Part 5: Author's Statistics: Charts A to E	
	Chart B. 2-Stage Procedure: (1) Ileostomy, Total Colectomy; (2) Ab-	318
	dominoperineal Excision	319
	Total Colectomy, (3) Proctectomy; (C) (1) Ileostomy, (2) Right Hemicolectomy, (3) Left Hemicolectomy with	
	rioctectom)	321
	Chart D. 1-Stage Procedure: Total Colectomy with Ileosigmoidos- tomy, or Subtotal Colectomy with Ileotransverse Colos- tomy	320
	Chart E. 1-Stage Left Hemicolectomy and Proctectomy. (A) Left Hemicolectomy and Proctosigmoidostomy with Trans-	020
	plantation of Transverse Colon to Anus (Anal Colos-	
	tomy); (B) Abdominoperineal Proctosigmoidectomy	
	with Transplantation of Descending Colon to Anus	
	(Anal Colostomy); (C) Hemicolectomy and Proctectomy with End-Transverse Colostomy	321
19	COLECTOMY: MORTALITY, MORBIDITY, COMPLICATIONS, PROGNOSIS AND	021
14.	REHABILITATION	322
	Mortality Incident to Colectomy	322
	Cause of Death	323
		330
		330
		331
		$\frac{331}{333}$
		336
	,	338
	Fate of Remaining Rectal Segment Following Colectomy for Ulcera-	
	tive Colitis	339
	Long-term Survival and Rehabilitation Incident to Colectomy	340