# Contents

1. History of Surgery 1
The Atharva Veda Lists the Eight Divisions of Ayurveda 1

2. Embryology 10
Objectives of Studying Embryology 10
Clinical Correlation 11

3. Anatomy 16
Rectum 16
Clinical Significance of Third Sacral Vertebra 18
Endoscopic and Surgical Significance of Rectum 18
Vascular Supply of Rectum and Anal Canal 23
The Venous Drainage of the Rectum 25
The Lymphatics 27
The Nerve Supply to the Anorectal Region 27
The Sphincters 30
The Corrugator Cutis Ani Muscle 32
The Internal Sphincter 33
The Longitudinal Muscle 34
Milligan's Septum 34
The Anorectal Muscle Ring 35
The Anococcygeal Ligament or Body 36
The Levator Ani Muscle 36
The Pelvic Triangles 39
The Perineopelvic Spaces 39

4. Physiology 47
Function of Internal Anal Sphincter 48
Function of External Anal Sphincter 49
Neurophysiology (Defecation Reflex) 50

5. Evaluation of Patient with Anorectal Disorders 52
History Taking in Patients with Anorectal Disorders 52
6. Clinical Examination 63
Evaluation of a Patient with Anorectal Disease 63
Digital Rectal Examination 70
Digital Rectal Examination Work-up in Fistula in Ano 74
Examination Under Anesthesia 74
7. Investigations 75
Fecal Occult Blood Test 75
Pathology and Clinical Use 82
Radiology in Patients with Anorectal Disorders 84
Normal Findings 86
Pathology and Clinical Use 87
CT Colonography 89
Relative Contraindications to CT Colonography 90
Preparation of the Colon for CTC 91
Role of Spasmolytics 94
Scanning 94
Interventional CT 97
Dynamic MRI Defecography 97
MRI Normal Findings 98
Pathology and Clinical Use 98
Anal Manometry 100
Purpose of Performing Anal Tonometry 105
Electromyography 117
Endoscopy 119
Complications 127
Rigid Sigmoidoscopy 127
Flexible Sigmoidoscopy 137
Preparation 139

Colonoscopy 141
Technique 146
Bleeding 149
Postpolypectomy Coagulation Syndrome 149
Colonoscopic Tattooing 151

8. Preoperative Work-up 153
For Ambulatory Anorectal Surgery 153
Patient Evaluation 155

9. Constipation 159
Risk Factors for Chronic Constipation 160
Epidemiology 162
Pathophysiology 163
Pelvic Floor Dysfunction 165
Constipation in Elderly 168
Constipation in Children 168
Normal-Transit Constipation 170
Slow-Transit Constipation 171
Pelvic Floor Dyssynergia or Dysfunction or Defecatory Disorders 174
Constipation in Pregnancy 177
Evaluation of an Individual with Constipation 178
Physical Examination 181
Laxatives 190

10. Obstructed Defecation Syndrome 209
Rectocele 211
Symptoms 213
Laparoscopic Rectocele Repair Technique 221
Rectal Intussusception 222
Enterocele 225
Classification 226
Total Pelvic Organ Prolapse 228
Physical Examination 229

11. Biofeedback 232
A Standard Biofeedback Training Protocol 232
Efficacy of Biofeedback Therapy 239
12. Functional Anorectal Disorders 241
Levator Ani Syndrome 243
Proctalgia Fugax 246
Perineal Descent Syndrome 253
Pruritus Ani 255
Perianal Infection 258
Colorectal and Anal Disease 260
Systemic Disease and Psychological Factors 262
General Control Measures 267
Solitary Rectal Ulcer Syndrome 270
13. Anorectal Malformations 275
Imperforate Anus 276
Prevalance 276
Manifestation and Diagnosis 277
Associated Anomalies 283
Laparoscopic Assisted Pull-Through 287
14. Fissure in Ano 289
Pathogenesis 291
Perpetuating Factors 291
Internal Anal Sphincter Physiology 292
Acute Fissure in Ano 293
Treatment 295
Medical Therapy 296
Surgical Management 300
15. Hemorrhoids (Piles) 306
Epidemiology 307
Clinical Features and Presentation 313
Differential Diagnosis 314
Treatment 318

Dietary and Lifestyle Modifications 318
Oral Medication 319
Topical Treatment 320
Sclerotherapy 322
Cryotherapy 328
Radiofrequency Coagulation and Excision 333
Doppler Guided Hemorrhoidal Artery Ligation 335
Stapled Hemorrhoidectomy 348
Surgical Hemorrhoidectomy 354
Milligan-Morgan (Open) Hemorrhoidectomy 357
The Harmonic Scalpel and Ligasure 361
Atomizer Wand 362
Thrombosed Internal Hemorrhoids 364
Thrombosed External Hemorrhoids 364
Hemorrhoids in Special Situations 366

16. Anorectal Abscess 368
Clinical Anatomy 368
Pathogenesis 371
Physical Examination 373
Treatment 376
Horseshoe Abscess 377
Postoperative Care 380
Special Consideration 381

17. Hidradenitis Suppurativa 383
Prevalence 384
Etiology 384
Pathogenesis 385
Treatment 386
Nonsurgical Treatment 387
Hormonal Therapy 387

18. Fistula in Ano 391
History of Fistula in Ano 391
Pathogenesis 393

Clinical Presentation 393
Physical Examination 395
Differential Diagnosis 396
Classification 397
Patient Work-up 400
Other Tests 403
Management 405
Treatment 406
Medical Therapy 406
Mucosal Advancement Flap 413
Preoperative Preperation 416
Future and Controversies 419
Special Situations and Considerations 420
Anal Fistula Plug 424
Ligation of Intersphincteric Fistula Tract (LIFT) 426
Video-Assisted Anal Fistula Treatment (VAAFT) 427

19. Pilonidal Sinus 428

Definition 428
Epidemiology and Demographics 430
Etiology 431
Physical Findings and Clinical Presentation 432
Diagnosis 432
Differential Diagnosis 434
Work-up 434
Laboratory Tests 435
Treatment 435
Role of Antibiotics 436
Operative Treatment 438
Chronic Treatment 440
Karydakis Flap 444
Limberg Flap 445
Bascom Flap 445
The Z-Plasty 447

Management Options in Special Situations 450
Recurrent Pilonidal Disease 450

20. Rectal Prolapse 453
Etiology 453
Diagnosis 457
Rectal Prolapse Treatment 460
Surgical Therapy 460
Wells' Posterior Ivalon Rectopexy 464
Postoperative Care 469

21. Fecal Incontinence 474
Factors Maintaining Fecal Continence 475
Causes of Anal Incontinence 475
Treatment 493
Nonsurgical Options 494
Operative Procedure 497
Sacral Nerve Stimulation 502

*Index* 513