

Clinical Decision Making in Colorectal Surgery

Scott R. Steele
Justin A. Maykel
Steven D. Wexner
Editors

Second Edition

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 Springer

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The first edition of Clinical Decision Making in Colorectal Surgery was dedicated to my dear friends and deeply appreciated philanthropic supporters the Caporella family and their company, the National Beverage Corporation. It is only fitting that 25 years later I again dedicate the second edition to Nick Caporella, Joe Caporella, and the National Beverage Corporation for their three decades of unparalleled support to the research and education activities of the Department of Colorectal Surgery at Cleveland Clinic Florida. Without their shared altruistic vision and tremendous financial commitment to our programs, our department would not be where it is today.

—Steven D. Wexner

Foreword

It is a pleasure and an honor to be asked to write the foreword for the second edition of a book that was initially published in 1995. At the time the book represented a unique approach to a wide variety of colorectal and anal conditions; by providing thoughtful and organized algorithms for each topic, the reader was provided with the essentials required for the evaluation of each entity. To their credit, the editors of the second edition, all of whom are internationally known academic clinicians in the field of colorectal surgery, have realized the value of this format and preserved it in this new iteration.

The authors of each of the chapters are practicing physicians and surgeons who convey a logical clinical approach to the specific problem they are addressing. Many of the contributors are accomplished and respected teachers within their specialty. Individual chapters are brief but sufficient. References are current and supportive of the points made in each chapter while not being overwhelming in number. Under no circumstances should this book be considered an encyclopedic reference textbook; rather, the chapters form a sound basis for more exhaustive reading on any of the presented topics.

It has long been my advice to individuals preparing for the certifying (oral) examination of the American Board of Colon and Rectal Surgery to review each subject and prepare an algorithm that reflects current practice for each of the diseases that we see and treat. The current edition of this book makes the task much easier for the examinee. In fact, with the near doubling of medical information every three months this is a book that should be readily available not just to colorectal surgeons but to anybody who cares for patients with colorectal diseases, since it will provide concise and cogent direction to evaluation and treatment of a broad array of relatively common and uncommon diseases in a rapidly changing landscape. The editors should be congratulated for creating a text that can be so valuable for so many.

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Preface

Second Edition Clinical Decision Making

Twenty-five years have elapsed since the publication of the first edition of *Clinical Decision Making in Colorectal Surgery* by Steven D. Wexner and Anthony M. Vernava III. That textbook served many trainees and practicing surgeons quite well for rapid review of the current evaluation and management of individual problem-based questions. The algorithmic approach was found to be very clinically relevant and practical. The combination of clarity, brevity, and references was greatly appreciated. Accordingly, many times during the last 25 years surgeons have asked for second updated edition. Thus, we are delighted to present this long-awaited second edition to the surgical community. The second edition of *Clinical Decision Making in Colorectal Surgery* has added many topics, updated content in every single area, subdivided chapters in which more detailed information has been accumulated, and has in every instance, recruited renowned global leaders in colorectal surgery to share their expertise and present the best evidence-based practice algorithms to readers. We are very proud to present to you this comprehensive volume and deeply appreciate the 183 chapter authors who have expended considerable time and delivered superlative expertise with each assignment. We thank all of our colleagues and friends for their efforts that have culminated in the production of this outstanding volume.

We are both optimistic and confident that you will enjoy and frequently rely upon this algorithmic textbook *Clinical Decision Making in Colorectal Surgery*.

Cleveland, OH
Worcester, MA
Weston, FL

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Steven D. Wexner

Acknowledgments

My sincere gratitude for our incredible, hardworking, and talented Developmental Editor Elektra McDermott. I would also like to thank all the authors for their outstanding content and my co-editors, Steve and Justin, for their insight, skill, and collaboration. Finally, to my family Michele and Marianna as well as Piper and Flynn for their continued patience and support behind the scenes.

Scott R. Steele

I would like to thank the individual authors for their commitment to this textbook and for the time they dedicated to bring our readers the most comprehensive and up-to-date review of the topics. I would also like to thank my co-editors for their leadership and diligence thought the production process. Finally, I would like to thank our patients who provide us with our inspiration.

Justin A. Maykel

I am grateful to Ms. Elektra McDermott for her time and talents as both our development and copy editor. I would like to also thank Debbie Holton for her assistance to the editors at all stages of conception, creation, and production of this volume.

Steven D. Wexner

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Part I

Evaluation and Perioperative

Anorectal Examination

1

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Refer to Algorithm in Fig. 1.1

A. Chief Complaint

Eliciting a thorough history of the chief complaint is a critical first step in evaluating an anorectal complaint. Because of the sensitive nature of the complaint, patients may be reluctant or embarrassed to volunteer details, thus specific questions are helpful. Often, a careful history will enable the clinician to diagnose the patient and the physical exam is confirmatory. At a minimum, it will make it possible to generate a focused differential diagnosis. The quality, location, and duration of the chief complaint should be elicited. The patient should be asked about palliating and provoking factors such as eating and bowel movements. Common chief complaints include, but are not limited to: bleeding, anorectal pain, constipation, diarrhea, fecal

incontinence, a palpable lesion, and itching. A list of common anorectal Complaints and pathologies is found in Table 1.1. It is important to note the quantity of bleeding, timing of blood loss, and characterization as melena or hematochezia as these details suggest different pathologies. Other general inquiries that can be helpful are whether the patient feels pain or pressure with bowel movements, if there has been a change in the caliber, quality, or frequency of the stool, tenesmus, incomplete evacuation, urgency, and characterization of rectal discharge (bloody, mucoid, liquid, fecal) if present. It is worthwhile to ask what the patients have already done to try to treat the problem. Finally, it should be noted if the patient has experienced associated systemic changes such as weight loss, fatigue, nausea, or abdominal pain. Further targeted questioning will be dependent on the suspected pathology.

B. History

Understanding the patient's past medical history, family history, and various other details regarding their health and daily activities is the next step for proper evaluation of anorectal complaints. It is important to inquire whether there is a personal or family history of inflammatory bowel disease or colorectal malignancy. Medications should be reviewed as some may cause or exacerbate anorectal symptoms. Specific classes of medications to

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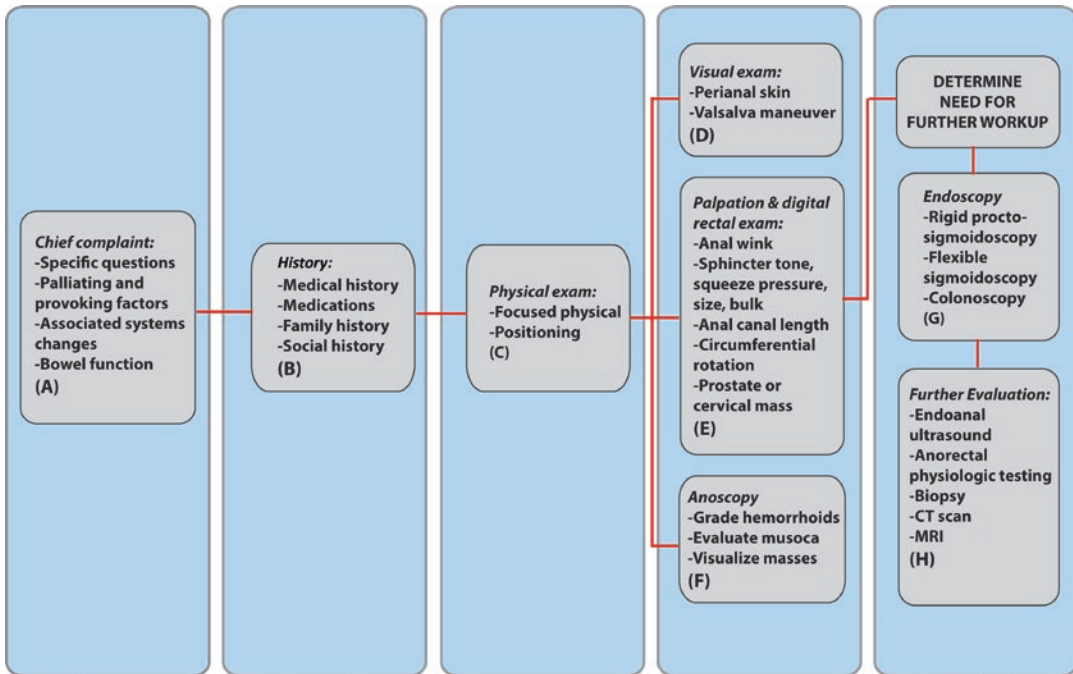


Fig. 1.1 Algorithm for anorectal examination

Table 1.1 Common anorectal complaint and pathologies

Complaints	Pathologies
Bleeding	Hemorrhoids
Rectal discharge	Anal fissures
Itching	Anal fistula
Anorectal pain	Stricture
Constipation	Abscess
Diarrhea	Rectal prolapse
Fecal incontinence	Pelvic floor dysfunction
Palpable lesions	Skin tags
Prolapse	Pilonidal disease
Pain or pressure with bowel movements	Infection
Incomplete evacuation of stool	Condyloma
Tenesmus	Pruritus ani
	Inflammatory bowel disease
	Hypertrophied anal papillae
	Malignancy

note include antiplatelet agents, anticoagulants, and anticholinergics. Previous colorectal surgeries, anorectal procedures, and endo-

scopes should be discussed. Some gastrointestinal procedures including cholecystectomy and gastric bypass are relevant because these can be involved in common gastrointestinal and anorectal symptoms. Social, sexual, and dietary histories need to be elicited including smoking history, fiber and fluid intake, and sexual history of anal-receptive intercourse. A history of urinary issues may also be potentially relevant. Finally, a comprehensive family history should be taken including history of hemorrhoids, polyps, colorectal cancers, other cancers, and inflammatory bowel disease. A positive family history of certain malignancies may put the patient at a higher risk of developing cancer and changes the screening guidelines for colonoscopy.

C. Physical Exam

The physical exam may make the patient feel vulnerable and embarrassed, so it is important to establish a relaxed and professional environment for the exam. An assistant should be present during the exam, the patient should be draped properly, and efforts should be made to communicate with

the patient throughout the exam. An overly apprehensive or anxious patient may have an anal or gluteal spasm that can hinder a proper exam. A focused physical exam with attention to the abdomen and inguinal regions is recommended prior to the anorectal exam. There are three positions that allow for adequate exposure for anorectal exam. The first and most optimal is the prone jackknife position. This position allows for full visualization of the entire anus and the perianal, perineal, and sacral regions. The Sims' position, also referred to as the left lateral decubitus position, places the patient on the left side with the buttocks slightly off the edge of the table with the right knee and hip in flexion to form a 90° angle with the trunk. This position is useful when a proctoscopic table is not available or the patient is elderly or debilitated. However, it does not allow for optimal visualization of the perineal region. Lastly, lithotomy is not ideal for most examinations, but may be used if necessary, or if indicated by complaints such as rectovaginal fistula.

D. Visual Inspection

The anorectal exam should begin with visualization of the external aspects of the perianal region by gentle spreading of the buttocks. Careful examination of the skin evaluates for scars, skin tags, inflammation, pruritus, excoriations, condyloma, fecal soiling, blood or mucous discharge, hemorrhoids, rectal prolapse, fissures, external fistula openings, perineal body bulk, sphincter shape, and mass. If rectal, uterine, vaginal, or bladder prolapse are suspected, the Valsalva maneuver should be performed in which the patient is asked to bear down. If rectal prolapse is suspected but cannot be elicited on the exam table, the Valsalva maneuver may be performed in a squatting or sitting position over a toilet with utilization of handheld mirror for examination. Findings from visual exam should be documented avoiding clock-face descriptions as they differ based on patient position; instead, directional terms such as anterior/posterior or left/right should be utilized.

E. Palpation and Digital Rectal Exam

The next step of the anorectal evaluation is palpation of the perianal skin and a digital rectal exam using a gloved and well-lubricated index finger. To evaluate the function of the pudendal nerve, the anocutaneous reflex, "anal wink", can be elicited by gentle scratching of the perianal skin around the anal verge. Next, the lubricated index finger should be gently inserted into the rectum and the following should be assessed: resting sphincter tone and squeeze pressure, sphincter size and bulk, and anal canal length. A circumferential rotation of the finger is required to appreciate a global assessment for masses or sensitivity. To fully evaluate for abnormalities and masses, the prostate should be palpated in males and the cervix in females. If a mass is identified, the extent and location needs to be noted and it should be characterized as firm or soft, fixed or mobile, and rough, smooth, or ulcerated. If the patient cannot tolerate the exam due to pain or sensitivity, the exam may require the use of a topical anesthetic, be deferred, or potentially be performed under anesthesia.

F. Anoscopy

After the completion of the digital rectal exam, anoscopy should be completed to visually inspect the interior of the anal canal and rectum. A lubricated, lighted anoscope should be slowly advanced into the anus until it is fully inserted. Anoscopy can be used to grade hemorrhoids and determine whether they prolapse outside of the anal canal. Other conditions that can be evaluated via anoscopy are the presence of inflammation on the mucosa, fissures, hypertrophied anal papillae, mass, or internal fistula opening.

G. Endoscopy

Endoscopy is undertaken to obtain visualization of the rectum and distal sigmoid colon. This is typically done when there is no clear evidence from prior exams that point to an etiology of the anorectal complaint or to ensure that the complaint is related to an anorectal finding and not a more proximal lesion. Rigid proctosigmoidoscopy and flexible sig-

moidoscopy are the most common endoscopic procedures. With proper technique, patients should feel minimal discomfort with these procedures. Formal bowel prep is not required; the rectum and distal sigmoid can be cleaned with a single phosphate based enema prior to the procedure. Rigid proctosigmoidoscopy is useful for examining and obtaining a biopsy from the entire rectum and the distal sigmoid colon. The full length of the proctoscope is 25 cm and circumferential exam is undertaken upon slow withdrawal of the scope. It is the standard tool for measuring the distance of a rectal tumor from the dentate line or anal verge because of its increased accuracy over the flexible scope. Flexible sigmoidoscopy is used more often because of increased patient comfort, ease of the exam, and a three- to sixfold increase in yield of findings in the rectum and sigmoid colon compared to rigid proctoscopy. The average length of the flexible scope is 60 cm and indications for this procedure include bright red rectal bleeding, radiation and other types of proctitis, Crohn's colitis, neoplasia, post-operative evaluation of anastomoses, and suspected strictures. Despite the advantages of flexible sigmoidoscopy, this procedure does not substitute for colonoscopy. Colonoscopy is indicated as the endoscopic procedure of choice when the workup does not clearly identify the causative issue or when otherwise indicated based on age and family history.

H. Further Evaluation

Further diagnostic evaluation may be necessary depending on the nature of the complaint and the findings gathered from the preceding exams in this algorithm. Endoanal ultrasound (EUS) can be useful for gathering more details involving pathologies such as an abscess, fistula, or tumor as well as evaluating the pelvic floor structures and anal sphincter. For determining the pathology of ulcerations or masses observed throughout the exam, biopsy can be obtained via anoscopy or endoscopy. Anorectal physiologic testing including manometry, measurement of

rectal volume sensation, rectoanal inhibitory reflex, and balloon expulsion can be used to investigate underlying etiology of pelvic floor dysfunction. MRI is recommended for the staging of rectal tumors and a CT scan is recommended assessment of metastatic disease.

Conclusion

A comprehensive anorectal evaluation is an important process in the care of a patient with an anorectal complaint. This algorithm guides clinicians in a stepwise process through the history and physical examination. Equipped with the information elicited through this evaluation, the clinician can move forward to develop an assessment and treatment plan for the patient's anorectal complaint.

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