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Evaluation & Management of Patients with Colon Cancer

Description of the Activity	Surgical oncologists are expected to evaluate and manage patients with malignant polyps, colon cancer, and appendiceal adenocarcinoma and screen/treat patients with hereditary colon cancer and polyposis syndromes. They must be able to identify the indicated surgical procedures for the treatment of known colon cancer, the need for any relevant risk-reducing procedures, and the management of synchronous metastatic disease. Surgical oncologists must develop a patient-specific, evidence-based surveillance plan in coordination with a multidisciplinary team.
Functions	❖ Nonoperative/Preoperative ➢ Synthesize essential information from a patient's records, history, physical examination, family history, and initial diagnostic evaluations to develop a differential diagnosis. ▪ Colon and appendiceal adenocarcinoma ▪ Hereditary and polyposis syndromes ▪ Malignant polyp ▪ Synchronous metastatic disease ➢ Complete a cost-effective, evidence-based diagnostic and staging evaluation, including biochemical testing and imaging studies. ➢ Review diagnostic pathology, including mutational analysis, for treatment planning. ➢ Identify patients who require genetic testing, genetics referral, and evaluation of at-risk family members. ▪ Identify other screening guidelines indicated for the evaluation of other associated extracolonic malignancies. ➢ Communicate a diagnosis and potential treatment options to the patient/caregiver(s) and consultants. Use shared decision-making to develop a treatment plan consistent with a patient's goals and beliefs. ▪ Discuss and consider fertility-preserving procedures, and make referrals when needed. ▪ Have an informed discussion regarding segmental versus extended resection for patients with hereditary colorectal cancer syndromes. ➢ Succinctly identify treatment goals (curative intent, life prolongation without curative option, palliation, end-of-life care). Communicate sympathetically in a culturally sensitive manner when de-escalation of care is appropriate because of poor prognosis or based on the patient/caregiver's goals of care. ▪ Identify impending surgical emergencies (eg, obstruction, perforation, bleeding), and assess the need for urgent/emergent procedural (eg, endoscopic stent, decompressive percutaneous endoscopic gastrostomy) or operative intervention (eg, diverting ostomy, intestinal bypass). ➢ Use current evidence-based literature to develop a correct sequence of oncologic treatment, including surgery, neoadjuvant or adjuvant chemotherapy, radiation, and other treatments as necessary. Select a treatment approach based on disease presentation, tumor biology, comorbid conditions, and patient preferences. Manage multidisciplinary treatment of the disease. ➢ Participate in a multidisciplinary conference or discussion regarding treatment plans. ➢ Collaborate with other specialties to manage comorbidities that will affect treatment (eg, chronic anticoagulation, cardiac disease, immunosuppression). ➢ Describe the indications, risks, benefits, alternative therapies, and potential complications of the planned procedure, and incorporate a discussion of the goals of care. ➢ Discuss colon surgery–specific physician- and patient-related expectations (eg, fecal diversion, urogenital and sexual dysfunction).

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- Ensure patient/caregiver comprehension using applicable language services and audio/visual aids as necessary.
- Ensure that the patient/caregiver(s) can ask questions and address any expressed concerns, taking patient/caregiver preferences into account.
- Discuss potential limitations in the desire for resuscitation (eg, DNR) and how this will be addressed in the perioperative period.

❖ Intraoperative

- Manage the perioperative environment, including room setup, equipment check, preprocedural time-out, specimen processing, counts, wound classification, and debriefing functions.
- Create and maintain an intraoperative environment that promotes safety and patient-centered care.
- Position the patient to expose the operative field (lithotomy, split leg), taking into consideration measures to prevent iatrogenic injury.
- Confirm the presence of necessary equipment, such as tools necessary for anastomotic evaluation (flexible sigmoidoscopy, rigid sigmoidoscope, indocyanine green solution).
- Determine any necessary adjuncts from surgical subspecialties (eg, ureteral stents).
- Consider cancer-reducing procedures, such as total abdominal hysterectomy and bilateral salpingo-oophorectomy, and coordinate care with the gynecology/gynecology oncology teams when needed.
- Perform open, minimally invasive (MIS), and robotic operations.
- Perform operative interventions:
  - Perform segmental colectomy (malignant polyp, colon adenocarcinoma, appendiceal adenocarcinoma).
  - Obtain prior endoscopic confirmation of a polyp/tumor if necessary.
  - Perform high ligation of feeding vessels.
  - Mobilize the hepatic or splenic flexure to facilitate a tension-free anastomosis.
  - Obtain appropriate margins.
  - Perform and evaluate the anastomosis.
  - Recognize unexpected intraoperative findings, calling consulting services as necessary.
- Perform complete mesocolic excision.
  - Sharply dissect the embryologic plane to remove an intact envelope of mesocolon together with the corresponding lymphatic drainage.
  - Perform central vascular ligation to remove apical lymph nodes.
  - Resect a sufficient length of bowel.
- Perform total abdominal colectomy with appropriate oncologic lymphadenectomy.
  - Determine the indications for hereditary cancer.
  - Know the extent of distal resection (rectal margin) based on hereditary diagnosis and surveillance strategy.
- Perform total proctocolectomy and ileal pouch-anal anastomosis (IPAA)
  - Determine the indications for hereditary cancer.
  - Delineate the extent of distal resection (rectal margin) and mucosectomy based on hereditary diagnosis and surveillance strategy.
  - Recognize options for fecal diversion and distal reconstruction.

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- Perform en bloc resections, including multivisceral resections.
  - Involve surgical subspecialties in preoperative surgical planning discussions for intraoperative consultation.
- Adapt operative steps and the operative plan to information discovered intraoperatively, calling consulting services as necessary.

❖ Postoperative

- Recognize and manage complications that occur after colon surgery, including:
  - Anastomotic complications (leak, intra-abdominal abscess, bleeding, stricture)
  - Ostomy complications (high output, dehydration, appliance issues)
  - Surgical site infections
  - Long-term complications
  - Altered bowel function (incontinence)
  - Urogenital dysfunction
  - Fertility
  - Sexual dysfunction
- Ensure genetic analysis of the final specimen to determine the best postoperative management (systemic treatment).
- Have a multidisciplinary discussion with the medical and radiation oncology teams to discuss the role of adjuvant treatment.
- Discuss the surveillance plan going forward, including blood work, tumor markers, scans, and endoscopy.
  - Discuss current screening and surveillance guidelines for colonoscopy in patients with an identified gene mutation/alteration associated with familial colorectal cancer.
  - Discuss current screening and surveillance guidelines of other associated malignancies, such as endometrial/ovarian cancer, pancreatic cancer, urinary tract malignancy, and small bowel/gastric cancer, in patients with an identified gene mutation/alteration associated with familial colorectal cancer.
- Recognize and mitigate patient-specific barriers to care.
- Coordinate care with other specialties and ancillary care as needed (physical therapy, rehabilitation, nutrition services).

Scope

❖ In scope

- Diagnoses
  - Colonic adenocarcinoma
  - Malignant polyp
- Procedures
  - Complete mesocolic excision
  - En bloc resections, including multivisceral resections
  - Open, MIS, robotic approaches
  - Segmental colectomy with appropriate oncologic mesenteric lymphadenectomy
  - Total abdominal colectomy with appropriate oncologic mesenteric lymphadenectomy
  - Total proctocolectomy and IPAA

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- Populations
  - Adults

- Out of scope
  - Diagnoses
    - Benign conditions (diverticulitis)
    - Gastrointestinal stromal tumors
    - Inflammatory bowel disease in the absence of cancer
    - Lymphoma
    - Neuroendocrine tumors
    - Peritoneal surface metastases of the colon or appendiceal origin
  - Procedures
    - Endoscopic resection techniques
  - Populations
    - Pediatric patients

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1 **Limited Participation** **Demonstrates understanding of information and has very basic skills** **Framework:** **Performs at the general surgery resident level, lower than expected for a typical residency graduate. Has some experience with simple cases but has been an observer of complex cases.**	• Synthesizes essential information from a patient's records, H&P, family history, and initial diagnostic evaluations to develop a differential • Describes common staging studies but needs assistance to identify the most evidence-based or cost-effective imaging required • Considers the role of a multidisciplinary tumor board and participates in the case discussion; needs guidance to develop a multidisciplinary treatment plan • Requires prompting to verbalize indications for management of synchronous disease and displays limited understanding of different treatment modalities • Demonstrates basic knowledge of tumor biology, genetic mutations, and hereditary syndromes • When prompted, accesses available evidence to develop a treatment plan • Records information in a patient's record but may omit some important information or include some extraneous information; frequently requires correction or augmentation of documentation of services; may need prompting for timeliness	• Lists potential intraop findings (unidentified metastatic disease, invasion into adjacent structures) but is unable to articulate how this would change the surgical plan • Needs assistance to articulate the need for involvement of ancillary services (urology, gynecology) in surgical planning • Sites and matures stomas with assistance • Requires prompting to identify appropriate tissue planes and scope of oncologic resections, including margins and extent of lymphadenectomy • Demonstrates limited tissue-handling skills and needs assistance with creation of a surgical anastomosis and decision-making regarding the need for fecal diversion • Creates a basic operative note but omits some important information; may need prompting for timeliness	• Demonstrates knowledge of ERAS protocols and management of routine postop care • Evaluates postop pathology, requiring assistance to recognize indications for adjuvant treatment or a genetic referral • Accesses evidence-based guidelines for postop care and surveillance but needs assistance to formulate a plan based on tumor factors • Documents postop care but may omit nuances of progress or minor complications; may choose an inappropriate means of communication (paging for minor details or email for urgent issues)

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2 **Direct Supervision** **Manages cases at the level of a newly graduated general surgery resident. Manages less complicated cases independently but needs active guidance for complex cases.** **Framework:** **The learner can manage simple or straightforward cases.** **The learner may require guidance in managing multidisciplinary care (eg, planning neoadjuvant treatment or postoperative chemotherapy).** **During surgery, the attending gives active help throughout the case to maintain forward progression.**	• Obtains an H&P, including family history, to develop a comprehensive differential but may not demonstrate understanding of the nuances of hereditary syndromes • Articulates evidence-based oncologic staging but may not order the most cost-effective imaging and labs • Synthesizes patient factors and oncologic staging into a treatment plan for a straightforward case but needs assistance for a complex and nuanced clinical scenario (synchronous malignancies, locally advanced case) • Discusses a case in a multidisciplinary manner, demonstrating understanding of surgical indications and risks, but needs guidance during an in-depth discussion regarding short- and long-term complications and alternative treatment options • Demonstrates basic knowledge of tumor biology, genetic mutations, and hereditary syndromes but needs guidance to use the information to develop a patient-centered treatment plan for a known malignancy and prevention of future malignancy • Demonstrates basic understanding of hereditary syndromes but needs guidance regarding surveillance for extracolonic manifestations	• Identifies intraop findings (unidentified metastatic disease, invasion into adjacent structures) but requires redirection when encountering unanticipated intraop findings • Recognizes the need for involvement of ancillary services (urology, gynecology) in surgical planning but needs assistance to effectively coordinate these aspects of care • Independently sites and matures stomas • Recognizes the nuances of oncologic resection based on tumor location and how it affects the extent of distal/proximal margins, extent of lymphadenectomy, and resection of indicated vessels • Recognizes the need for multivisceral resection to achieve complete oncologic resection; requires assistance for basic and complex cases • Demonstrates safe and effective tissue-handling skills and performs a surgical anastomosis with minimal prompting in an uncomplicated case, including the need for fecal diversion, but requires direct supervision to perform a multivisceral resection	• Manages routine postop care and demonstrates understanding of ERAS protocols but needs direct supervision to recognize and conduct complex postop management and complications • Recognizes the impact of genetic mutations on adjuvant therapy and postop care in a patient with a hereditary syndrome but needs direction to navigate a tailored plan based on the mutation • Requires prompting to elicit patient preferences and values to guide evidence-based adjuvant care and surveillance • Thoroughly documents a patient's postop progression and the presence of any complications within the plan of management

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	• Accesses available evidence to develop a treatment plan but needs assistance to elicit patient preferences when guiding care • Demonstrates organized diagnostic and therapeutic reasoning through notes in a patient's record; demonstrates timely and efficient use of the EHR to communicate with the health care team	• Creates an operative note with a complete description of the procedure	
3 **<u>Indirect Supervision</u>** **Can do a basic operation but will not recognize abnormalities and does not understand the nuances of an advanced case.** **Manages multidisciplinary care of straightforward cases. Seeks assistance in managing complex cases.** **<u>Framework:</u>** **The learner can perform the operation in straightforward circumstances.**	• Obtains a thorough H&P, demonstrating understanding of the importance of genetic factors and family history; orders cost-effective and evidence-based imaging and labs • Synthesizes patient factors and oncologic staging into a concise treatment plan in a shared-decision model, demonstrating understanding of the indications, risks, and potential short- and long-term complications • Recognizes an urgent or emergent surgical clinical scenario but needs assistance to structure a treatment plan and consider alternative strategies for management, taking into consideration patient-centered factors • Demonstrates understanding of tumor biology, recognizes genetic mutations, and develops a surgical treatment plan for management of known malignancy;	• With assistance, refines the preop surgical plan based on information discovered intraoperatively (unidentified metastatic disease, invasion into adjacent structures) • Independently coordinates the involvement of ancillary services (urology, gynecology) with the surgical plan • Independently sites and matures stomas in straightforward and complex cases • Performs oncologic resection, lymphadenectomy, and resection of indicated vessels in an uncomplicated case of colon or rectal cancer • Needs assistance in a multivisceral resection to achieve complete oncologic resection	• Recognizes and manages a postop complication (leak, ureteral injury, iatrogenic bowel injury) and navigates management with prompting • Demonstrates understanding of the impact of genetic mutations on an adjuvant treatment plan and management of hereditary syndromes but needs guidance to recognize the premise of therapeutic options • Locates and applies the best available evidence for adjuvant therapy and surveillance, integrated with patient preferences • Selects direct (telephone, in-person) and indirect (progress notes, secure text messages) forms of communication based on context and urgency

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The attending gives passive help. This help may be given while scrubbed for more complex cases or during check-in for more routine cases.	requires assistance with discussion regarding options for hereditary syndromes • Recognizes hereditary syndromes and develops a surveillance strategy for extracolonic manifestations • Independently integrates oncologic information with patient-specific factors to design a succinct diagnostic and workup plan in a straightforward case and adjusts the plan based on available evidence • Concisely integrates all relevant data from outside systems and prior encounters and reports diagnostic and therapeutic reasoning in the patient's record	• In an uncomplicated case, performs the technical aspects of an oncologic colon resection, including appropriate margin status, high ligation of feeding vessels, a tension-free anastomosis, anastomotic integrity assessment, and whether there is a need for fecal diversion, with occasional guidance; asks for assistance when needed • Creates an operative note with a complete description of the procedure, including key intraop findings; documents anatomic or disease variants in a thorough and understandable way	
4 **<u>Practice Ready</u>** **Manages complex disease presentations and performs complex operations independently. Guides a multidisciplinary approach to complex cases. Performs as an expert consultant in surgical oncology.** **<u>Framework</u>:** **The learner can treat all common variations of**	• Demonstrates understanding of tumor biology, recognizes genetic mutations, and independently develops a surgical treatment plan for a known malignancy and hereditary syndrome • Independently integrates oncologic information with patient-specific factors to design a succinct diagnostic and workup plan for a complex or unusual presentation and adjusts the plan based on available evidence • Communicates diagnostic and therapeutic reasoning clearly, concisely, promptly, and in an organized written form, including anticipatory guidance; written or verbal	• Independently refines the preop surgical plan based on information discovered intraoperatively (invasion into adjacent structures, suspicious lymphadenopathy not seen on imaging) • Proactively coordinates the involvement of ancillary services (urology, gynecology) with the surgical plan • Independently sites and matures stomas in both straightforward and complex cases • Performs oncologic resection, lymphadenectomy, and resection of indicated vessels in a case of complicated colon cancer	• Independently recognizes and manages a postop complication (leak, ureteral injury, iatrogenic bowel injury) and involves appropriate consultative services when needed • Integrates patient pathology and genetic mutational analysis into a postop treatment planning discussion • Critically appraises an evidence-based rationale for adjuvant therapy, even in the face of uncertain or conflicting evidence • Communicates clearly, concisely, promptly, and in an organized written form, including anticipatory guidance so

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the disease and has a strong understanding of surgical and medical options for different presentations. **The attending is available at the request of the learner but is not routinely needed for common presentations, though input may be needed for more complex or unusual presentations.**	communication (patient notes, email) serves as an example for others to follow	• Performs multivisceral resection to achieve complete oncologic resection • In a complex case, performs the technical aspects of an oncologic colon resection, including appropriate margin status, high ligation of feeding vessels, a tension-free anastomosis, anastomotic integrity assessment, and whether there is a need for fecal diversion, with occasional guidance; asks for assistance when needed • Creates an operative note with a complete description of the procedure, a rationale for modifications of the operative plan, and documentation of anatomic or disease variants	the postop plan of care is clear to other members of the health care team