



Evaluation & Management of Patients with Soft Tissue Sarcoma

Description of the Activity	Surgical oncologists are expected to evaluate and manage patients who present with signs and symptoms of soft tissue sarcoma located in the abdomen, retroperitoneum, extremities, and trunk. Surgical oncologists must be able to accurately and cost-effectively diagnose, treat, and provide evidence-based surveillance for adult patients with soft tissue sarcoma and recognize complex disease that requires multidisciplinary treatment.
Functions	<ul style="list-style-type: none">❖ Nonoperative/Preoperative<ul style="list-style-type: none">➤ Synthesize essential information from a patient’s records, history, physical examination, and initial diagnostic evaluations to develop a differential diagnosis.➤ Complete a cost-effective, evidence-based diagnostic or staging evaluation, including biopsy, molecular testing, or imaging studies as indicated based on tumor histology and location.<ul style="list-style-type: none">● Describe and choose the appropriate biopsy technique (image-guided core needle biopsy, incisional biopsy, excisional biopsy).➤ Determine the next steps, including re-excision, further imaging, and observation, if the patient presents after being initially managed by another surgeon or medical provider.➤ Provide an intraoperative consult when contacted for recommendations regarding unexpectedly identified intra-abdominal or retroperitoneal soft tissue masses suspicious for sarcoma, communicating the necessity of an appropriate workup including imaging and tissue diagnosis before an attempt at definitive resection.➤ 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.➤ Succinctly identify treatment goals, including curative intent, life prolongation without curative option, palliation, or end-of-life care. Communicate sympathetically in a culturally appropriate manner when de-escalation of care is appropriate because of a poor prognosis or based on the patient/caregiver’s goals of care.➤ Use current evidence-based literature to develop the correct sequence of oncologic treatment, including surgery, neoadjuvant or adjuvant chemotherapy, radiation therapy, and other treatments as necessary.<ul style="list-style-type: none">■ Select a treatment approach based on disease presentation, tumor histology/grade and location, comorbid conditions, and patient preferences.■ When applicable, use neoadjuvant radiation to facilitate limb salvage for extremity sarcoma.➤ Participate in a multidisciplinary conference or discussion regarding treatment plans.➤ Evaluate patients for clinical trial enrollment.➤ Refer patients for genetics counseling as indicated by current guidelines.➤ Anticipate and plan for alterations in normal anatomy or physiology based on a patient’s history, including prior treatment.➤ Evaluate reconstruction options after radical resection of the extremity or trunk sarcoma.➤ Identify and coordinate with surgical subspecialists preoperatively (plastic surgery, urology, vascular surgery) based on anticipated intraoperative needs dictated by the extent of resection and anticipated reconstruction.



Evaluation & Management of Patients with Soft Tissue Sarcoma

- Refer patients to physical/occupational therapy or physical medicine and rehabilitation for prehabilitation or discussion regarding expected functional deficits after treatment if applicable.
- Identify relevant specialist providers, and collaboratively manage comorbidities that will affect treatment, such as chronic anticoagulation, cardiac disease, immunosuppression, and malnutrition.
- Obtain informed consent with cultural humility.
 - Describe the indications, risks, benefits, alternative therapies, and potential complications of the planned procedure, and incorporate a discussion of the goals of care.
 - Discuss the potential scope of the operation, including the expected postoperative recovery and potential discharge destination (eg, home vs short-term rehab vs skilled nursing facility)
 - Discuss the potential discovery of unresectable disease intraoperatively as well as contingency plans or risk of termination of the procedure.
 - 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, do-not-resuscitate order) and how this will be addressed in the perioperative period.
 - Document the consent discussion.
- ❖ Intraoperative
 - Manage the perioperative environment, including room setup, equipment check, preprocedural time-out, specimen orientation and processing, counts, wound classification, and debriefing functions.
 - Develop a safe anesthetic approach for the clinical situation in collaboration with in-office staff or the anesthesiology team, depending on the environment selected for the performance of the procedure.
 - Communicate bidirectionally with the anesthesia team during critical portions of the case (eg, potential avoidance of long-acting muscle relaxation, vascular resection/reconstruction, hemorrhage).
 - Create and maintain an intraoperative environment that promotes safety and patient-centered care.
 - Position the patient to expose the operative field, taking precautionary measures to prevent iatrogenic injury.
 - Confirm accessibility of necessary equipment. Coordinate with other members of the operating room team to use specialized equipment or procedures.
 - Perform the in-scope procedures required to manage soft tissue sarcoma, with the goal of achieving negative margins (R0/R1 resection for peritoneal/retroperitoneal sarcomas, R0 resection for extremity/trunk sarcomas).
 - Execute an operative plan that is safe and takes into account alterations in normal anatomy or physiology based on the patient's history, including prior treatment (eg, reoperative fields, prior nephrectomy).



Evaluation & Management of Patients with Soft Tissue Sarcoma

	<ul style="list-style-type: none">➤ Anticipate common postoperative complications, and mitigate risk as possible (eg, drain placement for seroma).➤ Debate the role of adjunctive therapies, including, but not limited to, intraoperative radiotherapy and isolated limb infusion/perfusion.➤ Collaborate and communicate with other surgical subspecialties to create a unified patient-centered operative team (eg, vascular surgery, urologic surgery, thoracic surgery).➤ Adapt the operative plan to information discovered intraoperatively.<ul style="list-style-type: none">■ Demonstrate safe judgment when the tumor is found to be unresectable, such as the involvement of critical structures such as the superior mesenteric artery or the aorta.❖ Postoperative<ul style="list-style-type: none">➤ Manage common early and late complications related to soft tissue sarcoma procedures, including complications related to resection of retroperitoneal and intra-abdominal soft tissue sarcomas, such as:<ul style="list-style-type: none">■ Early postoperative complications: hemorrhage, anastomotic leak, missed iatrogenic injury, bowel obstruction/ileus, chyle leak, DVT/PE, surgical site infection including deep organ space infection, wound/fascial dehiscence, and postoperative renal failure■ Late postoperative complications: hernias, strictures, adhesive bowel obstructions, and fistulae➤ Communicate a postencounter plan with a patient/caregiver(s) and other health care team members that considers intraoperative and pathologic findings, future treatment needs, postencounter needs, outcome expectations, and follow-up.➤ Describe and mitigate patient-specific barriers to care.➤ Coordinate care with other specialties and ancillary care as needed (physical therapy, rehabilitation, nutrition services).➤ Review intraoperative and pathologic findings in a multidisciplinary tumor board, and modify the treatment plan, if indicated.➤ Develop a plan for surveillance, including physical examinations and imaging, after the initial treatment of soft tissue sarcomas that takes into account factors such as histologic type/grade and resection margin status.
Scope	<ul style="list-style-type: none">❖ In scope<ul style="list-style-type: none">➤ Diagnoses<ul style="list-style-type: none">■ Benign and malignant peripheral nerve sheath tumors■ Cutaneous sarcomas■ Desmoid tumors■ Soft tissue sarcoma of the trunk, extremity, or retroperitoneum■ Soft tissue sarcomas in the field of prior radiation■ Solitary fibrous tumors■ Unknown soft tissue mass➤ Procedures



Evaluation & Management of Patients with Soft Tissue Sarcoma

- Amputation of extremity sarcoma
- Completion or therapeutic lymphadenectomy
- Core needle biopsy of soft tissue masses of the trunk or extremity
- Excisional biopsy of soft tissue masses of the trunk or extremity
- Excisional lymph node biopsy
- Incisional biopsy of soft tissue masses of the trunk or extremity
- Radical resection of extremity sarcomas, including en bloc resection of adjacent muscle, nerve, and vascular structures
- Radical resection of retroperitoneal tumors, including multivisceral resections
- Sentinel lymph node biopsy, including injection of blue dye and use of a gamma probe
- Wound closure, including skin graft, rotational flaps, and complex wounds

- Populations
 - Adults

❖ Out of scope

- Diagnoses
 - Central nervous system tumors
 - Sarcomas of gynecologic origin
 - Sarcomas of the bone
 - Soft tissue tumors of oropharyngeal origin
 - Testicular tumors
 - Tumors of the hand, foot or ankle
 - Unknown cutaneous lesion

- Procedures
 - Biopsy or resection of tumors of the:
 - Bone
 - Central nervous system
 - Genitourinary tract
 - Gynecologic organs
 - Oropharynx

- Populations
 - Pediatric patients



Evaluation & Management of Patients with Soft Tissue Sarcoma





Evaluation & Management of a Patient with Soft Tissue Sarcoma

Level	Nonoperative/Preoperative	Intraoperative	Postoperative
<p>1</p> <p><u>Limited Participation</u></p> <p>Demonstrates understanding of information and has very basic skills.</p> <p><u>Framework:</u> 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.</p>	<ul style="list-style-type: none">• Synthesizes essential information from a patient's records, H&P, family history, and initial diagnostic evaluations to develop a differential• Needs assistance to determine indications for preop biopsy and the need for additional imaging• With prompting, describes potential treatment options for a straightforward case; needs assistance with a rare or complex case• Participates in multidisciplinary discussion and is receptive to recommendations from all team members• Requires guidance to interpret preop imaging and recognize implications for surgical planning• Describes prognostic implications for most common sarcoma histologies• When prompted, accesses available evidence to develop the correct sequence of treatment (eg, surgery, chemotherapy, radiation therapy)• Needs prompting to coordinate care with other specialties and ancillary care	<ul style="list-style-type: none">• Lists potential intraop findings (eg, unidentified metastatic disease, invasion into critical structures) needs prompting to discuss how this would change surgical plan• Needs prompting to assess resection margins• Performs a common general surgical resection in low-burden disease (eg, superficial extremity sarcoma)• Requires prompting to anticipate the need for surgical subspecialist assistance (plastic surgery, urology, vascular surgery)• Identifies normal surgically relevant anatomy• Functions as a member of a patient-centered operative team• Creates a basic operative note but omits some important information; may need prompting for timeliness	<ul style="list-style-type: none">• Describes the postsurgical anatomy, needing prompting to discuss how it relates to postop management (eg, risk for chyle leak, post-nephrectomy solitary kidney)• Needs prompting to describe a surveillance plan based on tumor histology/grade and resection margin status• Needs prompting to access evidence-based guidelines for postop care and surveillance• Discusses intraop findings with a patient/caregiver(s) and relevant members of the multidisciplinary team• Needs prompting to coordinate postop care with other specialties and ancillary care providers (eg, PT, nutrition)• 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)



Evaluation & Management of a Patient with Soft Tissue Sarcoma

Level	Nonoperative/Preoperative	Intraoperative	Postoperative
	<p>providers in the preop setting (eg, PT, nutrition)</p> <ul style="list-style-type: none"> Records information in a patient’s record but may omit some important information or include some extraneous information; requires correction or augmentation of documentation of services; may need prompting for timeliness 		
<p style="text-align: center;">2</p> <p style="text-align: center;"><u>Direct Supervision</u></p> <p>Manages cases at the level of a newly graduated general surgery resident. Manages less complicated cases independently but needs active guidance for complex cases.</p> <p style="text-align: center;"><u>Framework:</u></p> <p>The learner can manage simple or straightforward cases.</p> <p>The learner may require guidance in managing multidisciplinary care (eg, planning neoadjuvant treatment</p>	<ul style="list-style-type: none"> Requires assistance to determine if additional information (eg, biopsy or additional imaging) is needed Describes treatment options for straightforward cases; needs assistance with rare or complex cases. Coordinates care with other specialties and ancillary care providers in the preop setting (eg, PT, nutrition) in straightforward cases but needs assistance with complex cases Participates in a multidisciplinary tumor board discussion to develop a treatment plan but needs assistance to guide the discussion and formulate a multimodality treatment plan; communicates clearly with the health care team Interprets preop imaging but requires prompting to understand implications on surgical planning 	<ul style="list-style-type: none"> Recognizes the need for involvement of ancillary services (urology, plastic surgery, vascular surgery) in surgical planning, needing assistance to coordinate these aspects of care based on tumor location and anticipated reconstruction Assesses resection margins with minimal assistance Performs a straightforward sarcoma resection independently (eg, superficial extremity sarcoma) but requires guidance for a more complex case Identifies common intraop findings (eg, unidentified metastatic disease, invasion into adjacent structures) but requires redirection when encountering unanticipated intraop findings Identifies normal surgically relevant anatomy and, with assistance, altered or aberrant anatomy 	<ul style="list-style-type: none"> Describes the implications of postsurgical anatomy as it relates to postop management in straightforward and common cases Describes a plan for surveillance based on tumor histology/grade and resection margin status in common or straightforward cases Accesses evidence-based guidelines for postop care and surveillance; needs assistance to elicit patient preferences and values to guide adjuvant therapy and surveillance Discusses intraop findings with a patient/caregiver(s) and members of the multidisciplinary team but inconsistently communicates how findings impact management; requires prompting to elicit patient preferences and values to guide evidence-based care



Evaluation & Management of a Patient with Soft Tissue Sarcoma

Level	Nonoperative/Preoperative	Intraoperative	Postoperative
<p>or postoperative chemotherapy).</p> <p>During surgery, the attending gives active help throughout the case to maintain forward progression.</p>	<ul style="list-style-type: none"> Describes prognostic implications for common and some uncommon sarcoma histologies Accesses available evidence to develop the correct sequence of treatment (eg, surgery, chemotherapy, radiation therapy), needing assistance to elicit patient preferences when guiding care Demonstrates organized diagnostic and therapeutic reasoning through notes in the patient record; demonstrates timely and efficient use of the EHR to communicate with the health care team 	<ul style="list-style-type: none"> Actively functions as a member of a patient-centered operative team and solicits feedback Creates an operative note with a complete description of the procedure 	<ul style="list-style-type: none"> Coordinates postop care with other specialties and ancillary care providers (eg, PT, nutrition) in straightforward cases Thoroughly documents postop progression and the presence of any complications within the plan of management
<p>3</p> <p><u>Indirect Supervision</u></p> <p>Can do a basic operation but will not recognize abnormalities and does not understand the nuances of an advanced case.</p> <p>Manages multidisciplinary care of straightforward cases. Seeks assistance in managing complex cases.</p> <p><u>Framework:</u></p>	<ul style="list-style-type: none"> Integrates oncologic information with patient-specific factors to design a diagnostic workup plan with minimal assistance Independently describes treatment options for newly diagnosed rare or complex cases; needs assistance for recurrent or metastatic cases Develops an evidence-based treatment plan for straightforward and some complex sarcoma cases Leads discussion of routine cases at multidisciplinary tumor board discussion, incorporating multimodality treatment options into the formulation of a treatment plan; requires assistance to develop a plan for a complex case or when conflicting 	<ul style="list-style-type: none"> With assistance, refines the preop surgical plan based on information discovered intraoperatively (eg, unidentified metastatic disease, invasion into critical structures) Independently coordinates involvement of ancillary services (urology, plastic surgery, vascular surgery) with the surgical plan based on tumor location and anticipated reconstruction Independently assesses resection margins in straightforward cases Safely performs complex sarcoma resections (eg, superficial extremity sarcoma, retroperitoneal sarcomas) 	<ul style="list-style-type: none"> Incorporates knowledge of postsurgical anatomy to manage complex cases with minimal assistance Describes a plan for surveillance based on tumor histology/grade and resection margin status in complex cases Locates and applies the best available evidence for adjuvant therapies and surveillance, integrated with patient preference With minimal assistance, communicates intraop findings and their implications on further oncologic management to a patient/caregiver(s) and relevant members of the multidisciplinary team



Evaluation & Management of a Patient with Soft Tissue Sarcoma

Level	Nonoperative/Preoperative	Intraoperative	Postoperative
<p>The learner can perform the operation in straightforward circumstances. The attending gives passive help. This help may be given while scrubbed for more complex cases or during check-in for more routine cases.</p>	<p>opinions exist; adapts communication style to fit team needs</p> <ul style="list-style-type: none"> Independently interprets preop imaging and with prompting anticipates the potential need for preop and intraop subspecialty consultation Independently integrates oncologic information with patient-specific factors to design a succinct diagnostic and workup plan and adjusts the plan based on available evidence in a straightforward case Describes the prognostic implications for most sarcoma histologies Coordinates preop care with other specialties and ancillary care providers Concisely integrates all relevant data from outside systems and prior encounters and reports diagnostic and therapeutic reasoning in the patient's record 	<p>without multivisceral involvement) with minimal assistance</p> <ul style="list-style-type: none"> Consistently identifies normal surgically relevant anatomy and most aberrant or altered anatomy Functions as the leader of a patient-centered operative team and provides feedback 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 	<ul style="list-style-type: none"> Coordinates postop care with other specialties and ancillary care providers (eg, PT, nutrition) in complex cases Selects direct (telephone, in-person) and indirect (progress notes, secure text messages) forms of communication based on context and urgency
<p>4</p> <p><u>Practice Ready</u></p> <p>Manages complex disease presentations and performs complex operations independently. Guides a multidisciplinary approach to complex</p>	<ul style="list-style-type: none"> Independently integrates oncologic information with patient-specific factors to design a succinct diagnostic and workup plan and adjusts the plan based on available evidence Independently develops an evidence-based treatment plan for straightforward and complex sarcoma cases, including recurrent and metastatic cases 	<ul style="list-style-type: none"> Proactively coordinates involvement of ancillary services (eg, plastic surgery, urology, vascular surgery) and independently communicates operative plan based on tumor location and anticipated reconstruction Safely performs complex sarcoma resections independently, including less common locations, following 	<ul style="list-style-type: none"> Independently incorporates knowledge of postsurgical anatomy to manage complex cases Independently develops a plan for surveillance based on patient-specific factors, tumor histology/grade, and resection margin status in less common cases, including recurrent and metastatic disease



Evaluation & Management of a Patient with Soft Tissue Sarcoma

Level	Nonoperative/Preoperative	Intraoperative	Postoperative
<p>cases. Performs as an expert consultant in surgical oncology.</p> <p>Framework: The learner can treat all common variations of the disease and has a strong understanding of surgical and medical options for different presentations.</p> <p>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.</p>	<ul style="list-style-type: none"> Leads discussion of complex cases at multidisciplinary tumor board discussion that incorporates patient and tumor factors; independently develops a plan; adapts communication style when conflicting opinions exist Independently interprets preop imaging and anticipates the potential need for preop and intraop subspecialty consultation Describes prognostic implications for almost all sarcoma histologies Anticipates the need to coordinate preop care with other specialties and ancillary care providers based on patient, tumor, and treatment factors Communicates diagnostic and therapeutic reasoning clearly, concisely, promptly, and in organized written form, including anticipatory guidance; written or verbal communication (patient notes, email) serves as an example for others to follow 	<p>neoadjuvant therapy, and recurrent tumors</p> <ul style="list-style-type: none"> Independently assesses resection margins in more complex cases Independently refines the preop surgical plan based on information discovered intraoperatively (eg, unidentified metastatic disease, invasion into critical structures) Identifies surgically relevant anatomy and relevant anatomic alterations even in the setting of prior radiation or surgery Independently coordinates recommendations from different members of the health care team to optimize patient care; maintains effective communication even in a challenging situation (eg, intraop blood loss, operating near critical structures) 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 	<ul style="list-style-type: none"> Critically appraises evidence-based rationale for adjuvant therapies, even in the face of uncertain or conflicting evidence Leads a discussion regarding intraop findings and their implications on further oncologic management with a patient/caregiver(s) and relevant members of the multidisciplinary team Proactively coordinates postop care with other specialties and ancillary care providers (eg, PT, nutrition) in uncommon cases, including recurrent and metastatic disease Communicates clearly, concisely, promptly, and in an organized written form, including anticipatory guidance so the postop plan of care is clear to other members of the health care team