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EDITORIAL – HEALTH SERVICES RESEARCH AND GLOBAL ONCOLOGY

Management of Cancer Surgery Cases During the COVID-19 Pandemic: Considerations

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In these unprecedented times of COVID-19, surgical oncologists are being forced to consider triage and rationing of cancer surgery cases, for a number of reasons:

- the potential shortage of personal protective equipment, such as masks, gowns, gloves;
- the potential shortage of hospital personnel due to sickness, quarantine, and duties at home;
- the potential shortage of hospital beds, intensive care unit (ICU) beds, and ventilators;
- the desire to maximize social distancing among our patients, colleagues, and staff.

The Society of Surgical Oncology (SSO) asked each of the SSO Disease Site Work Group Chairs and Vice Chairs to provide their recommendations for managing care in their specialties, assuming a 3- to 6-month delay in care. These recommendations are summarized below.

The SSO supports the need for treatment decisions to be made on a case-by-case basis. The surgeon's knowledge and understanding of the biology of each cancer, alternative treatment options, and the institution's COVID-19 policies in place at the time the patient will be scheduled for surgery all need to be taken into consideration.

The information below is based on the opinions of individuals who are experts within their respective areas of cancer and who are members of the Society's various Disease Site Work Groups.

BREAST CANCER

Defer surgery for at least 3 months for atypia, prophylactic/risk-reducing surgery, reconstruction, and benign breast disease.

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Ductal Carcinoma In Situ

- Defer for 3–5 months.
- Treat estrogen receptor (ER)+ ductal carcinoma in situ (DCIS) with endocrine therapy.
- Monitor monthly for progression.
- ER− DCIS high priority for surgery when deemed safe by the health system.

Estrogen Receptor+ Invasive Breast Cancer (Stage I–III)

- Treat with endocrine or chemotherapy in a neoadjuvant fashion as deemed appropriate by multidisciplinary tumor board recommendations.

Triple-Negative/HER2+ Invasive breast cancer

- Treat with neoadjuvant chemotherapy for t2+ and/or n1+ disease.
- Consider primary surgery as urgent if the patient is unable to undergo chemotherapy or the tumor is small and surgical information could inform chemotherapy decisions.

Post-neoadjuvant Chemotherapy

- Delay post-chemotherapy surgery for as long as possible (4- to 8-week window) in those patients for whom adjuvant systemic therapy is unclear/not indicated.

Unusual Cases/Surgical Emergencies/Special Considerations

- Patients with progressive disease on systemic therapy, angiosarcoma, and malignant phyllodes tumors should be considered for urgent surgery and should not be delayed.

COLORECTAL CANCER

- Defer surgery for all cancers in polyps, or otherwise early-stage disease.
- Operate if obstructed (divert only if rectal), perforated, or acutely transfusion-dependent.
- Proceed with curative intent surgery for non-metastatic colon cancer.
- Consider all options for neoadjuvant therapy, including utilization of total neoadjuvant therapy for rectal cancer, and to consider neoadjuvant chemotherapy for locally advanced and metastatic colon cancer.
- For rectal cancer, neoadjuvant radiation component, highly consider a short-course (5×5 Gy) regimen (versus standard long-course chemotherapy).
- Delay surgery for locally advanced rectal cancer post-neoadjuvant therapy for 12–16 weeks.

ENDOCRINE TUMORS

Most uncomplicated endocrine operations can be delayed.

Diseases and presentations that might qualify for more urgent surgery (i.e. within approximately 4–8 weeks during the current pandemic), include the following.

Thyroid

- Thyroid cancer that is a current or impending threat to life, those that are threatening morbidity with local invasion (e.g. trachea, recurrent laryngeal nerve), aggressive biology (rapidly growing tumor or recurrence, rapidly progressive local-regional disease, including lymph nodes).
- Severely symptomatic Graves' disease that has not responded to medical therapy.
- Goiter that is highly symptomatic or is at risk for impending airway obstruction.
- Open biopsy with diagnostic intent for suspected anaplastic thyroid cancer or lymphoma.

Parathyroid

- Hyperparathyroidism with life-threatening hypercalcemia that cannot be controlled medically.

Adrenal

- Adrenocortical cancer or highly suspected adrenocortical cancer.
- Pheochromocytoma or paraganglioma that is unable to be controlled with medical management.
- Cushing's syndrome with significant symptoms that is unable to be controlled with medical management.
- Generally, functional adrenal tumors that are medically controlled, and asymptomatic non-functional adrenal adenomas, can be delayed.

Neuroendocrine Tumors

- Symptomatic small bowel neuroendocrine tumors (NETs; e.g. obstruction, bleeding/hemorrhage, significant pain, concern for ischemia).

- Symptomatic and/or functional pancreatic NETs that cannot be controlled medically.
- Lesions with significant growth or short doubling times.
- Cytoreductive operations and metastasectomy should generally be delayed but should be considered on an individual basis.

GASTRIC AND ESOPHAGEAL CANCER

- cT1a lesions amenable to endoscopic resection should preferentially undergo endoscopic management.
- cT1b cancers should be resected.
- cT2 or higher tumors and node-positive tumors should be treated with neoadjuvant systemic therapy.
- Patients finishing neoadjuvant chemotherapy can stay on chemotherapy if responding to and tolerating treatment.

Defer surgery for less biologically aggressive cancers, such as gastrointestinal stromal tumors (GISTs), unless symptomatic or bleeding.

HEPATO-PANCREATO-BILIARY CANCER

Operate on all patients with aggressive hepato-pancreato-biliary malignancies as indicated.

- Including pancreas adenocarcinoma, gastric cancer, cholangiocarcinoma, duodenal cancer, ampullary cancer, metastatic colorectal to the liver.
- In cases where systemic chemotherapy is indicated in addition to surgery, consider neoadjuvant chemotherapy as a means of postponing surgery.
- If responding to and tolerating neoadjuvant chemotherapy, then continue and delay surgery.

Defer surgery for asymptomatic pancreatic NETs, duodenal and ampullary adenomas, GISTs, and high-risk intraductal papillary mucinous neoplasms, unless delay will affect resectability.

Use neoadjuvant chemotherapy, ablation, or stereotactic radiosurgery instead of resection for liver metastases where possible. Consider ablation or embolization over surgical resection for hepatocellular carcinoma.

MELANOMA

- Delay wide local excision of in situ disease for 3 months and, as resources become scarce, all lesions with negative margins on initial biopsy. Efforts should be made to perform procedures in an outpatient setting to limit the use of operating room (OR) resources. If significant delay of definitive excision is anticipated, the precise location of the biopsy site should be carefully documented (e.g. photography, marking of the site by the patient or caregiver) to facilitate identification at a later time.
- Surgical management of T3/T4 melanomas (> 2 mm thickness) should take priority over T1/T2 melanomas (≤ 2 mm thickness). The exception is any melanoma that is partially/incompletely biopsied in which a large clinical residual lesion is evident. Gross complete resection is recommended in this case.
- Sentinel lymph node biopsy is reserved for patients with lesions > 1 mm and, as resources become scarce, set aside for 3 months.
- Manage clinical stage III disease with neoadjuvant systemic therapy. If resources permit and the patient is not suitable for systemic therapy, consider resection of clinical disease in an outpatient setting.
- Metastatic resections (stages III and IV) should be placed on hold unless the patient is critical/symptomatic or unresponsive to systemic therapies (assuming surgical resources are available). Single-dose palliative radiation may be considered for bulky disease to alleviate symptoms if OR capacity is limited.

PERITONEAL SURFACE MALIGNANCY

- Operate on patients with malignant bowel obstruction if a palliative procedure is feasible.
- As cytoreductive surgery/hyperthermic intraperitoneal chemotherapy (CRS/HIPEC) can take unique levels of resources, special consideration should be made for proceeding with these cases.
- Defer CRS/HIPEC for low-grade appendiceal mucinous neoplasms except in extreme circumstances.
- Consider neoadjuvant systemic chemotherapy for peritoneal metastases from high-grade appendiceal cancer, gastric cancer, colorectal cancer, high-grade mesothelioma, ovarian cancer, and desmoplastic small round cell tumors.

If patients are completing neoadjuvant chemotherapy and are ready for surgery, consider continuing chemotherapy if responding to and tolerating therapy. For those who cannot continue neoadjuvant chemotherapy, then consider delaying surgery for:

- 4–6 weeks in patients with high-grade appendiceal, colorectal, mesothelioma, or ovarian cancer;
- 2–4 weeks in patients with gastric cancer or desmoplastic small round cell tumors.

Defer surgery for peritoneal metastases from rare low-grade malignancies such as neuroendocrine tumors and gastrointestinal stromal tumors.

SARCOMA

A primary soft tissue sarcoma without metastatic disease on staging that needs surgery will be prioritized for the OR.

- Resection of newly diagnosed truncal/extremity atypical lipomatous tumors (ALTs), classic dermatofibrosarcoma protuberans without fibrosarcomatous degeneration, and desmoid tumors can be deferred for 3 months or more.
- Resection of other low-grade sarcomas with known indolent behavior (e.g. retroperitoneal well-differentiated liposarcoma) and low metastatic risk (e.g. myxoid liposarcoma, low-grade fibromyxoid tumor) can be deferred for short intervals depending on available resources and absence of symptoms.
- Consider deferral of re-excision for R1 margins in extremity/truncal lesions if OR resources are limited and there is no evidence of residual disease on post unplanned excision assessment.

If there is an indication for radiation therapy, plan to do it preoperatively. This can be administered in a lower-risk outpatient setting and will push out the timing of surgery by about 3–4 months. In addition, consider the use of preoperative radiation therapy as a bridge therapy to postpone surgery when appropriate, even if the treatment is not standard but there is evidence that it will not harm (i.e. preoperative radiation therapy in retroperitoneal liposarcoma).

Use of neoadjuvant chemotherapy for high-grade sarcomas at any site or for recurrent disease can be considered if it can be safely delivered in an outpatient setting as a means of deferring surgical intervention.

Use of neoadjuvant imatinib in localized GISTs as a bridge therapy can be considered even if a formal indication for neoadjuvant therapy does not exist, provided the mutation is sensitive.

Active observation protocols or low-toxicity systemic options can be considered for patients with recurrent disease. Surgery for recurrent disease can be offered to patients who:

- are likely to have relatively high chances of obtaining long-term disease control in the context of complete gross resection (e.g. long disease-free interval, solitary site of recurrence);
- require immediate palliation (e.g. due to bleeding, obstruction);
- do not have indolent histologies (e.g. well-differentiated liposarcoma in the retroperitoneum or classic solitary fibrous tumor) that can be managed with active observation.

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