CHAPTER 12
Special situations

This section will address synchronous tumors, those that occur during pregnancy, and advanvced tumors that may present with an obstructive, perforative, or hemorrhagic complication.

Synchronous tumors

Synchronous colon cancer is defined as cancer that is diagnosed at the same time as the primary cancer, or within 12 months of the diagnosis of the primary tumor. If the second tumor appears more than 12 months after the primary tumor, it is considered a metachronous tumor.

The synchronous tumor is different from the primary tumor in terms of histology and staging, with the primary tumor being the most advanced.

Synchronous tumors are also referred to in the literature as double tumors, twins, or multiple primaries. However, multiple primary tumors are those that simultaneously affect more than one organ and may or may not be included within multiple endocrine neoplasia syndromes.

The incidence is approximately 4-5% and they are associated with decreased OS. When located in the same segment of the colon, they are resected by segmental or standard colectomy, whereas those located in different segments may be treated with two segmental resections or a subtotal colectomy. Evidence 1B.[1] Although extended resection may not be associated with increased morbidity, it has not been shown to have benefit, and its functional outcomes significantly affect quality of life.[1]

In colon tumors associated with colonic diseases such as ulcerative colitis or hereditary syndromes, the extent of resection should consider this condition. As noted above, both hereditary cancers and those associated with inflammatory bowel disease are extended enough issues to be addressed in a separate work.

Colon cancer in pregnancy

Colon cancer during pregnancy is a diagnostic challenge. As gestational age increases, the incidence of colon cancer increases and is approximately 1/13,000. Symptoms are nonspecific and similar to those that occur during pregnancy. Diagnosis is usually made at a more advanced stage than in non-pregnant women, but survival appears to be similar. Colonoscopy during pregnancy is safe, especially from the second trimester onwards. There are no treatment guidelines or follow-up recommendations.

A multidisciplinary team must consider in each case the risk factors, the staging method, the type of oncological treatment, the risks of the therapy on the embryo or fetus, the prognosis of the mother and the urgency of starting treatment.

In advanced CRC diagnosed during the second or third trimester of pregnancy, a recent publication recommends starting 5-fluorouracil and oxaliplatin following the FOLFOX regimen with the aim of carrying the pregnancy to term, at least to 37 weeks.[2,3] Although the evidence is limited to case reports, the risk of prematurity is greater than the risk of exposure to chemotherapy prior to birth. There is a trend and recent evidence in multiple cohort studies of an improvement in outcome without an increase in neonatal, childhood or adolescent abnormalities due to fetal exposure to prenatal chemotherapy.[2,3] In these cases, there are two lives that must be considered and therefore the management decision is complex and must be multidisciplinary. In the case of Dobbs vs. Jackson Women Health Association, the US Supreme Court in 2022 ruled that each patient in association with their oncologist must have the ability to receive all possible treatment options to achieve therapeutic success.[4]

Treatment should be individualized according to the objectives and trimester of pregnancy, and the decision shared with the patient (Table 12.1).

Table 12.1. Colon cancer treatment according to the trimester of pregnancy.

Trimester	Surgery	Chemotherapy	Postponement	Early birth	Termination of pregnancy
1	Possible	Contraindicated	Possible	Contraindicated	Possible according to own laws
2	Possible	Possible	Possible	Possible ≥ 24 weeks	Possible according to own laws
3	Possible	Possible	Possible	Possible	Contraindicated

Adaptada de Cairl N, Shanker B.[2]

While surgery or postponement is possible at any time, chemotherapy is contraindicated in the first trimester. Early birth is possible only after 24 weeks, while termination of pregnancy depends on the laws of each place and can be performed during the first two trimesters, while it is contraindicated in the third.[2,3]

Advanced colon tumors

The term locally advanced colon cancer refers to infiltrating tumors, whether or not adherent to neighboring structures, in patients without distant spread. This is due to local invasion by tumor growth, the formation of adhesions, or the presence of a local perforation or fistula.[1]

T4 tumors are divided into two groups according to the TNM, AJCC:[5]

- T4a: invades the surface of the visceral peritoneum
- T4b: invades an adjacent organ or structure.

They correspond to: EIIB (T4aN0), EIIC (T4bN0), EIIIB (T4aN1/N1c) and EIIIC (T4aN2a; T4aN2b; T4bN1-2).

Resection of T4 colon tumors

T4 tumors have an incidence of 5 to 15% and are resectable in 21 to 43%.[6] In tumors that are adherent or invade adjacent organs, en bloc resection is recommended, with negative margins being achieved if the treatment is curative. Evidence 1B.[1]

Adhesions between colon tumors and neighboring organs should not be divided, since their histological analysis has shown that they contain malignant cells in 34 to 84% of cases.[7–9]

The presence of positive margins significantly worsens the outcome, in terms of progression, OS, and DFS, with an increased rate of local recurrence.[9–11]

In trained groups, both laparoscopic and robotic surgery allow adequate en bloc resection in selected cases.[12]

Extended resections

The goal of surgical treatment is radical resection of locally

advanced colon cancer. In R0 resections, a recurrence rate of 19% has been reported, while in resections with a microscopic positive margin or R1, the recurrence rate rises to 56%. The 5-year survival rate is 60% in R0 resections and 25% in R1. The R0 resection rate varies between 65 and 75% in T4a and decreases to 50% in T4b.[7,8,11]

The existence of distant metastases does not contraindicate extended resection, provided that R0 resection can be achieved. In the case of unresectable metastases, palliative colon resection is indicated in highly symptomatic patients and/or to avoid complications of the primary tumor (mainly obstruction).

Abdominal wall and soft tissue resection requires subsequent repair with or without prosthetic mesh. Invasion of large vessels contraindicates resection.[1]

If there is renal or ureteral involvement, nephrectomy should be considered, as well as resection of the ureter and subsequent repair. Invasion of the bladder requires partial or total cystectomy, with or without the construction of a neobladder. When the small intestine, other segment of the colon, or the adnexa are invaded, en bloc resection is indicated.

Involvement of the stomach, gallbladder, spleen and/or distal pancreas does not contraindicate en bloc resection, except for invasion of the hepatic pedicle or major vessels. Invasion of the duodenum may be partially resolved or require pancreaticoduodenectomy in very selected cases.

Postoperative morbidity varies depending on the type of multivisceral resection and ranges from 20 to 60%. The same occurs with mortality, which varies between 3 and 17% depending on the treatment performed. The 5-year survival rate for T4aN0 is 79%, for T4bN0 58.4% and is reduced to 40-54% for T4aN+ and 15-38% for T4bN+.[1,8,13]

Laparoscopic surgery for advanced tumors

According to the existing evidence, the feasibility of laparoscopic surgery in advanced tumors is high in centers with trained surgeons. Results similar to those of conventional surgery have been published regarding the number of resected lymph nodes, morbidity, mortality, R0 resection rate, recurrence and survival, with a conversion rate of 7% to 21%.[6,14,15]

In T4 tumors, laparoscopic surgery has longer operating time, less blood loss and shorter hospital stay, with a conversion rate of 8.2%. Absence of significant differences in mortality, recurrence and OS has been reported in R0 resections between laparoscopic and conventional surgery, with a follow-up of 40 months.[16,17]

Oophorectomy

Oophorectomy is recommended for ovaries that are macroscopically suspicious or involved by contiguous extension of the tumor. In contrast, routine prophylactic oophorectomy is not recommended. Evidence IC.[1]

However, in patients at risk of hereditary cancer, prophylactic oophorectomy should be considered in postmenopausal women after individual risk assessment. In patients with suspected or proven ovarian involvement, oophorectomy has been associated with a survival benefit and bilateral resection is indicated in these cases.[18]

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