Rectal cancer

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Introduction

This chapter covers rectal adenocarcinomas, by far the most frequent primary cancers of the rectum. Endocrine cancers and digestive lymphomas are the subject of other chapters in these guidelines.

The incidence of rectal cancers is 15,000 new cases per year in France. All stages combined, the probability of survival at 5 years is approximately 50%. This cancer exposes not only to metastatic spread (liver and lung), but also to very difficult recurrences that are generally not resectable.

Its treatment frequently relies on associating with surgical resection short preoperative radiotherapy or long radiotherapy often combined with preoperative chemotherapy, and in certain cases postoperative adjuvant chemotherapy. Since the treatments associated with surgery expose the patient to increased functional sequela and complications, the decision on the therapy adapted to each patient requires a specialized pretherapy workup, a clinical examination by a surgeon, then discussion in a multidisciplinary consultation meeting associating gastroenterologists, surgeons, radiotherapeutic oncologists, chemotherapists, and pathologists.

The quality of the surgical excision and the quality of the radiotherapy are vital factors in the therapy’s success, both in terms of survival and functional.

Classification

• The pathological examination should specify the state of the lateral distal margin (clearance) of the resection [1] as well as whether the mesorectum is intact. A distal or lateral margin ≤1 mm is considered to be invaded (resection R1).
• With preoperative treatment, the TNM stage on the operative specimen is given in ypTNM.

Pretherapy explorations

References

1/ The patient should be questioned to search for family antecedents of colorectal cancer, adenoma or other cancer that may suggest HNPCC syndrome.
2/ Digital rectal examination is the most important part of the clinical examination, performed on the empty rectum in dorsal decubitus position, thighs flexed, in left lateral decubitus position, or in genupectoral position. This examination evaluates:
   — the distance of the tumor in relation to the anal margin and the puborectalis muscle;
   — the size measured in centimeters;
   — the mobility of the tumor in relation to the deep parietal planes;
   — the circumferential extension.
3/ Complementary examinations to the local-regional workup are rectoscopy, rectal echoendoscopy (REE), and MRI:

• Rectoscopy with tubes allowing biopsy is done in the genupectoral position or in the left lateral decubitus position on an empty rectum. It evaluates the circumferential extension, lesion size, and measures the distance between the lower pole of the tumor and the anal margin.
• The REE provides a precise extension assessment. It measures the distance between the lower pole of tumor infiltration and the pelvic floor plane (levator ani plane). Whether performed with a blind probe or echoendoscope, it uses a uTN classification derived from the TNM typing (uT1: mucosa and submucosa, uT2: muscularis, uT3: perirectal fat, uT4: neighboring organ). Diagnostic precision is evaluated at 87.5% for parietal extension and 76% for lymph node extension [2]. The advantages have been demonstrated to confirm parietal invasion or that the tumor is superficial (mucosa or submucosa). At 7, 5, and 12 MHz, REE does not differentiate mucosa from submucosa. High-frequency probes (15-, 20-, or 30-Mhz), better adapted for studying superficial tumors, can distinguish intramucosal tumors (m) from cancers invading the submucosa (sm), and among these establish a subdivision.

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in three degrees according to the depth of involvement (sm1, 2, 3). Diagnostic precision to separate m and sm1 tumors (with no risk of lymph node invasion), sm2 and more, is between 85% and 89% [3,4]. With REE visualization of adenopathies that look metastatic (leading to a decision for preoperative treatment) but associated with a T1 or T2 tumor, ultrasound-guided cytopuncture (which highly increases the value of REE in diagnosis) [5] can be proposed.

• Pelvic MRI is done when there is suspicion of a large tumor, T3 or T4, whose R0 resectability is not certain after the preceding explorations. It shows the rectal fascia (external limit of the mesorectum) and it is possible to measure the distance between the lateral margin of the tumor or a lymph node and this fascia [6-9]. If the shortest distance is <1 mm, surgical resection carries the risk of being incomplete. This distance can increase after neoadjuvant treatment. MRI studies more the tumor infiltration of the anal sphincter.

4/ The metastatic workup searches for liver and lung metastases using thoracoabdominal CT.

5/ The search for associated lesions is done with coloscopy, which can diagnose synchronous cancers, adenomas (loop ablation possible), and associated diverticula. It should be redone 3–6 months after surgery if preoperatively it was incomplete.

Alternatives

— Abdominal ultrasound and chest x-ray if thoracoabdominal CT is unavailable.
— MRI and PET scan: when there is doubt on whether a lesion is metastatic as seen on TDM, MRI (liver) and/or PET scan with FDG-glucose (all locations) can be necessary to reject this hypothesis.
— The advantage of the carcinoembryonic antigen dosage has not reached consensus.

Operability and resectability criteria

Operability

— Physiological age more than chronological age should be considered. Managing older and older patients requires adapting therapeutic strategies to this particular population.
— The patient’s sex and morphology: the surgical approach to the rectum can be difficult in men because of the narrowness and the depth of the pelvis. Overweight and height can also be a source of operative problems during tumor excision, during the attempt to preserve the sphincter, and even during the creation of a definitive or temporary stoma.
— Co-morbidity: it is assessed in collaboration with the anesthetologist. It is recommended to use the American Society of Anesthesiology (ASA) classification:

1. patient in good health
2. moderate involvement of a major function
3. severe involvement of a major function
4. severe involvement of several major functions
5. patient moribund with life expectancy less than 24 h

Resectability

1. Preoperative: when the lesion is accessible on digital examination (tumors in the lower and middle thirds of the rectum), the rectal examination done by a trained clinician (possibly with anesthesia, during coloscopy, for example), provides information on the possibilities for resecting the lesion. It should be combined with a vaginal examination in women for precise evaluation of the rectovaginal wall. MRI is the best complementary examination to specify local-regional invasion.

A tumor is immediately considered nonresectable if it is fixed at digital rectal examination, if it invades a neighboring organ that cannot be removed en bloc with the tumor, or if the lateral margin is <1 mm on MRI.

2. Intraoperative: exploration can show unexpected extension to neighboring organs or distant lesions (peritoneal carcinosis and/or liver metastases), which prohibit tumor resection. These cases should remain the exception.

When a tumor presents an unsuspected local-regional extension during the preoperative workup, surgical treatment should be interrupted for neoadjuvant treatment, if this has not been done before.

In cases of sacral or vascular extension, it is possible to provide palliative excision; the specimen is then evaluated for completeness: R1, microscopic remainder, R2, macroscopic remainder. It is important to identify the zone of incomplete excision with metallic clips. If the tumor is large and/or developed toward the ureters, the bladder, and/or the prostate in men, the uterus and/or vagina in women, operative conditions should aim for wide excision with curative intent (monobloc excision). These conditions include information to the patient, preparation of the surgical team for this type of intervention, identification of a urinary stoma and digestive site.

Treatment

Methods

SURGERY

The quality of surgical excision is an essential factor in the prognosis of rectal cancer. In multivariate studies analyzing the prognosis of rectal cancers operated with curative intent, the surgeon is a prognostic factor independent of the other variables studied. Rectal resection modalities vary with the tumor seat, its extension to neighboring organs, the patient’s condition, and the condition of the anal sphincter. Small tumors of the rectum can, in certain limited conditions, be removed through the transanal approach of with endoscopy.

Rules for oncologic excision of rectal cancer

References

— Excision of the rectum is undertaken after a complete workup of the abdominal cavity searching for peritoneal or hepatic extension. Biopsy of any suspicious lesion is recommended to guide later management of the patient.
— Lower mesenteric lymph node removal is warranted without connecting the inferior mesenteric artery level with...
the aorta. Ligation at 1 cm from the aorta gives comparable oncological results and spares the pelvic nerves that run at this level. Ileal lymph node removal is not recommended. When there are suspicious lymph nodes in these areas, they should be sampled for extemporaneous examination and a clip placed for later retrieval. Histological examination of at least 12 lymph nodes is necessary to properly classify the tumor.

Mesorectal excision significantly reduces local-regional recurrence and limits the urinary and sexual sequelae of rectal resections. It is recommended to resect the entire mesorectum of the tumors of the middle and lower thirds of the rectum, whether it be a resection with anastomosis or an abdominoperineal resection. When there are tumors in the upper third, the section of the mesorectum should go 5 cm under the lower limit of the tumor. The operative and pathological report should mention whether the mesorectum excision is complete and without breakage, because it is an important prognostic factor [10]. Excision of the rectum and mesorectum identifies the lateral safety margins and should be reported specifically in the pathological report. Measuring them is indispensable to define whether the resection is complete and has a prognostic role. The distal safety margin (the distance between the lower pole of the tumor and the distal cuttings of the rectum) should be ≥ 1 cm, the distance on a specimen that is not fixed or in traction [11]. Particular care must be taken to prevent perforation of the rectum or the mesorectum during excision.

In cases of abdominoperineal resection, perineal excision should be limited, because a wide excision does not contribute to the oncological benefit, but delays local healing and is a source of discomfort. Primary closure of the perineum with drainage exiting by the abdomen is recommended. Filling in the pelvis using the great omentum is done by some authors. The patient must be informed and prepared for definitive colostomy whose site is localized before surgery. The assistance of a specialized nurse is essential for these patients.

Alternatives

Consensus has not been reached on systematic intraoperative liver ultrasound, but it can be recommended when there is doubt or a lesion is identified during surgery.

Indications on the types of excision

References

The essential factors in the choice of excision type are the seat, the local-regional extension of the cancer, the patient’s morphotype, and the surgeon’s experience.

When there is doubt on preserving the sphincter, the opinion of an expert surgeon is recommended and should be requested before any preoperative treatment.

- **Cancer of the upper rectum**: excision of the rectum and mesorectum up to 5 cm under the lesion’s lower pole, mechanical colorectal anastomosis a priori not protected.

- **Cancer of the middle rectum**: complete excision of the mesorectum, at least 2 cm of distal margin on the rectum, re-establishment of continuity depending on the remaining rectum by low colorectal or protected coloanal anastomosis. Adding a 5- to 6-cm-long J-pouch is recommended (level of evidence A) when resection does not preserve at least 3 cm of rectal stump above the levator ani plane. If a pouch is impossible, a coloplasty above the anastomosis or lateral-terminal anastomosis can be done.

- **Cancer of the lower rectum**: complete excision of the rectum and the mesorectum.

If a distal margin of at least 1 cm (level of evidence B) is obtained immediately or after intersphincter dissection (expertised centers): protected coloanal anastomosis with colon pouch (level of evidence B).

If the distal margin is less than 1 cm [11] or if there is a particular reason (preoperative incontinence, undifferentiated tumor, technical difficulties related to the narrowness of the pelvis or obesity): abdominoperineal resection.

Resection of the rectum with re-establishment of continuity

References

- The rectal stump should be clamped under the tumor before mechanical stapling and irrigated before being sectioned (level of evidence B).

- Continuity can be re-established by a manual or mechanical colorectal anastomosis via the abdominal approach, by a trans-suture circular mechanical colorectal anastomosis via the transanal approach, or by manual coloanal anastomosis via the transanal approach after mucosectomy of the remaining rectal stump.

- Temporary fecal deviation is recommended when there is coloanal anastomosis and lower colorectal anastomosis. Closing the stoma via an elective approach is done in the 2nd to 3rd months after surgery, after radiological follow-up of the anastomosis.

Alternatives

- Temporary fecal derivation using lateral ileostomy.

- In cases of sphincter incompetence with preoperative anal incontinence that do not seem related to tumor size, lower colorectal anastomosis is not recommended. The Hartmann procedure, respecting the oncological rules described above, can be an alternative.

- Celioscopic or abdominal-assisted surgery: the technical feasibility of rectal cancer resection using celioscopy has been demonstrated. However, the oncological efficacy of the celioscope has not been demonstrated. Celioscopy should be reserved for expert centers who are evaluating this technique.

Local excision by the transanal approach

References

Surgical excision using the parachute or Faivre’s electrosection by traction flap technique is a choice method that should be preferred over tumor destruction techniques (electrocoagulation or laser). It allows histological examination of the total lesion, which is indispensable to ensure that treatment is well adapted. Excision should include the entire thickness of the rectal wall involved with the tumor, with a 1-cm peripheral safety margin.

Endoscopic excision is recommended (level of evidence C) when there is uT1m or uT1sm1 tumor [12] after exploration using an echoendoscopy miniprobe if it is uN0, well differentiated, and if it can be removed en bloc and not fragmented. It should be sent to the laboratory pinned and oriented.

In all other cases, conventional surgical excision with complete excision of the mesorectum is suggested.

**Radiotherapy (RT)**

Rectal adenocarcinomas are moderately radiosensitive tumors. Radiosensitivity depends on the dose. Using a preope-
the disease. Continuous perfusion 5FU or the combination of 5FU-folinic acid in boluses are useable modalities. When there is lymph node invasion, RCT combination is recommended after primary surgery for any tumor above T2 (19, 20).

Preoperative and postoperative RCT were compared in a phase III study [21]. It favored preoperative treatment because of better tolerance and especially better local control (6% local recurrence vs 13%).

Preoperative association of FU/FOL chemotherapy with RT has not been evaluated with the mesorectum excision technique. In the FFCD trial published as an abstract [22], overall survival at 5 years was the same in both arms (67% and 68%), but the local 5-year recurrence rate was 16.5% vs 8% in the RCT arm. The same holds true for the EORTC trial, also published as an abstract [23]: adding chemotherapy to preoperative RT pushes 5-year overall survival from 64.8% to 65.6% (NS), 5-year progression-free survival from 54.4% to 56% (NS), but makes the local recurrence rate drop from 17.1% to 8.8% (p=0.002). It increases the acute toxicity of the radiotherapy [24, 25]. It has not been demonstrated that it increases the rate of sphincter preservation, but most often the decision for sphincter preservation was not discussed again after preoperative treatment [26].

When the tumor comes close to or reaches the fascia recti plane, or a neighboring organ, found in particular on preoperative pelvic MRI, RCT (45 Gy in 5 weeks) could make the tumor R0 resectable, as has been shown for locally advanced tumors [27] (level of evidence B).

CHEMOTHERAPY

Chemotherapy has been evaluated after surgery or alone, or combined with RT. It only contributes to survival when it is combined with pelvic RT.

In cases of lymph node invasion and if the patient has received preoperative RT, the indication for adjuvant chemotherapy, whose efficacy has not been demonstrated in phase III trials, should be discussed in the multidisciplinary consultation meeting.

Strategy

The therapeutic strategy depends on the echoendoscopic tumor classification (T1 and T2 tumors) or using MRI (T3 and T4 tumors) before therapy. This is systematically decided on in the multidisciplinary consultation meeting.

T1, N0, M0 TUMORS

References

- Rectum resection carried out following the modalities discussed above is the standard treatment.
- After pathological examination of the operative specimen (salvaging false-negatives from echoendoscopy), complementary treatment is not useful for pT1m and T1sm1-N0 tumors. With pT1sm2–T4, N0 tumors, or if lymph nodes are invaded, or if excision is incomplete (margin ≤1 mm) or if vascular and/or lymphatic emboli are described, complementary surgical excision with excision of the mesorectum is recommended (level of evidence C) (level of recommendation B).
- If classed pTNM >T2 or N+, postoperative treatment: see above.
Alternatives

- Abdominoperineal resection should be exceptional.
- Local excision: T1NO (REE) lesions of the lateral or posterior sides of the lower third of the rectum, less than 3 cm in diameter, histologically well differentiated, can be locally excised via the transanal approach. This type of excision should be reserved for tumors classified uT1m or uT1sm1 after exploration with miniprobe echoendoscopy, but this examination is difficult to access. When there is incomplete excision or deep tumor extension above what is expected, resection of the rectum is necessary following the above-described modalities, with no delay (level of evidence B).
- Endoscopic resection and contact RT (see above).

T2, N0, M0 TUMORS

References

- Resection of the rectum done according to the modalities described above is the standard treatment.
- With pTNM >T2 or N+, postoperative treatment, see above.

Alternative

Abdominoperineal resection should be exceptional.

T3 NO, AND T1–T3 N+ TUMORS

References

- Upper rectum and rectosigmoid junction: surgery with excision of the rectum and the mesorectum to 5 cm under the tumor’s lower pole, with no preoperative treatment (level of evidence B).
- Middle rectum: surgery with complete excision of the mesorectum preceded by RCT rather than RT alone (level of evidence A). When there is limited invasion of the mesorectum, with a lateral margin with the rectal fascia >1 mm on MRI, the toxicity of the RCT combination and the least risk of R1 resection can mean a choice of radiotherapy alone.
- Lower rectum: surgery with complete excision of the mesorectum preceded by RCT (level of evidence A) rather than preoperative RT alone (level of evidence B).
- Postoperative treatment depends on the analysis of the operative specimen and the treatment received preoperatively.

If the patient has received preoperative RCT or RT

References

If the lymph nodes are not invaded (ypT1-T2-T3, N0 tumor, or stage I or II), postoperative treatment is not useful (expert agreement)

Alternatives

- In cases of lymph node invasion (any pT, N1-N2 or stage III) surgery alone and postoperative chemotherapy are the alternatives that should be discussed depending on the factors of poor prognosis: ypT4, N2, low number of lymph nodes examined, perineural sheathing, mesorectum not totally excised.
- Chemotherapy is a combination of 5FU and folinic acid, the reference being the FUFOL protocol, with as alternatives LV5FU2 or oral 5FU (UFT + folinic acid or capecitabine) (expert agreement).
- With R1 or R2 resection, chemotherapy combining infusional 5FU and oxaliplatin or irinotecan for 6 months is recommended (expert opinion).

If the patient has not received preoperative RCT or RT

References

- If there is no lymph node invasion (pT1-T2-T3 N0 or stages I or II), postoperative treatment is not useful (level of evidence A).
- If there is lymph node invasion (any pT N1-2 or stage III), or pT4 tumor, postoperative RCT with continuous FU is recommended (expert agreement).
- With R1 or R2 excision, RCT is recommended (expert agreement)

Alternatives

- Alternatives of chemotherapy associated with radiotherapy: 5FU-folinic acid (FUFOL), LV5FU2, oral 5FU (expert opinion).
- If there is no lymph node invasion, postoperative RCT with FU can be proposed in cases of lateral margin <2 mm (expert agreement).
- Whatever the pTNM stage, if mesorectum excision is not total (incompleteness observed by the surgeon or the pathologist) and a lateral margin <2 mm are arguments in favor of postoperative RCT (expert agreement)
- In cases of optimal surgery (complete excision of the mesorectum and lateral margin >2 mm), postoperative chemotherapy with no RT is an alternative (expert agreement).
- In cases of contraindication to postoperative radiochemotherapy, simple postoperative chemotherapy, even therapy abstention can be chosen (expert agreement).

Trials

- FFCD-FNCLCC-GERCOR-SFRO ACCORD 12 phase III intergroup project: radiotherapy 50 Gy in 5 weeks associated with capecitabine-oxaliplatin versus radiotherapy 45 Gy and capcitabine alone, for adenocarcinomas of the middle rectum T3 NO-N2 and T2 of the lower rectum. Coordinator: Prof. JP Gérard.
- Pan-European PETACC 6 project comparing two types of preoperative RCT and two types of postoperative chemotherap: RT-Xeloda then Xeloda vs RT-Xelox then Xelox. Coordinator: Prof. HJ Schmoll.

T4 TUMORS, T3 TUMORS WITH UNCERTAIN R0 RESECTION, MO

These are T4 tumors and T3 tumors with a lateral margin <1 mm on MRI.

References

- RT 45 Gy in 5 weeks and concurrent chemotherapy (level of evidence B) with continuous FU, then attempt en bloc resection.
- When there is regional extension in a young subject, if there is no distant adenopathy, mutilating wide excision (genitourinary organs or sacrum) should be discussed on a case by case basis if R0 resection can be expected (level of evidence C).
- If excision is impossible, RT should be pursued up to 60 Gy, associated with endoscopic treatments (stent or hemostasis) or with upstream colostomy if necessary.
- Postoperative treatment in cases of R1 or R2 resection: when there is no preoperative treatment, RCT is recom-
mended (expert agreement). If neoadjuvant treatment has been received, chemotherapy combining infusional 5FU and oxaliplatin or irinotecan for 6 months is recommended (expert opinion).

Alternatives

- Alternatives to chemotherapy associated with radiotherapy: 5FU–folinic acid (FUFOL), LV5FU2, oral 5FU, e.g., capecitabine 1600 mg/m²/day 5/7 days (expert opinion).
- Intraoperative RT if there is macroscopic tumor remaining (R2 resection).
- For patients who cannot be operated on for medical reasons, RCT or exclusive RT can be proposed.
- For pT4 and/or pN1–N2 tumor that has not been classed T4 before surgery and that has not received preoperative treatment, radiochemotherapy is recommended (expert agreement). In case of contraindication to postoperative radiochemotherapy, simple postoperative chemotherapy, even therapy abstention can be an option (expert agreement).

Which treatment for the primary tumor when there is nonresectable synchronous metastases?

References

Some limited metastatic extensions can become resectable after chemotherapy and cases must be discussed initially and after chemotherapy, in the multidisciplinary consultation meeting with a surgeon specialized in hepatic surgery.

Altogether, for short-term poor-prognosis tumors, the objective of treatment is to maintain the patient's quality of life, if possible avoiding both painful pelvic progression and mutilating surgery (1994 Consensus Conference on Rectal Cancer). No prospective randomized studies are available to guide the therapeutic choices, which can only be made after discussing each case in a multidisciplinary consultation meeting, before and during chemotherapy. Prognosis relies most often on the progressive nature of the metastases, and systemic chemotherapy prevails over treatment of the primary rectal tumor. However, this can become possible after medical treatment.

SYMPTOMATIC RECTAL TUMOR

Alternatives

Alternatives depend on the nature and the intensity of symptoms related to the primary tumor:

- Endoscopic stent (if the tumor’s lower pole is more than 6 cm from the anal margin) or colostomy if there is stenosing progression, argon plasma or laser in case of hemorrhage, then RCT, then chemotherapy (see section on metastases of colorectal cancers).
- Excision +/- placing catheter for hepatic intra-arterial chemotherapy if isolated liver metastases (in a specialized center), then chemotherapy.
- Short preoperative RT (25 Gy in five fractions), then surgery 1 week later, then systemic chemotherapy.
- Chemotherapy combining 5FU, folinic acid, and oxaliplatin [28], aiming for tumor symptom relief, then 4–8 weeks later RCT with chemotherapy that is not only radiosensitizing, but also effective on metastases (e.g., LV5FU2 or FOLFOX4, expert agreement), then pursuit of chemotherapy. Excising the rectal tumor and metastases should be discussed again in a multidisciplinary consultation meeting if there is response.

IN CASES OF ASYMPTOMATIC RECTAL TUMOR

References

- RT + chemotherapy, with chemotherapy that is not only radiosensitizing, but also effective on metastases, e.g., LV5FU2 or FOLFOX4 (expert agreement).
- The strategy following treatment will depend on the progression tests done 2 months later.

Alternatives

Alternatives after 2 months

- In cases of local control and metastatic progression, second-line chemotherapy or palliative care is proposed.
- In cases of local control, regression, or stability of metastases, chemotherapy is pursued. Resection of the tumor or metastases should be discussed in a multidisciplinary consultation meeting.
- In cases of local and general progression, second-line chemotherapy should be attempted; if the patient’s general condition is not suitable, an endoscopic stent or colostomy if there is stenosing progression, or, if there is hemorrhage, endoscopic coagulation with argon plasma should be proposed.

SYMPTOMATIC METASTASES

References

Chemotherapy combining irinotecan or oxaliplatin with an infusional 5FU–folinic acid (e.g., LV5FU2) in view of increasing the chances of obtaining a symptomatic effect related to the tumoral response (expert agreement).

Alternatives

Combining FUFOL (e.g., LV5FU2) or oral 5FU if there is a contraindication to oxaliplatin or irinotecan.

See the chapter on metastatic colorectal cancer for more details on the different lines of chemotherapy possible.

Post-therapy monitoring

Available diagnostic means are:

- Clinical examination, in particular manual pelvic examinations.
- Biology liver tests. The dosage of alkaline phosphatases is sensitive for screening liver metastases, but it has low specificity.
- Abdominopelvic ultrasound remains the examination with the best cost-benefit ratio for screening liver metastases. The sensitivity for detection of roughly 85% can be reduced by technical problems or by certain tumor characteristics (isoechoic; size <10 mm; peripheral, subcapsular, or dome location). Specificity is approximately 95%. It can also show adenoma or carcinoma.
- Chest x-ray has little sensitivity but is inexpensive in the search for lung metastases.
• Coloscopy screens for metachronous colorectal lesions, but it has no interest for early diagnosis of local recurrences that are extraluminal in the majority of cases.
• REE with possible ultrasound-guided cytopuncture is useful to confirm a suspected local-regional recurrence. It can also detect adenoma or early recurrences that are still at an asymptomatic stage. After a radiotherapy, image interpretation is sometimes difficult. After resection of the rectum in women, endovaginal ultrasound replaces REE.
• Other morphological examinations (TDM, MRI) are used more in the preoperative workup for metastases, or in third-line in cases that are difficult to diagnose. The PET scan is useful in the preoperative workup for metastases and to differentiate fibrosis from postoperative recurrence when there is a pelvic mass.
• The ACE dosage is the main marker available. Its sensitivity for detecting recurrences is better for liver metastases than for local-regional recurrences. Its specificity is low and the impact on survival of its dosage seems low.

Monitoring is only advantageous for patients capable of sustaining reoperation or chemotherapy.

According to the FNCLCC recommendations, the protocols below can be proposed.

PT1–T2 PATIENTS

References

• Clinical examination every 3–4 months
• Liver ultrasound every 6 months for 2 years then every year for 3 years, and chest x-ray every year for 3 years.
• Colonoscopy at 1 year then 3 and 5 years when results normal.

Alternatives

REE every 3–4 months the first 2 years, then twice a year the 3 following years for patients who have had transanal resection.

PT3–T4, ANY N PATIENTS

References

• Clinical examination every 3–4 months
• Liver ultrasound every 3 months for 2 years, then every 6 months for 3 years, and chest x-ray every 6 months for 3 years.
• Colonoscopy at 1 year, then 3 and 5 years if results normal.

Alternatives

• ACE dosage (if initially high)
• REE
• TDM if abdominoperineal resection

AFTER 5 YEARS

Reference

Annual clinical examination and chest x-ray and colonoscopy every 3 or 5 years can be proposed depending on whether adenomas are discovered.

Treatment of local or regional recurrence

References

• Local or regional recurrence of rectal cancers can be treated with curative treatment. This is the only chance of ensuring prolonged survival: when curative excision is performed, it can lead to 5-year survival on the order of 20%.
• Pain, a major problem during progression of local or regional recurrence of rectal cancers, should be effectively combated with adapted antalgic treatments. When pain is difficult to control, algology specialists should be consulted.

Alternatives

• Palliative resections, leaving the tumor in place against the pelvic wall or sacrum can be discussed. In these circumstances, overall survival is less than 3 years with a median survival of 12 months. However, they are indicated when improving patient comfort is an issue when there is symptomatic vesical invasion or secondary infection fistulas. Combined treatments can improve prognosis of palliative excision.
• Colostomy can become necessary because of intestinal obstruction or the significance of the rectal disease.
• Palliative endocavitary treatments and expanding stents deployed with the endoscope can avoid recurrences in favorable cases or delay their onset.
• Radiotherapy +/- chemotherapy can be the only palliative treatment of local or regional recurrence or be indicated before reoperation if the patient has not been irradiated during the first intervention.
• Chemotherapy with oxaliplatin or irinotecan associated with infusional 5FU can have an impact on symptoms. Its influence on survival has not been studied.

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Annex I. WHO Classification of rectal cancers

**TNM (UICC 2002)**

- **Tis**: Epithelial tumor (carcinoma in situ) or invading the chorion,
- **T1**: Tumor invading the submucosa
- **T2**: Tumor invading the muscularis
- **T3**: Tumor invading the perirectal fat
- **T4**: Tumor invading at least one neighboring organ
- **Tx**: Primary tumor cannot be assessed
- **N0**: no lymph node metastases
- **Nx**: lymph nodes not evaluated
- **N1**: 1–3 regional metastatic lymph nodes
- **N2**: 4 or more regional metastatic lymph nodes
- **M0**: no metastases
- **M1**: distant metastases (including supraclavicular lymph nodes)

Examination of at least 12 regional lymph nodes is necessary for proper evaluation of the lymph node status. If this number is not reached, the specimen should be examined by a pathologist. However, if there is no lymph node invasion, even if the number of lymph nodes usually examined is not reached, the UICC (2002) and the AJCC explicitly recommend classifying patients with no invaded lymph nodes as N0 and not Nx.

- **Stage I** = pT1-T2 N0 M0 = perirectal fat intact with no lymph node metastasis
- **Stage IIA** = pT3 N0 M0 = perirectal fat involvement without lymph node metastasis
- **Stage IIB** = pT4 N0 M0 = mesorectum invaded and/or neighboring organs invaded, without lymph node metastasis
- **Stage IIIA** = pT1-T2, N1 M0
- **Stage IIIB** = pT3-T4, N1 M0
- **Stage IIIC** = any T, N2 M0
- **Stage IV** = any T, any N, M1 = distant metastases
REFERENCES


