TECHNOLOGY

Colorectal cancer liver metastases: when surgery is possible

18 November 2026 · 6 min read

Liver metastases are not always a death sentence. We explain which methods can remove or destroy them, what the prognosis depends on and what the experience of the National Cancer Institute has shown.

The liver is the most common site to which cancer of the colon and rectum spreads. About half of patients develop liver metastases at some stage of the disease, and in 15–20% they are already found at the time of diagnosis.

The word “metastases” sounds like a final verdict, but in colorectal cancer in particular this is not the case. If the metastases can be removed completely, a significant proportion of patients live for years. This article covers the current options for such treatment, based on publications by surgeons at the National Cancer Institute in Kyiv, whose authors include Artem Mykytiuk.

Synchronous and metachronous metastases

Synchronous metastases are detected at the same time as the bowel tumour. Metachronous metastases appear later, after the primary tumour has been treated. This distinction is not a formality: both the choice of treatment approach and the prognosis depend on it.

What the prognosis depends on: the Tumour Burden Score

Surgeons at the National Cancer Institute analysed the outcomes of 351 liver resections performed between 2002 and 2024. To estimate the prognosis, they used the Tumour Burden Score, which takes two things into account: the size of the largest metastasis and the number of lesions.

The difference between the groups was striking. Five-year survival after surgery:

- low burden — 56%
- moderate — 50%
- high — only 7%.

Across all patients, 51% were alive five years after resection. The takeaway for patients is simple: the earlier metastases are detected, the fewer there are and the better the chances. That is why, after treatment for bowel cancer, it is so important not to miss follow-up CT scans and blood tests for the tumour marker CEA.

Liver resection: the main treatment

Surgical removal of metastases remains the gold standard. The liver is able to regenerate, so a large part of it can be removed as long as the rest is healthy and sufficient to do its job.

More and more of these operations are performed laparoscopically, through small incisions. According to research, the results are comparable with open surgery, while blood loss is lower and there are fewer complications and fewer days in hospital.

One operation instead of two

When metastases are synchronous and few in number, the bowel tumour and the liver lesions can sometimes be removed in a single procedure. The National Cancer Institute team described one such case: a 42-year-old man with a tumour of the transverse colon and two liver metastases had both part of the colon and two segments of the liver removed laparoscopically, through seven small incisions. The operation lasted almost six hours, with blood loss of about 150 ml. Afterwards a complication developed that was treated without a further operation; the patient then received chemotherapy, and 8 months later there was no recurrence.

This approach is not suitable for everyone, only for physically robust patients with limited liver involvement. A major liver resection is not combined with high-risk bowel surgery.

Two-stage hepatectomy: when metastases are in both lobes

If metastases are scattered across both lobes and removing all the lesions would leave too little healthy liver, the operation is split into two stages. First, one lobe is cleared and the blood supply to the other is blocked (by embolisation or ligation of the portal vein). Within a few weeks the healthy part of the liver grows, and then the second stage is carried out.

In a series of 41 such patients, five-year survival was 37% — and these are patients who were previously considered inoperable. The path is a difficult one: about half of the patients had severe complications after the second stage, although with growing experience their share fell from 75% in 2015 to 32% in 2023. Such operations should be performed in centres with extensive experience.

Radiofrequency ablation: when surgery is not possible

Radiofrequency ablation (RFA) destroys the tumour with heat. Under ultrasound guidance, an electrode is inserted into the lesion and the tissue is heated to 50–100 °C for several minutes. The method is used for metastases up to 3 cm when removing them is impossible or too risky because of other illnesses.

An analysis of 33 patients who had RFA for colorectal cancer metastases showed that the size and number of lesions, the location of the tumour and the number of chemotherapy courses had no significant effect on survival. The decisive factor was when the metastases appeared. Among those still alive, 78% had metachronous metastases, while all those who died had synchronous metastases. In other words, RFA works best for metastases that appear later.

The authors stress that if a metastasis can be removed surgically, resection is preferred. RFA is an alternative or an addition to it.

The decision is made by a team

The choice between resection, a two-stage operation, ablation and chemotherapy is made by a multidisciplinary team: a surgeon, an oncologist and a radiologist. They take into account the number and size of the metastases, where they are located, the volume of healthy liver, the molecular characteristics of the tumour and the patient's general condition. Surgical treatment is almost always combined with chemotherapy before or after the operation.

Frequently asked questions

Can you live with part of your liver? Yes. The liver restores its volume within a few weeks, and as long as enough healthy tissue remains, its function does not suffer.

How can metastases be detected early? By sticking to the follow-up schedule after treatment for bowel cancer: an examination and a CEA test usually every 3–6 months, and CT of the chest and abdomen according to the schedule set by your oncologist.

If you need a second opinion on your treatment plan, see a surgical oncologist. You can book an appointment using the phone numbers in the contacts section.

Sources

- Burlaka A., Bezverkhnyi V., Mykytiuk A. et al. Вплив індексу пухлинного навантаження печінки на післяопераційні ускладнення та виживаність при метастатичному колоректальному раку. Клінічна онкологія. 2024;56(4). doi.org/10.32471/clinicaloncology.2663-466X.56-4.33480 (CC BY-NC-ND)

- Mykytyuk A. I., Burlaka A. A., Lukashenko A. V. et al. Досвід двоетапних резекцій при білобарних метастазах колоректального раку в печінку: хірургічні результати та фактори прогнозу. Клінічна онкологія. 2024;55(3). doi.org/10.32471/clinicaloncology.2663-466x.55-3.32966 (CC BY-NC-ND)
- Valikhnovska K. H., Mykytyuk A. I. Results of radiofrequency ablation of colorectal cancer metastases in the liver. Ukrainian Journal of Clinical Surgery. 2026;93(2):50–56. doi.org/10.26779/2786-832x.2026.2.50 (CC BY 4.0)
- Burlaka A., Rozhkova V., Mykytuk A. et al. Laparoscopic S7 and S4 segmentectomy combined with transverse colon resection for synchronous metastatic colorectal cancer: a case report. Journal of Surgical Case Reports. 2025;(7):rjaf476. doi.org/10.1093/jscr/rjaf476 (CC BY-NC 4.0)
- Burlaka A., Skyba V., Zemskov S., Mykytiuk A. et al. Клінічний випадок лапароскопічної симультанної резекції печінки та резекції поперечної ободової кишки. Клінічна онкологія. 2025. doi.org/10.32471/clinicaloncology.2663-466x.34491 (CC BY-NC-ND)

This article is for information only and does not replace a consultation with a doctor. The treatment approach is decided by a doctor after an in-person examination and tests.