

The management of colorectal cancer

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The treatment regimen and the extent of surgery depend on the location and stage of a colorectal cancer.

Colorectal cancer (CRC) is the second most common cause of cancer death in Australia, being responsible for 10% of cancer deaths in 2006.¹ In this country, the lifetime risk of developing CRC before the age of 75 years is approximately one in 22 people, one in 19 for males and one in 27 for females, with the risk increasing sharply after 45 years of age.¹ Australia's increasingly ageing population may lead to an increasing incidence of this cancer.

Remember

- 'Alarm' symptoms and signs for CRC include bleeding per rectum, change in bowel habit, abdominal or pelvic pain, tenesmus, weight loss and iron-deficiency anaemia. Patients with these features will require a colonoscopy, and those with iron-deficiency anaemia will also require a gastroscopy.
- Individuals at increased risk of developing CRC include those with a personal history of the cancer or adenoma, those with inflammatory bowel disease and those with a family history of the cancer, adenoma or gynaecological cancers. First-degree relatives of patients with CRC have a twofold increased lifetime risk of developing CRC themselves. A person with one first-degree relative with CRC diagnosed at age 55 years or older has up to a twofold increased risk of developing CRC; with one first-degree relative diagnosed younger than 55 years, a three- to sixfold increased risk; and with two first-degree relatives on the same side of the family diagnosed at any age, a three- to sixfold increased risk.

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- Patients with a significant family history of CRC (i.e. one first-degree relative diagnosed younger than 55 years or two first-degree relatives on the same side of the family diagnosed at any age) require regular colonoscopies – every five years starting at age 50 years or at an age 10 years younger than the age of first diagnosis of CRC in the family, whichever comes first.² Patients with a familial CRC (hereditary nonpolyposis CRC and familial adenomatous polyposis) and their families will require genetic counselling and more frequent colonoscopy (every one to two years), and should also be screened regularly for other associated malignancies.²
- A multidisciplinary team approach, including colorectal surgeon, medical oncologist, radiation oncologist, nurses, stomal therapist, dietitian, social worker and physio-therapist, is recommended for the management of patients with CRC. GPs have an important role in population screening and specialist referral of symptomatic patients and screened patients with suspected disease.
- A national bowel cancer screening program has been implemented by the Australian Government. This involves faecal occult blood testing (FOBT) using a faecal immuno-histochemical test in asymptomatic patients aged 50 years and over. Currently, the program offers testing to people turning 50 years of age between January 2008 and December 2010, and those turning 55 or 65 years between July 2008 and December 2010. However, FOBT is recommended every second year from the age of 50 years.²
- A positive FOBT result should be followed up with a colonoscopy. The probability of finding a neoplastic lesion in a person with a positive FOBT can be up to 35 to 50%.² Therefore, one positive FOBT result is significant.²
- Rectal cancer and colon cancer have different assessment and management pathways.

Assessment

- **Colonoscopy.** Biopsies are taken for histological confirmation. Colonoscopy is necessary to exclude synchronous cancers and adenomas. If the tumour is small then tattooing the colon distal to the cancer will assist in locating it intra-operatively (especially if a bowel preparation regimen is not given preoperatively or the surgery is performed laparoscopically).
- **CT scan.** CT imaging of the chest, abdomen and pelvis assists in the staging of the cancer and exclusion of metastatic disease.
- **MRI or transrectal ultrasound scan.** Rectal cancers require either a transrectal ultrasound or pelvic MRI (Figure 1) for local staging (tumour depth 'T' and lymph node involvement 'N'). This is necessary because locally advanced rectal



Figure 1. MRI of a recurrent rectal cancer showing invasion into the bladder, sacrum and skin.

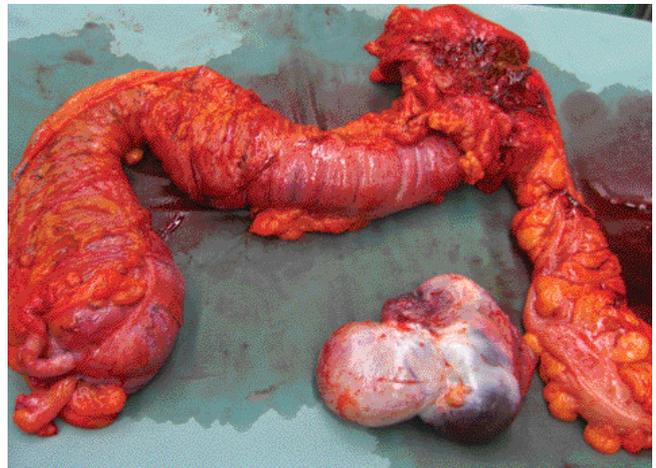


Figure 2. A subtotal colectomy pathology specimen showing carcinoma of the splenic flexure of the colon and ovarian metastasis.

cancers (stages T3 or T4, or N1 or N2) require preoperative chemoradiation (not required for colonic cancers). MRI imaging is now listed on the Medicare Benefits Schedule for the initial staging of rectal cancers.

- **PET scan.** Positron emission tomography (PET) scans are routinely used to exclude distant metastatic disease in patients with locally recurrent CRCs. This is a more sensitive and specific scan for metastatic disease than staging CT scans. PET scans are not routinely recommended for patients with primary CRCs.

Management

- The treatment regimen and the extent of surgery depend on the location and stage of the cancer (Figure 2).

Surgery

- The surgical techniques available are conventional 'open' surgery, laparoscopic surgery and robotic surgery. Transanal endoscopic microsurgery is a technique performed at specialised colorectal units for early rectal cancers in patients unsuitable for major abdominopelvic surgery.
- Laparoscopic colectomy has reduced hospital stay, faster return of gut function, lower wound infection rates, lower respiratory complications and fewer intra-abdominal adhesions than open colectomy. The ALCCaS trial (Australasian Laparoscopic Colon Cancer Study) showed that laparoscopic-assisted colonic resection has significant benefits for elderly patients compared with younger patients.³
- Robotic surgery for CRC is being performed in South-East Asia, the USA and Europe.⁴ It has been shown to increase range of movement and has better visual definition with 3 D imagery and improved ergonomics compared with

laparoscopic surgery, especially for the pelvic component of the surgery. Results are comparable to laparoscopic surgery.

- Defunctioning ileostomies are performed in patients who have received preoperative radiotherapy and require a low anastomosis. These patients have a higher risk of anastomotic leak. Recent meta-analysis has recommended ileostomies in this group of patients.
- In advanced or metastatic CRC where cure is not a possibility and large bowel obstruction is imminent, performing a colonoscopy and inserting a stent can avoid the need for a stoma.
- Patients with colon cancers do not normally require preoperative chemotherapy or radiotherapy. Those with locally advanced rectal cancers require preoperative chemotherapy and radiotherapy (see later under 'Chemotherapy' and 'Radiation therapy').
- In about 10% of patients with recurrent rectal cancer the cancer occurs locally (without distant metastases) and is curable (49% five-year survival if the surgical margins are clear of cancer, i.e. R0 resection). These patients can undergo 'redo abdominopelvic surgery' (also known as pelvic exenteration), which improves survival and eradicates debilitating symptoms (pain, bleeding, malodorous anal discharge) with low mortality rates (less than 1%).⁵ This type of surgery should only be performed in highly specialised units and is available in Australia.

Postoperative recovery

- The implementation of fast-track or enhanced recovery surgical principles in CRC surgery are making traditional regimens of long periods of fasting and preoperative bowel

cleansing redundant. The aim of these principles is to reduce postoperative general medical complications and thereby enable faster recovery of the patient. Measures include patient education to reduce anxiety and prepare them for their rehabilitation, patient optimisation before surgery regarding nutrition and cell-mediated immune function, optimisation of anaesthesia and surgical techniques (minimally-invasive), and adequate postoperative analgesia.

Chemotherapy

- Chemotherapy can be given for curative intent or for palliation.
- Chemotherapy is recommended for patients with stage III or stage IV colon or rectal cancer (i.e. spread beyond the colon or rectum to lymph nodes and distant metastases, respectively) after consultation with a specialist medical oncologist. Occasionally it is recommended for young patients without lymph node or distant metastases (stage II).²
- Pre- and postoperative chemotherapy is recommended for patients with locally advanced rectal cancer.²
- There is increasing evidence that advanced chronological age (without major comorbidities) is not a contraindication to receiving chemotherapy. There has been no significant interaction between age and efficacy of treatment.

Radiation therapy

- In Australia, preoperative radiation therapy is recommended for patients with locally advanced rectal cancer. The aim is to reduce the rate of local recurrence. It can be given as either 'short' or 'long' course therapy (long course is given in combination with chemotherapy). It is unclear which is superior (data on recurrence rates and quality of life for short versus long course therapy will be available soon from a Trans-Tasman Radiation Oncology Group trial).

A multicentre randomised trial has shown that short course preoperative radiotherapy is effective when compared with selective postoperative chemoradiotherapy in patients with operable rectal cancer.⁶ Preoperative radiation therapy is not recommended for patients with colon cancer.

- Radiation therapy can be given postoperatively, usually in the setting where the surgical margins are involved.
- Radiation is also given for palliation, and improves symptoms, most commonly pain.

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