Management of local recurrence of rectal cancer

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Introduction

The incidence of local recurrence has decreased dramatically from 30% to an average of 5% after the introduction of total mesorectal excision (TME), often in combination with a short course of preoperative radiation [1]. This effect is maintained even after a long period of follow-up [2]. In the case of a local recurrence proper case selection based on imaging followed by maximal multimodality treatment should be the treatment strategy of choice. The aim of treatment is an R0 resection since debulking has no role to play in the surgical management, and radiotherapy and/or chemotherapy cannot compensate for macroscopic residual disease.

Preoperative evaluation

Imaging focuses on establishing the local extent of the tumour growth and on the detecting of distant metastases. At least 50% of the patients with local recurrence have detectable distant metastases at the time of diagnosis, making them in most cases unsuitable for curative treatment [3]. A high-resolution magnetic resonance imaging (MRI) with a phase array coil can assess local tumour extension. Because of its various pulse sequence techniques, MRI has better soft tissue resolution than computed tomography (CT). This is useful in assessing local recurrent disease, as it can better distinguish tumour from scar tissue by a higher signal on the T2-weighted images. Tumour extent must be measured in ventral, dorsal, lateral, caudal and cranial directions. Reconstruction of the images in several planes is helpful in determining resection margins and the level of sacral transsection. Introduction of the PET scan has been useful in distinguishing scar tissue from recurrence and in finding unsuspected metastatic disease, especially in retroperitoneal lymph nodes and liver [4].

A practical algorithm for the initial approach has been published recently [5]. Most surgeons consider the following features to be (relative) contraindications for local resection: extensive pelvic side wall involvement, sacral invasion above the S2–S3 junction, encasement of external iliac vessels, extension of the tumour through the sciatic notch, presence of gross lower limb oedema from lymphatic or venous obstruction. Deep infiltration in the lumbosacral plexus or sacrum can never result in an R0 or R1 resection without severe mutilation. A predicted R2 resection, distant metastases (which cannot be resected radically) and a poor performance status are absolute contraindications [6].

Treatment

The introduction of high-dose preoperative radiotherapy (usually 50.4 Gy in 28 1.8-Gy fractions) in combination with chemotherapy followed by extensive surgery has resulted in long-term survivors with an acceptable re-recurrence rate [7]. Additional intraoperative radiotherapy, either by electron beam irradiation (IOERT) at a dose of 10–17.5 Gy or high-dose rate brachytherapy (HDR-IORT) of 10 Gy, has resulted in cure rates not far below that achieved in locally advanced primary rectal cancer [8]. Increasing experience has been gained using preoperative re-irradiation of 30 Gy followed directly by resection and intraoperative radiotherapy. Toxicity is considerable, including radionecrosis and neuropathy, either by the resection or the radiotherapy.

A classification from the Leeds group [9] can be used in the operative treatment strategy: central (tumour confined to the pelvic organs or connective tissue without contact onto or invasion into bone), sacral (tumour present in the presacral space and abuts onto or invades the sacrum), sidewall or lateral (tumour involving the structures on the pelvic sidewall, including the greater sciatic foramen and sciatic nerve through to piriformis and the gluteal region, composite (sacral and sidewall recurrence combined).

In a way surgery of recurrent disease has become more difficult after the introduction of TME surgery and preoperative radiotherapy since the anatomy is

obliterated and the amount of scar tissue is considerable. Sometimes after TME the recurrence is located low in the pelvis with infiltration of the pelvic floor relatively far from the nervous pelvic plexus making this location suitable for an abdomino-perineal (sacral) approach. Recurrences located higher up (especially the central ones) can be managed by resection with restoration of intestinal continuity. Long-term sequelae are bowel, urinary and sexual dysfunction and delayed wound healing.

Treatment of recurrent disease after transanal endoscopic microsurgery (TEM) is feasible in the absence of metastatic disease. Salvage surgery after chemoradiation follows the planes of the TME resection as in primary cases. In nearly all cases an R0 resection can be achieved. The main problem is the high percentage of metastatic disease during follow-up [10].

Reconstruction

After extensive surgery, filling the dead space left by the resection is essential. This serves several purposes. There is often diffuse venous bleeding and although it may be necessary to pack the pelvic cavity, a tissue flap can help to achieve haemostasis. The second reason for putting vital tissue in the pelvis is the prevention of radio-necrosis. Omitting this part of the operation may result in a blow-out of the vessels in the postoperative phase. Finally, reconstruction of the pelvic floor prevents the development of a perineal hernia. An omentoplasty, because of its pliability and the strong haemostatic capacity, is the best option for filling the pelvic cavity. A pedicled rectus abdominis flap is a good solution in the case of extensive resection of the pelvic floor or vaginal reconstruction. This flap can even be used at the site of the urinary stoma when two stomas are constructed.

Palliative care

In patients with irresectable disease and/or systemic disease not suitable for a radical resection either diversion of stenting in the case of a faecal obstruction may relieve symptoms. A palliative resection is in general not worthwhile since it causes morbidity of the procedure and no prolongation of life or pain relief [11]. Radiation or medical treatment is often necessary to treat the severe pain due to plexus ingrowth. Systemic therapy is in most cases not advisable since it does not affect the local tumour growth, but treats the systemic part of the disease that is usually asymptomatic.

Conflict of interest statement

The author has no conflict of interest to report.

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