Pelvic Exenteration for Primary and Recurrent Colorectal Cancer

Rectal cancer accounts for one third of all colorectal cancers and approximately one third of patients present with advanced disease. The incidence of locally recurrent rectal cancer decline since the application of total mesorectal excision and addition of preoperative radiotherapy and currently is approximately 5%-10%. The majority of these recurrences occur within the first 2 years after surgery. Without subsequent treatment these patients have an extremely poor prognosis. Surgery offers the best hope in providing improved survival rates or as the best form of palliation.

For those patients with locally advanced disease or recurrent pelvic disease the best hope of cure lies with radical resection in a form of pelvic exenteration, complimented by chemo-radiotherapy as required. Pelvic exenteration involves the resection of pelvic organs involved in disease. This operation was first described in 1948 by Alexander Brunschwig in the context of advanced and recurrent cervical cancer. Traditionally it has been associated with a high mortality of up to 23% Recent advances in peri-operative care and operative technique has improved mortality and this is now generally quoted to be in the region of 5%.

Various different forms of pelvic exenteration are performed as determined by site of cancer and degree of invasion into adjacent structures;

1. Total pelvic exenteration involves en bloc removal of the colon with the bladder and reproductive organs and is indicated when tumours involving the bladder trigone or the prostate in men and cervix in women.
2. Anterior pelvic exenteration describes en bloc removal of the reproductive organs and bladder and is mainly reserved for urogenital malignancies in female patients.
3. In a posterior pelvic exenteration the bladder is preserved with excision of reproductive organs and rectum.
4. If the tumour spread posteriorly and involve the bone and sacral involvement is limited to the sacral fascia, an en bloc resection with periosteal elevation may achieve negative margins. If there is an obvious involvement of the sacral bone the en bloc sacrectomy is indicated.

The median percentage R0 resection rate, reported in literature for pelvic exenteration is around 74% (range 41.7-90.2%) - R0 resection for primary cancer is 82.6% (range 66-95.5%) and for recurrent cancer approximately 58.0% (range 31.8-71.4%).

Pelvic exenteration is associated with high complications rate range 31.6-86% These most commonly included perineal wound infection (+/- dehiscence), pelvic abscesses and fistulae (either enterocutaneous or enterovesical).

Mean overall survival reported in literature is approximately 31 months (SD 18.9 months). 5 year survival for primary cancer is approximately 52% (range 36-77%) whilst 5 year survival for recurrent cancer declined to 18% (range 0-28%).

Predictors for adverse outcome after pelvic exenterations are:

1. incomplete resection (R1/R2)
2. previous APR
3. marked pre-operative pelvic pain
4. lymph node invasion
5. interval to recurrence <12 months from primary surgery
In order to achieve clear resection margins radical surgery should be consider in specialist centre with the input of multidisciplinary team. This service is provided locally in University Hospital Plymouth by members of the Advance Pelvic Oncology Group.

Referral

If you wish to refer to University Hospital Plymouth (UHP) please transfer the radiological investigations to UHP PACS system and email the referral letter to;

Mr Sebastian Smolarek Consultant Colorectal Surgeon

Email: sebastian.smolarek@nhs.net

Telephone: 01752430016.
Primary/recurrent rectal cancer or sigmoid cancer

Standard investigations including:
- Colonoscopy, CT TAP, MRI pelvis

Locally advance colorectal cancer with involvement of other pelvic organ (bladder, uterus) (T4b)
- Presence of colo-vestical/colo-uterine fistula related to the cancer
- No obvious macroscopic metastatic disease

Consider CT PET to exclude micro metastatic disease

No metastatic disease

Consider referral to specialised centre - If you wish to refer to University Hospital Plymouth please transfer the radiological investigations to UHP PACS system and email the referral letter to Mr Sebastian Smolarek - sebastian.smolarek@nhs.net or contact on 01752430016

Discussion on advance colorectal MDT

- Tumours involving the bladder trigone or the prostate in men and cervix in women
  - Total Pelvic Exenteration +/- pelvic floor reconstruction with the flap

- Involvement of the sacral bone
  - En block sacrectomy

- Involvement of the Uterus without bladder or cervix
  - Posterior Pelvic Exenteration