Radiotherapy

Local radiotherapy for rectal cancer (Papillon)

Clatterbridge Centre for Oncology
NHS Foundation Trust

This information is for patients who have cancer of the rectum (back passage) and who are considering having local treatment as an alternative to radical surgery. This leaflet will explain:

- local treatment options
- complications and possible side effects
- follow up after treatment

Your doctor will have already informed you that all the tests carried out so far, have shown no signs that the cancer has spread anywhere else. Therefore, your cancer is at an early stage and there is a very good chance of curing it. Your doctor/surgeon has informed us that you fully understand that the standard treatment is major surgery and that: -

- he/she feels that you are not quite fit enough for the standard treatment due to your other medical problems which puts you at a very high anaesthetic risk or
- you do not want any surgery that involves either a permanent or a temporary stoma (bag).

We also understand that your doctor / you have requested information about treatment which gives you alternative treatment options. Your doctor has asked us to explain and discuss these treatment options with you and your family if you wish.

It is important you understand that:
(1) Not all rectal cancers are suitable for local treatment and therefore it may not be possible to offer you this treatment.

(2) There is a higher risk of local recurrence following local treatment (approximately 10%) compared to standard treatment (1-4% patients)[1].

(3) Should the cancer recur (usually within the first 2-3 years), you will need to consider the standard surgery that may involve a permanent or a temporary stoma (bag) (1-2 in every 10 patients)[2].

Investigation at the start of treatment

You will have a MRI and a CT scan to stage and exclude spread of cancer. You will also have an intra-anal ultra sound scan (probe inserted into your back passage) to find out the depth of invasion of your tumour. Blood tests will be carried out.

Local treatment options

Some patients will need to begin their treatment with local surgery to be followed by radiotherapy.

1) Surgery
If your rectal cancer is small (less than three centimetres) then it may be possible to remove this through your back passage without opening your abdomen. This can be done by either: -

1.1) Transanal Endoscopic Microsurgery (TEM)
This procedure usually requires a general anaesthetic. Your surgeon will insert a small operating microscope into your rectum so that he/she can see the cancer (tumour) more clearly and the cancer will be removed with a clear margin around it. The area where the cancer was removed is repaired using stitches. An experienced pathologist will then examine the removed tissue under a microscope. The pathologist will look at the tumour to establish what kind of cancer you have and examine the cut ends (margins) of the bowel wall. If the cancer is very close to the cut ends there is a possibility that not all the cancer cells were removed. We will then offer you standard surgery to remove any remaining cancer together with the surrounding lymph nodes. The pathologist will also examine this tissue. If the cut ends show no sign of cancer, then no further treatment is necessary other than regular follow up.

1.2) Transanal resection (TAR)
This procedure also usually requires a general anaesthetic and is used when the tumour is situated very low in the rectum where it is not possible to use the TEM method mentioned above. Tumours located higher up in the rectum cannot be treated with TAR.

2) Radiotherapy using the Papillon technique (contact radiotherapy)
Contact Radiotherapy (low energy x-rays treatment) is recommended for patients who are not fit enough for general anaesthesia or who do not

want surgery and formation of stoma. If your cancer is small (less than three centimetres) and if the cancer is not too deep with no evidence of lymph node involvement, then local contact radiotherapy using the Papillon treatment can help. Papillon is the name of the French professor from Lyon who popularised this technique. Unlike the surgical option as described above, this treatment does not involve a general anaesthetic and may be more suitable for you. However, not all rectal cancers treated with the Papillon method respond to the treatment. You may need to go on and have external beam radiotherapy with or without chemotherapy (drug treatment). If there is still cancer remaining you may need local surgical resection (TEM or TAR).

You can come as a day patient for the treatment if you live near to the Centre. However, it usually requires an overnight stay in hospital so that we can give you some medication to clear out your bowels before the treatment. We will give you a local anaesthetic gel to apply around your anus to numb the area and ease any discomfort and a cream to relax the muscles around your anus.

Treatment is usually in the afternoon. A porter will take you to the treatment room. The treatment procedure is explained to you again in more detail. The radiographer will explain and show you the position that you need to be in for the treatment. The actual treatment usually takes about 2-3 minutes but you will be in the treatment room for about half an hour.

We will ask you to kneel and bend over on the treatment couch. Your doctor will then examine your back passage to locate the cancer. He/she will then insert a small instrument (sigmoidoscope) to examine the cancer carefully. Your doctor will then remove the instrument and insert the treatment tube (applicator) into your rectum placing it directly over the tumour. There is a camera within the treatment tube to check the position of the applicator. When the applicator is in the correct position, the radiographer will connect the applicator to the treatment (low energy x-rays) machine. The x-rays only penetrate a few millimetres and therefore the deeper normal tissue is

not affected. There are therefore very few side effects from this superficial x-rays treatment. The second treatment is usually about 2 weeks after the first treatment and we repeat the same procedure.

Each treatment kills the cancer cells, layer by layer, while the normal tissues recover during the break between treatments.

If the tumour responds to the first two treatments and shrinks, a third treatment is given in a further 2 weeks time. Finally, a fourth treatment is given in another 2 weeks time (4 treatments in total).

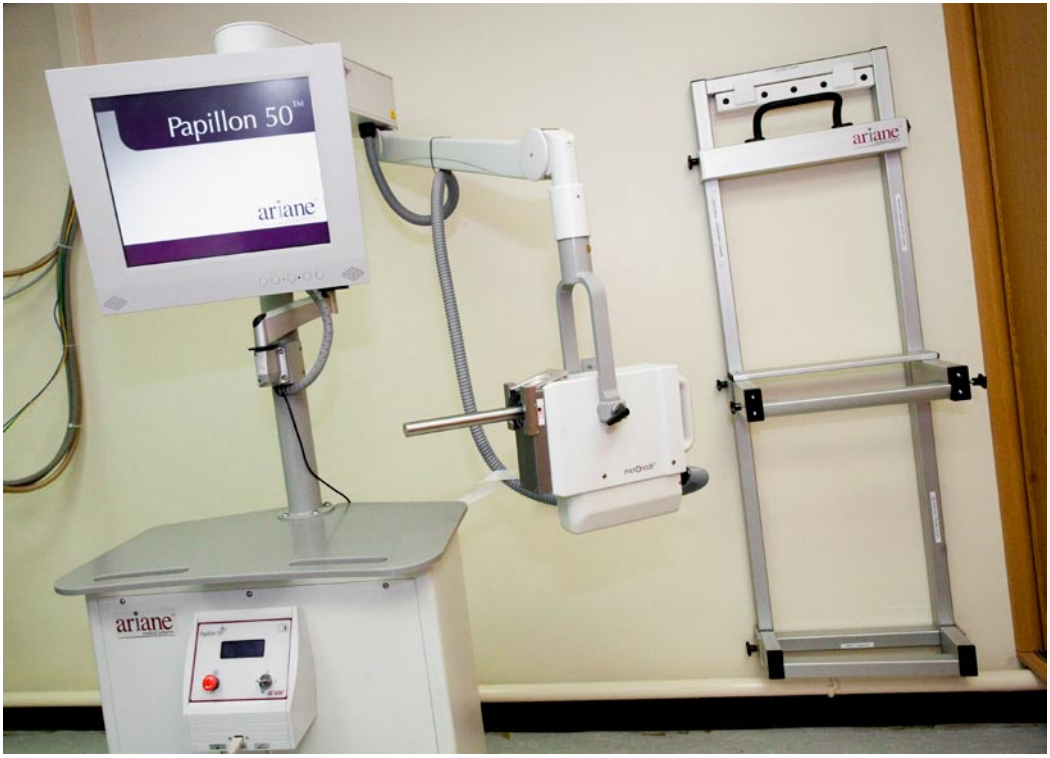
If the tumour does not respond to the first two treatments then external beam radiotherapy is given with or without chemotherapy. This involves either five treatments over one week or 25 treatments over 5 weeks (daily treatments from Monday to Fridays each week) depending on your general fitness and any other medical problems you may have, your doctor will discuss this with you.

3) Combination treatment

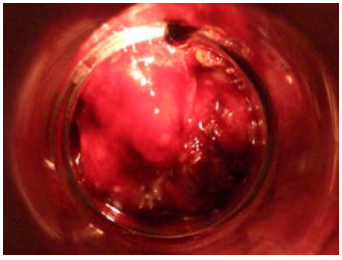
For larger cancers, (more than 3 centimetres) we need to try to shrink the cancer as much as possible before going on to surgery. This involves a course of radiotherapy or chemo-radiotherapy (radiation treatment and drug treatment together). This may be followed by a course of local contact radiotherapy boost using either the Papillon treatment or HDR (high dose rate) brachytherapy (insertion into the rectum of a radioactive source). We would then check the response of your tumour to the treatment before deciding how to proceed. The options are as follows: -

(1) If there is still a small cancer left, this can be removed locally either by TEM or TAR (please see above for more details).
(2) If there is no response (no shrinkage of the tumour), then we would advise you to have the standard surgery, as any further attempts at local treatment are very unlikely to be successful.
(3) If there has been a good response, then no further treatment may be necessary other than regular follow up appointments.

The papillon machine and treatment couch

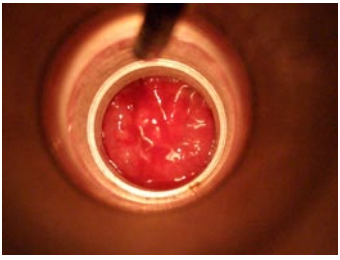


Malignant polyp at the start of contact treatment (Big tumour)



After one contact radiotherapy (Tumour shrinks)

Complete response at the end of treatment (No tumour visible)



Possible complications and side effects

1) Surgery

Any surgical procedure carries a risk of death and complications. The risk of death due to standard treatment is around 5% and the risk of death due to local surgical treatment with either TEM or TAR is much lower at less than 1%.

Complications such as bleeding, pain, infections, delay in wound healing and fistulas (abnormal connection between front and back passage) are much lower (1 in 10 patients) with local treatment compared to standard surgical treatment. (1 in 5 patients)

You may experience incontinence (loss of control) of your motions for few weeks following local surgical treatment but this usually gets better for the majority of patients. We may advise you to do pelvic floor exercises to strengthen the muscles around the anus and help to prevent further leakage.

You will be in hospital around 3-5 days following local surgery compared to 1-2 weeks for standard surgery.

2) Radiotherapy

There have been no deaths reported as a direct result of this treatment. However, radiation can cause some discomfort in the rectum due to inflammation caused by the radiation. This usually settles down 2-6 weeks after completion of treatment. We will give you steroid enemas to reduce the inflammation and you need to use them twice a day.

You may experience rectal bleeding but it usually settles down within 2-3 months. If it persists any longer, you may need treatment to control this.

You may experience pain/discomfort around the anus when the doctor inserts the rectal applicator. The local anaesthetic gel and the cream to relax the muscle will help to ease the discomfort. The pain/discomfort usually settles within a few minutes.

Diarrhoea (loose motions) is not common after only contact radiotherapy, but can occur if you have external beam radiation especially when it is

combined with chemotherapy. We will give you advice on what to eat and what foods to avoid. You may need some medication (e.g. Imodium) to control the frequency of motions.

Late side effects of radiation include narrowing of the back passage. This can occur in about 1% of patients. Gentle stretching (dilatation) to stretch the narrowing may be necessary. Your surgeon will arrange this for you. Persistent bleeding occurs in less than 5% of patients due to dilated blood vessels. Laser treatment may be necessary to control the bleeding.
Fistulas are a rare radiation side effect that can occur in less than 1% of patients (usually in those who have also had surgery). However, only a few patients need surgery to correct the fistula, for most patients this heals naturally.
Intestinal obstruction (blocked bowels) occurs in less than 5% of patients and normally only if you have had surgery combined with external beam radiotherapy. This usually responds to simple treatment but may require hospital admission to control the symptoms and very occasionally surgical correction (less than 1%). This can also occur with standard surgery.

Investigations after treatment
Blood tests will be carried out at each visit. You will have a yearly CT scan for 3 years. MRI scan will be repeated as necessary. You may have a PET/CT scan if there is any suspicion of recurrence.

Further treatment
There is approximately a 10% risk of your cancer coming back in the same place and less than a 5% chance of it spreading to other parts of your body [2].

Depending on where the cancer has recurred, we may offer you further treatment, which could involve standard surgery and a temporary or permanent stoma bag. Standard surgery may not be possible due to the nature of the recurrence in some patients.

Follow Up

It is very important that you attend regular follow up appointments for a number of years after the treatment.
We will make an appointment to see you every 8 weeks in the first year and then every 12 weeks in the second and third years. This will then extend to every 6 months for the next 3 years, followed by yearly appointments for the next 5 years.
During follow up, you will be asked if you are having any problems e.g. pain, bleeding and excessive bowel movements.
The doctor will then examine you using a sigmoidoscope (an instrument for viewing the inside of the rectum) followed by rectal digital (finger) examination. A biopsy is only carried out if there is a suspicion that the cancer has recurred.

Please Note:
Whilst we do everything possible to cure your cancer, we cannot guarantee that local treatment will cure your cancer and therefore you may need to have further treatment.

It is important that you understand that this is not a standard treatment and should the tumour recur at a later date, you will usually be offered radical salvage surgery which may involve a permanent or a temporary stoma, provided you are fit enough for a general anaesthetic.

We make every effort to prevent immediate and long-term side effects, but we cannot guarantee that rare and unusual complications will not occur.

You have the right to withdraw from the treatment offered at any time and this will not affect your future treatment in any way.

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References:

[1] Clinical Oncology (2007) 19:674-681 Combined Modality Treatment of Early Rectal Cancer - the UK Experience. A. Sun Myint et al.

[2] Clinical Oncology (2007) 19:720-723 Salvage Surgery After Inadequate Combined Local Treatment for Early Rectal Cancer. M. J. Hershman et al.

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