What you need to know about Radiation Therapy for Colorectal Cancer

Questions and Answers

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Overview

I. Description of Radiation
   - What is Radiation?
   - Who are the members of the treatment team?
   - How is it delivered?

II. When Radiation is beneficial (and why)?
   - Curative setting
   - Palliative setting
Radiation 101

- Radiation treatment is just X-rays
- They are about 100x more powerful than “average” X-rays
- Radiation works by damaging DNA and cancer cells have trouble repairing this damage
- Some collateral damage also occurs to normal tissue in the local area (aka “side effects”)
- Unlike chemotherapy this is a local treatment
Indications for radiation

1. **Rectal Cancer** – Improve rates of control in pelvis
   - Little room in the pelvis (for the surgeon)
   - Can’t remove areas where microscopic cancer can be
   - Sometimes needed to shrink cancer to help surgery

2. **Colon Cancer**
   - Rarely used for large cancers invading other organs or if the surgeon couldn’t remove all of the cancer

3. **Palliate Local Symptoms (Colon and Rectum)**
   - Recurrent disease
   - Metastases to bone or lung or elsewhere
What is the Radiation Process?

1. Pre-Radiation imaging and tests
2. Radiation Planning / Simulation
3. Treatment

Different Staff:
- Radiation Oncologist (me & MD)
- Radiation Therapists
- Medical Physicists
- Physics Assistants
- Radiation Nurses
2. Radiation Oncologist

- Assesses patient / stage of disease / best treatment
  - Other investigations, consultations as needed
- Target what needs to be treated / protected
- Dose
- Evaluate the plan
- Follow you during treatment to manage side effects
- Follow up afterward, if needed
2. Radiation Planning

CT Simulator

- Confusing because you’ve already had a CT scan
- Different CT used to plan your radiation
  - A reproducible position is of paramount importance
    - Drink water: Bladder full to push small bowel out of the way
    - Sometimes:
      - Drink contrast: sometimes to help see small bowel
      - IV contrast: uncommon, but may help see blood vessels
2. Radiation Planning
CT Simulator
2. Radiation Planning
Radiation Tattoos
Radiation Therapist – Job Description

1) What the Public thinks I do

2) What my Parents think I do

3) What I think I do

4) What I actually do
2. Radiation Planning

Targeting
2. Planning & Quality Assurance
Medical Physicists & Assistants
2. Radiation Planning
Designing Radiation
3. Radiation Delivery
The Linear Accelerator
3. Radiation Delivery
The daily grind

- Local Treatment
  - Monday through Friday
  - Small amount daily
  - 5-10 min, at centre for 45-60 min
- Side Effects
  - Result of surgery, chemotherapy & radiation
  - You’re not radioactive!
  - Feel nothing during or after each treatment
  - Start near end of 2nd week, come on gradually
  - Begin to fade 1-2 weeks after treatment ends
3. Radiation Delivery
The daily grind

- Side Effects
  - General
    - Tired
  - Local
    - During and the few weeks afterward
      - Bowel: often, urgently, diarrhea
      - Bladder: often, urgently, burning is uncommon
      - Vagina: sore / discharge
      - Skin: around anus / tail bone, more for lower tumours
3. Radiation Delivery
The daily grind

- Side Effects con’t

  - Local

    - **Ongoing**
      - Bowel: more often, more urgently
      - Bladder: generally returns to normal
      - Skin: returns to normal
      - Vagina: may be shorter, more narrow
      - Penis: erectile / ejaculation problems
      - Hips: thinning of bones

- No hair loss on head or nausea
4a. Curative Rectal Radiation

- **Short course** (5 higher dose treatments)
  - Only used before surgery
  - No chemotherapy with radiation
  - When you don’t need to shrink cancer
  - Surgery shortly after Radiation (7-10d)

- **Long course** (25+ lower dose treatments)
  - Can be used before or after surgery
  - Usually chemotherapy with the radiation
  - Need to shrink the tumour or low tumour
  - Surgery 6-8 weeks after Radiation
Palliative Radiation

Same Process
Different Aims
4b. Palliative Radiation

- Palliation: symptom control / quality of life
- Radiation is often useful even if the disease has spread to other sites beyond colon or rectum
  - Painful areas (e.g. bones)
  - Symptomatic areas
    - Lymph nodes in pelvis
    - Lung metastases
4b. Radiation - Palliation
Summary

- Radiation is just high dose X-rays
- Targeting & multiple treatments reduce side effects
- It is delivered by an entire team
- It is used predominantly in Rectal cancer and has roles in the curative and palliative setting
Radiation… The End