

Management of Synchronous Rectal and Prostate Cancer with Radiotherapy

A single-centre case report

Melissa Lovegrove

Prostate and Colorectal Cancer

- Two most common cancers in British men
- Synchronous presentation is rare
- Incidences expected to increase
 - Greater life expectancy
 - Advancements in screening

Radiotherapeutic Management

- Important treatment option for those who are not eligible for surgery
- No current radiotherapy guidelines for treating synchronous presentation
- Trend in literature of combining standard fractionation for each site
- No consensus on radiotherapy approach – disparity across literature
 - Multi-phase
 - Dose escalation
 - Anastomotic consideration
 - 25-fraction prostate regimen

Background to Research

- Five patients between 2020 and 2022
- MSc project 2023 to analyse best approach
- One patient this year – 2026

Case Studies

- Initial clinical approach – combine standard fractionation of each site
- Two-phase: Prostate 60Gy/20fr plus Rectum 45Gy/25fr

Advantages

- Maintain departmental protocol for each individual site
- Five-week treatment schedule

Disadvantages

- Two-phase planning and delivery more complex
- Additional fractions for rectum give low-dose bath to prostate
- Ambiguity regarding OAR constraints for final five fractions
- Complex replanning if required

Case Studies

- Second clinical approach – combine more similar dose per fraction for each site
- Two-phase: Rectum 45Gy/25fr plus Prostate 74Gy/37fr

Advantages

- Clearer OAR constraints as longer course has higher dose per fraction
- Smaller low-dose bath from second phase due to volume size

Disadvantages

- Two-phase planning and delivery more complex
- Additional fractions for prostate give low-dose bath to part of rectal volume
- Over seven weeks of treatment
- Complex replanning if required

A Novel Approach

- Single-phase radiotherapy using 68Gy/25fr to Prostate plus 45Gy/25fr to Rectum

Advantages

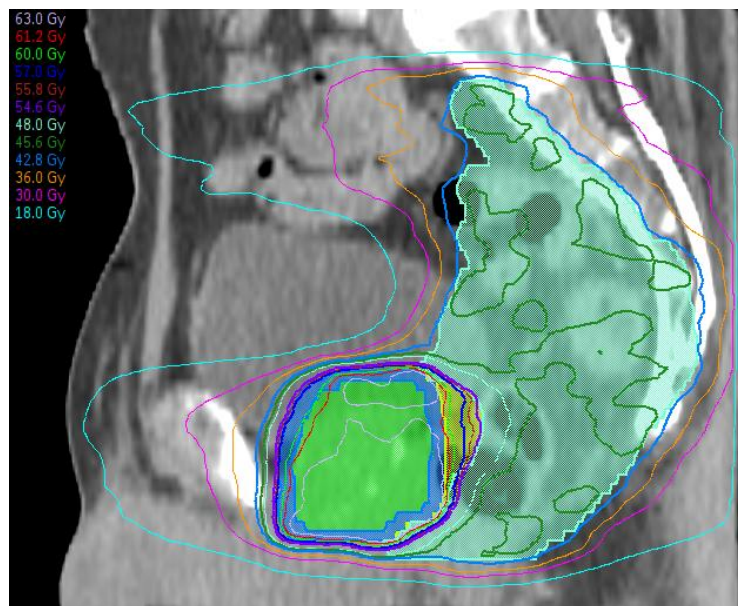
- Simplicity
 - Single-phase planning and delivery much simpler
 - Straightforward replanning if required
- Shorter treatment course for patient compared to 37fr option

Disadvantages

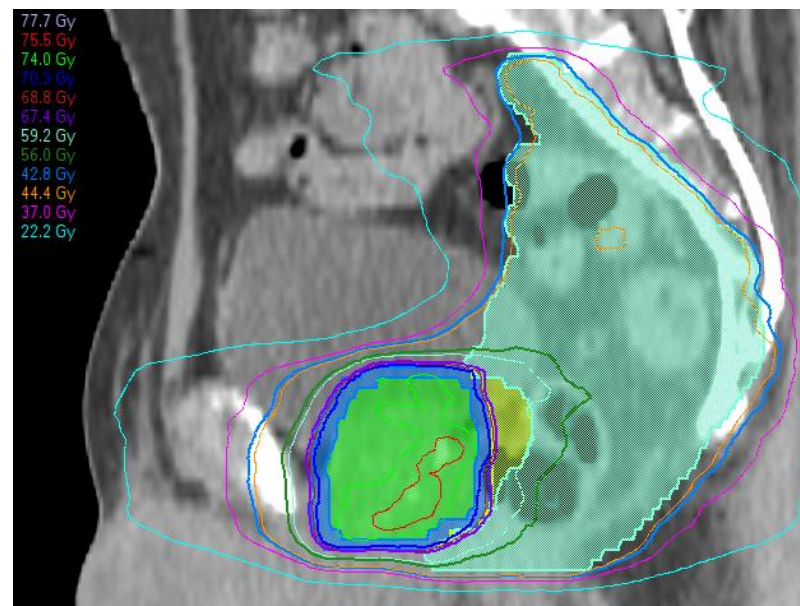
- 68Gy/25fr is not a standard UK fractionation
 - OAR constraints calculated in-house
- Like-for-like comparison somewhat difficult due to PTV expansions

Dosimetric Comparison

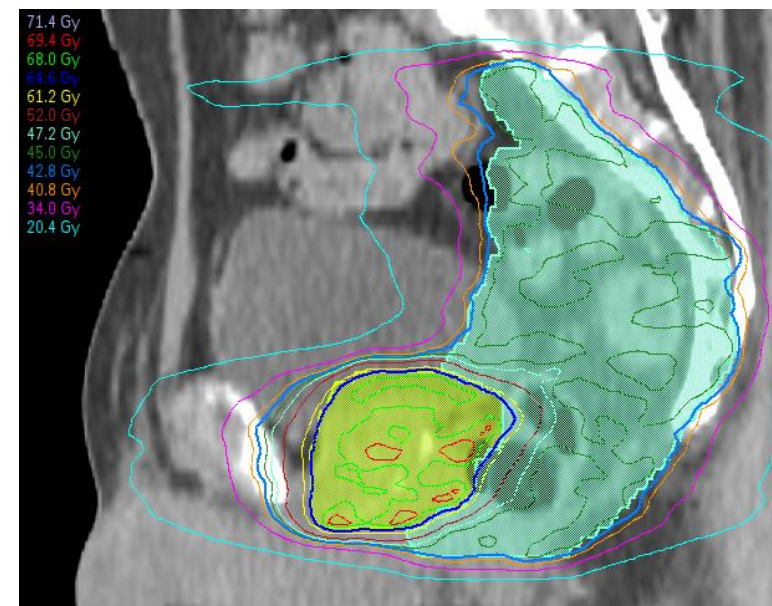
- Each patient was planned three ways using Philips Pinnacle³ V16.2 treatment planning system



Prostate 20fr



Prostate 37fr



Prostate 25fr

Summary

- Two-phase approach using 60Gy/20fr to prostate deemed inferior
- Two-phase approach using 74Gy/37fr to prostate resulted in comparable dosimetric results as single-phase plan using 68Gy/25fr
- Although 68Gy/25fr not standard UK fractionation, this is our preferred approach due to simplicity of planning and delivery

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