



# Patient Selection for Tomotherapy

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PARDISNOOR IMAGING AND CANCER CENTER



## Objectives

- At the end of this session we hopefully will be able to:
  - Have a fair understanding that when our patient absolutely or relatively benefits from complicated technique/ system
    - Select Tomo/ IMRT technique for our patients more effectively

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## Advanced technique as a tool in our hand



- Radiation Oncologist Job
  - Cure
  - Palliate



## Advanced technique as a tool in our hand



- Radiation Oncologist Job
  - Cure
    - Radical
    - Adjuvant
    - Neoadjuvant
  - Palliate



## Advanced technique as a tool in our hand



- Radiation Oncologist Job
  - Cure
    - Radical Treatment
      - Head and Neck - Cervix - Sarcoma - Brain Tumours - Lung
    - Adjuvant
      - Breast - Gastric - Brain Tumours - Sarcoma
    - Neoadjuvant
      - Rectum - Esophagus
  - Palliate



## Advanced technique as a tool in our hand

- Radiation Oncologist Job
  - Cure
    - Radical
    - Adjuvant
    - Neoadjuvant
  - Palliate
    - Pain - Bleeding - Obstruction



## Thinking in the office



- Coverage of a target
- Avoidance of critical structures
- Conflict of these two




Be a doctor




Disease Factors  
Patient Factors  
Treatment Factors


### Advanced technique as a tool in our hand



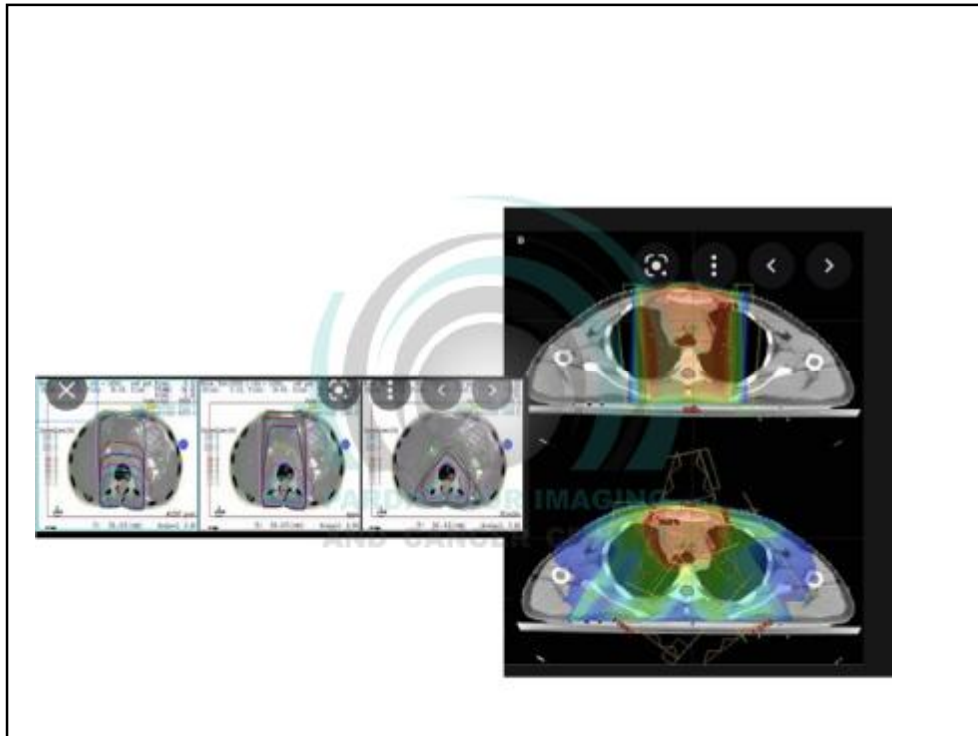
- Radiation Oncologist job
- Cure
- Radical
- Adjuvant
- Neoadjuvant
- Palliate



- Is the chance of cure better?
  - Better coverage
  - **Less side effects** and hence better tolerance of systemic treatment or radio-therapeutic treatment
  - More accuracy
- Would be a better chance of palliation?
  - Less side effects
  - Better coverage
  - Re-RT




This way complex technique is always a selection





- Cost
- Expertise
- Access
- Balance


The slide features several icons: a stack of gold coins and green dollar bills; a 3D white figure in a thinking pose next to a stack of colorful blocks labeled 'EXPERTISE', 'ABILITY', 'EXPERIENCE', and 'KNOWHOW'; a black silhouette of a scale of justice; and a map showing a winding road with distances of 200m and 120m. The logo for 'PARDISNOOR NILOO' is in the top right corner.



## Typical Scenario that would push you toward complexity


- Use your tools wisely
- When the target is close to OAR
- When your typical plan covers a big volume of normal tissue (AP-PA)
- HnN
- Prostate
- Sarcoma



## Head and Neck

- A 58 year old male otherwise healthy
- Presented with nasal voice
- Resection → ACC
- Re-resection with complete resection of nasal conchae → no residue
- Referred for Adj RT



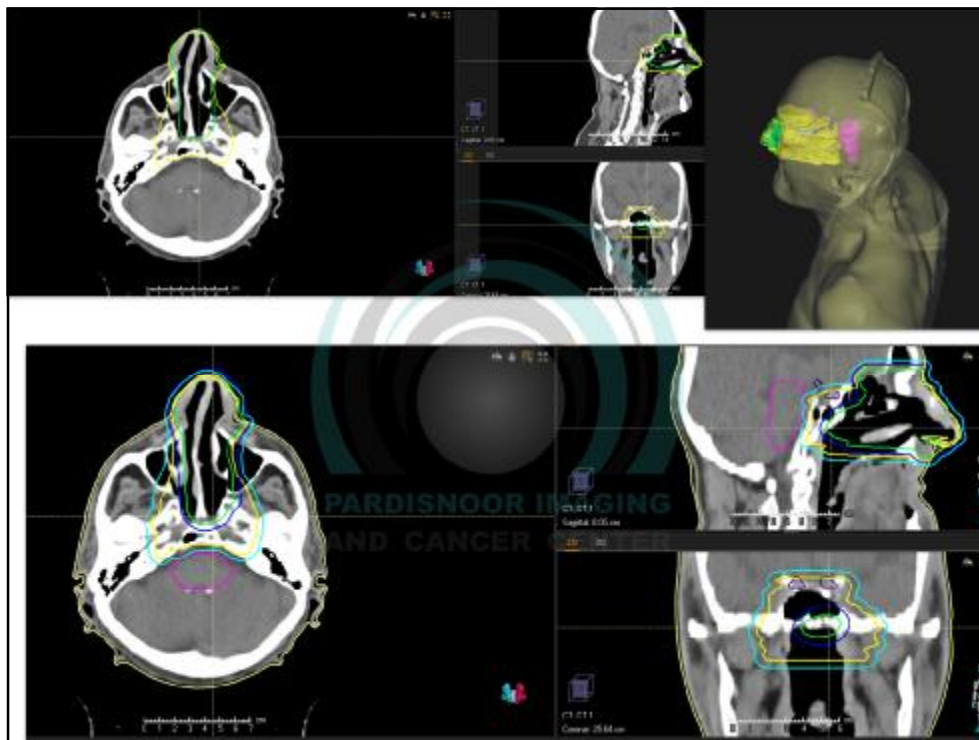


## Thought process to see if I should propose TOMO

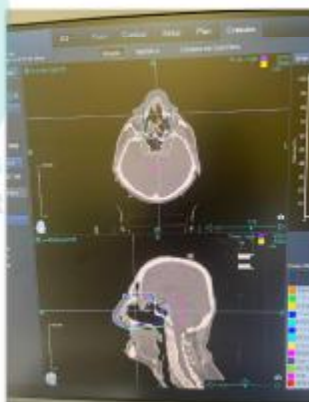
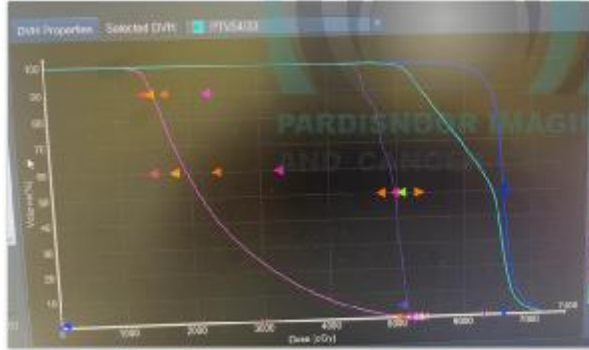



- What is the potential volume?
  - I think of high grade salivary gland ca CTV
  - I know I have to go potentially to the skull base/ PPF
  - I know my dose → 66Gy
  - Proximity to Chiasma ( Tolerance 54 )

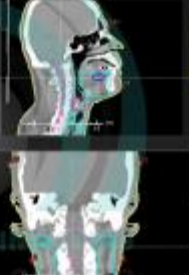
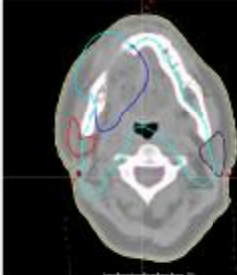

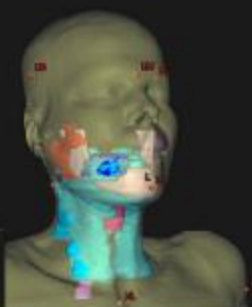
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- One should have no shame to push for complexity, expenses and specialized referral.
- 66 & 54Gy / 33 – simultaneous boost
- OC → 52 (1%) ; BS → 48 (1%)



We have treated a patient like this. She is anatomic wuse lucky enough that even parotids can be spared.






# Prostate



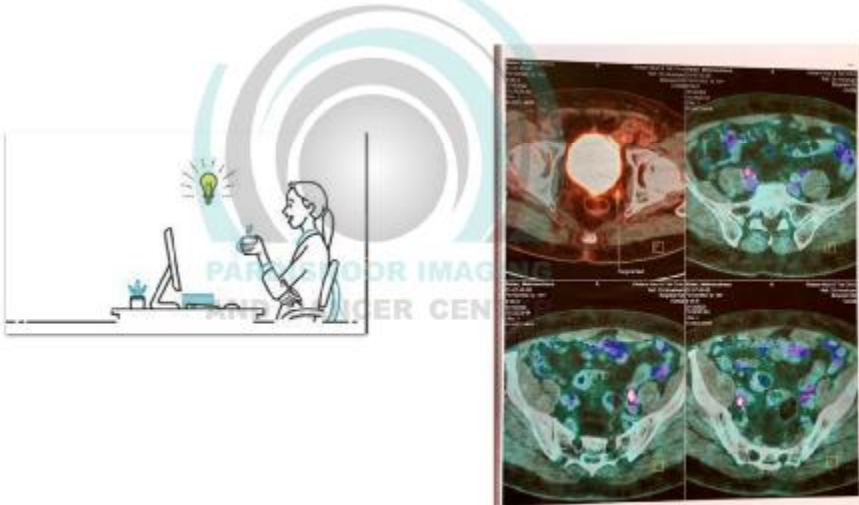
- The target that runs away



The illustration shows a man in a dark suit and tie, holding a bow and arrow, aiming towards a target. The target is a red bullseye with a white center, and it has small legs and is running away from the man. The background is a dark green color.

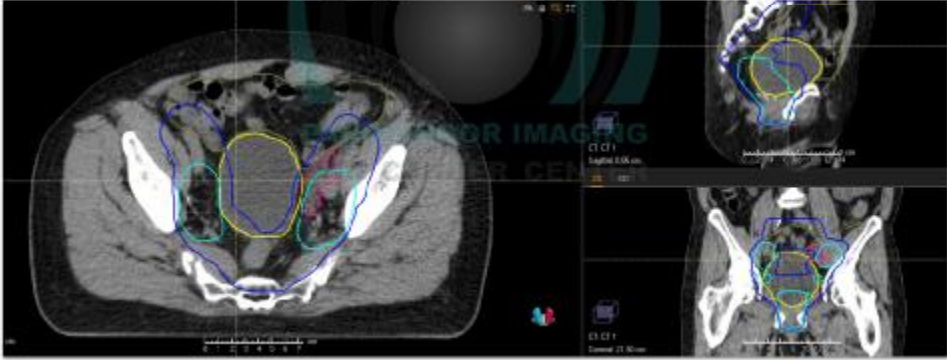



- 68 yr old male
- Hx or prostatectomy
- LN+ in PET-CT → Thinking



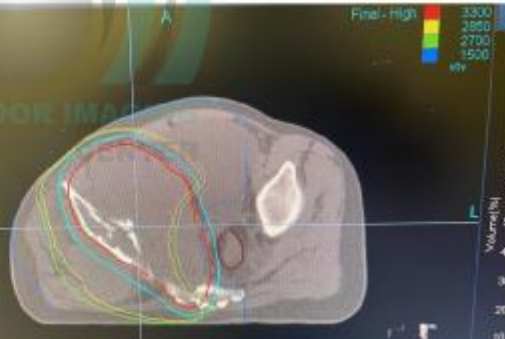
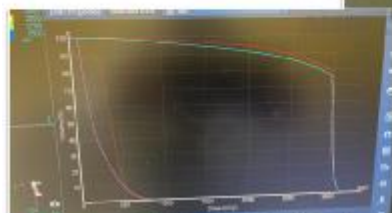
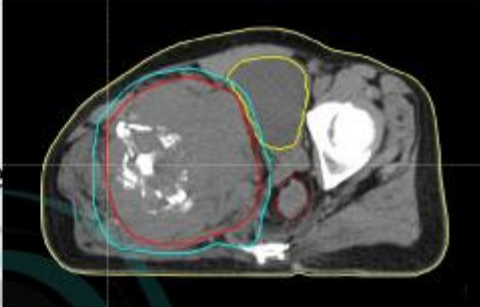
The illustration on the left shows a person sitting at a desk with a computer monitor, looking thoughtful with a hand on their chin. A lightbulb is glowing above their head. The illustration on the right shows a PET-CT scan image of a prostate, with a grid of four panels showing different views of the prostate and surrounding lymph nodes.

- A chance for cure
- Why not



The image displays a medical CT scan interface with three views: a large axial view on the left and two smaller coronal views on the right. The scans show a pelvic region with several colored contour lines (red, yellow, green, blue) overlaid on the anatomical structures, representing target volumes and organs at risk for radiation therapy planning. The interface includes technical data such as 'CT (1)', 'Scanned 0.05 min', and 'Control CT Scan'.

- Sarcoma
- UC
- We aimed for zero dose



The image shows a medical CT scan of a pelvic cross-section with colored contour lines. Below the scan is a dose distribution plot with a curve showing dose vs. volume. To the right of the plot is a color scale for 'Final - High' dose, ranging from 1500 to 3300 cGy. The plot and scan show the distribution of radiation dose across the target and organs at risk.

## Truly Palliative

- » 57 year old female
- » Pancreas locally advanced last year
  - » Borderline Unresectable
- » Treated with CRT
  - » Resectable!
- » No Residue
- » Now presents with cord compression at T11
- » Bowels
  - » 45Gy
- » Spinal Cord
  - » 35Gy

It's tricky! 🖥️

