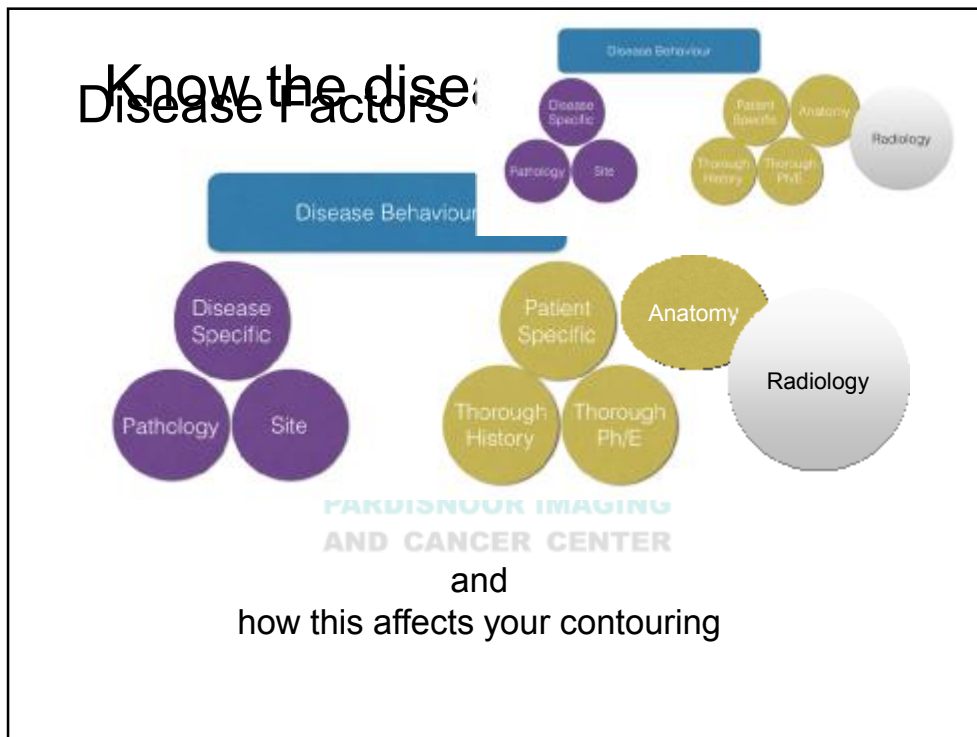
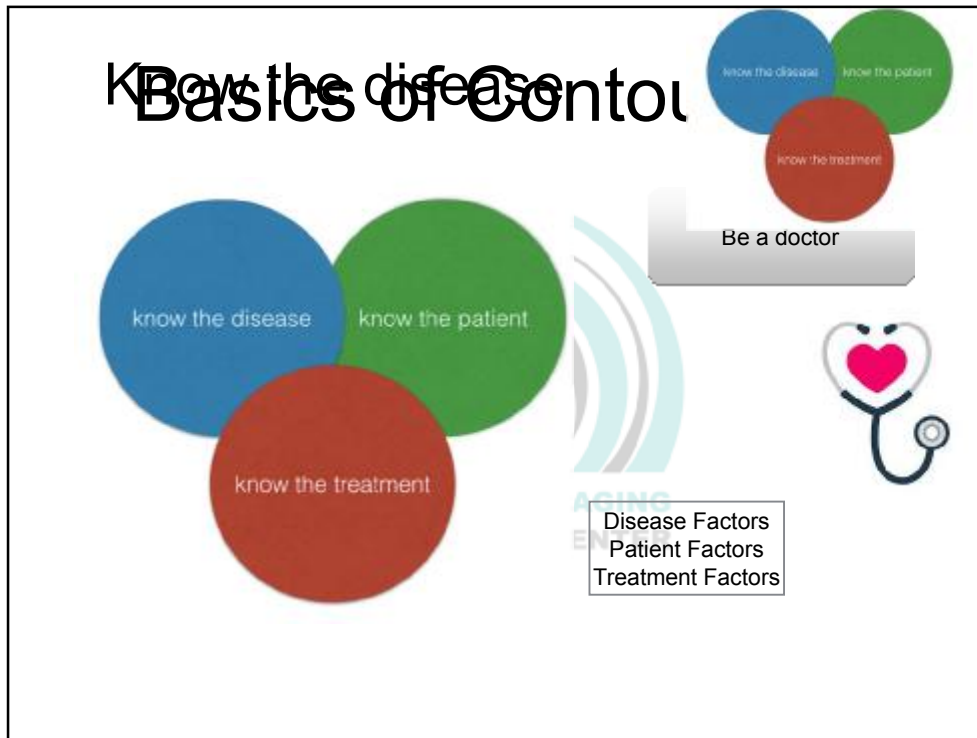


Basics of contouring and the mind flow of a physician

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Radiation Oncologist
PARDISNOOR IMAGING
AND CANCER CENTER

Basics of contouring

- It is never a single guideline
- Guidelines are developed based on an extensive workflow
 - Disease based
 - Not individual based
 - Anatomy based
- We need to understand them so we can decide for an individual patient



Disease Factors

- Details of disease behaviour
- Local growth
 - Know the pathway
- Systemic growth
 - Know the pattern

The diagram features a central grey circle labeled 'anatomic barriers'. To its left is a yellow circle labeled 'Anatomy', and to its right is a grey circle labeled 'Radiology'. Above these is a blue box labeled 'Disease Behaviour'. To the right of 'Disease Behaviour' are several smaller circles: a purple one for 'Disease Specific', a purple one for 'Pathology', a purple one for 'Site', a yellow one for 'Patient Specific', a yellow one for 'Biological Effects', a yellow one for 'Immune System', and a grey one for 'Radiology'.

These affects your contouring

Gross Tumor Volume
Clinical Target Volume
Planning Target Volume

The diagram shows three purple circles: 'Disease Specific' at the top, 'Pathology' at the bottom left, and 'Site' at the bottom right.

- GTV
 - What you see in images
 - US, CT, MRI, PET CT
 - What Ph/E tells you
 - Neurologic exam
 - MSK exam
 - GYN exam
- CTV
 - Is a clinical / medical concept
 - based on understanding of the disease
 - It is NEVER a margin
 - Even though follows it
 - CTV is a function of:
 - GTV and it's margin
 - Anatomic boundaries
 - Disease behaviour and histology
- PTV
 - It is a physical concept
 - Motion
 - Organ
 - Patient
 - Physics
 - Dosimetric uncertainties
 - Calculation
 - Registraion
 - Image transfer
 - IGRT registration

- GTV
 - What you see in images
 - US, CT, MRI, PET CT
 - What Ph/E tells you
 - Neurologic exam
 - MSK exam
 - GYN exam

Gross Tumor Volume
Clinical Target Volume
Planning Target Volume

68 Year old male
Started with motor deficit (L)
On exam: Apathetic
Somehow vulgar

- GTV
 - What you see in images
 - US, CT, MRI, PET CT
 - What Ph/E tells you
 - Neurologic exam
 - MSK exam
 - GYN exam

Gross Tumor Volume
Clinical Target Volume
Planning Target Volume

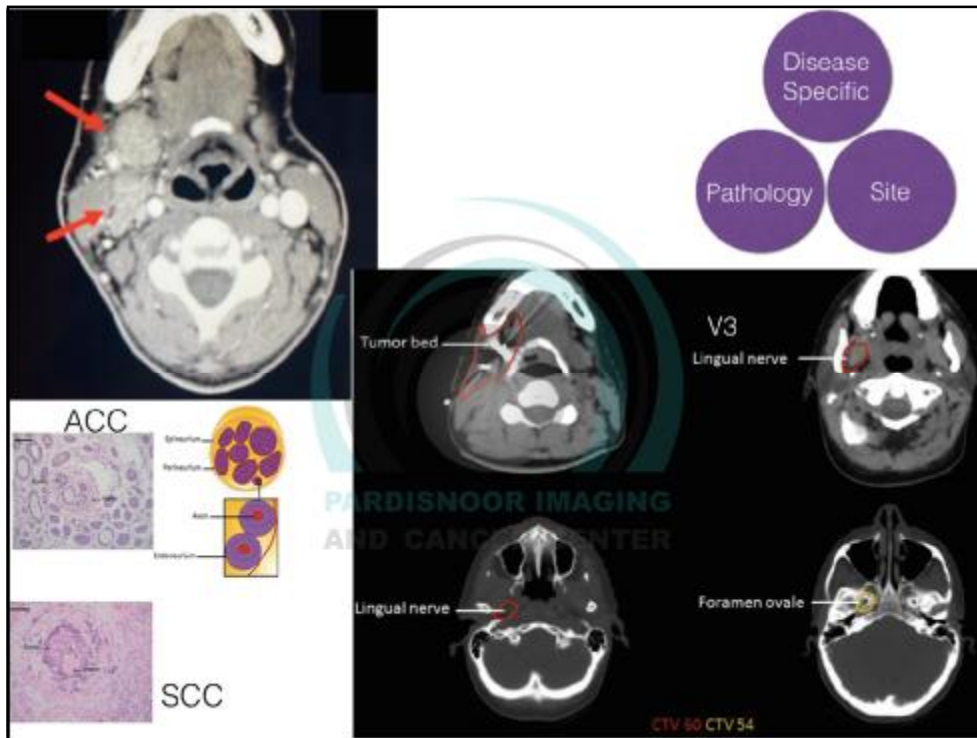
28 year old female
High risk ALL on remission
Presented two years post with diplopia
CN exam revealed: L CN VI palsy
MRI normal
CSF positive

GTV ????

Minimum L cavernous sinus around 24 Gy

CTV
CSI +/- a high dose CTV?

CSI
Cranium and skull base(18-24Gy)
CSI: 18Gy



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Gross Tumor Volume
 Clinical Target Volume
 Planning Target Volume

PTV

- It is a physical concept
- Motion
- Organ
- Patient
- Physics
- Dosimetric uncertainty

Anatomy

Radiology

Disease Specific

Pathology

Site

- CTV
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 - Even though follows it
 - CTV is a function of:
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 - Disease behaviour and histology

Gross Tumor Volume
Clinical Target Volume
Planning Target Volume

Disease Specific

Pathology Site

Anatomy

Radiology

- CTV
 - Is a clinical / medical concept
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Gross Tumor Volume
Clinical Target Volume
Planning Target Volume

Disease Specific

Pathology Site

Anatomy

Radiology

Tentorium Cerebri

CTV in Brain

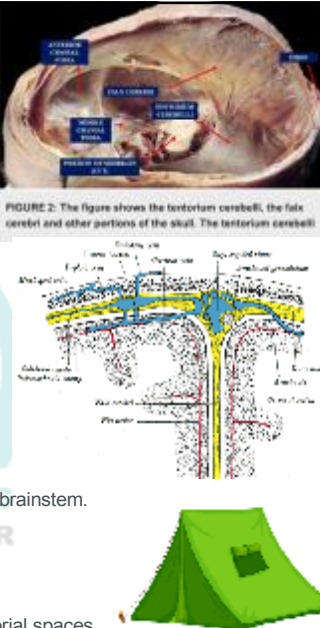


FIGURE 2: The figure shows the tentorium cerebelli, the falx cerebri and other portions of the skull. The tentorium cerebelli

THE TENTORIUM CEREBELLI

- **The tentorium cerebelli**
- An invagination of the meningeal layer of the dura mater
- Separates the occipital and temporal lobes from the cerebellum and brainstem.
- Extends in the axial plane over the posterior cranial fossa
- → Divides the cranial cavity into the supratentorial and infratentorial spaces



Anatomy

Radiology

- Elderly with hard palate high grade salivary gland tumour (MRI T1 fat sat)

- **Involvement of Pterygopalatine fossa (V2)**
- **Pterygomaxillary fissure into the retromaxillary masticator space**
- **Interconnecting pathways (V2/VII)**
 - **Vidian canal & Greater petrosal nerve**
- **Foramen Ovale (V3)**
- **Cochlea**

- 1) Pterygopalatine Fossa
- 2) Vidian Canal
- 3) Petrosal n.
- 4) Foramen Ovale
- 5) Carotid a.
- 6) Inner Ear
- 7) Mastoid

PARDISNOOR IMAGING AND CANCER CENTER

