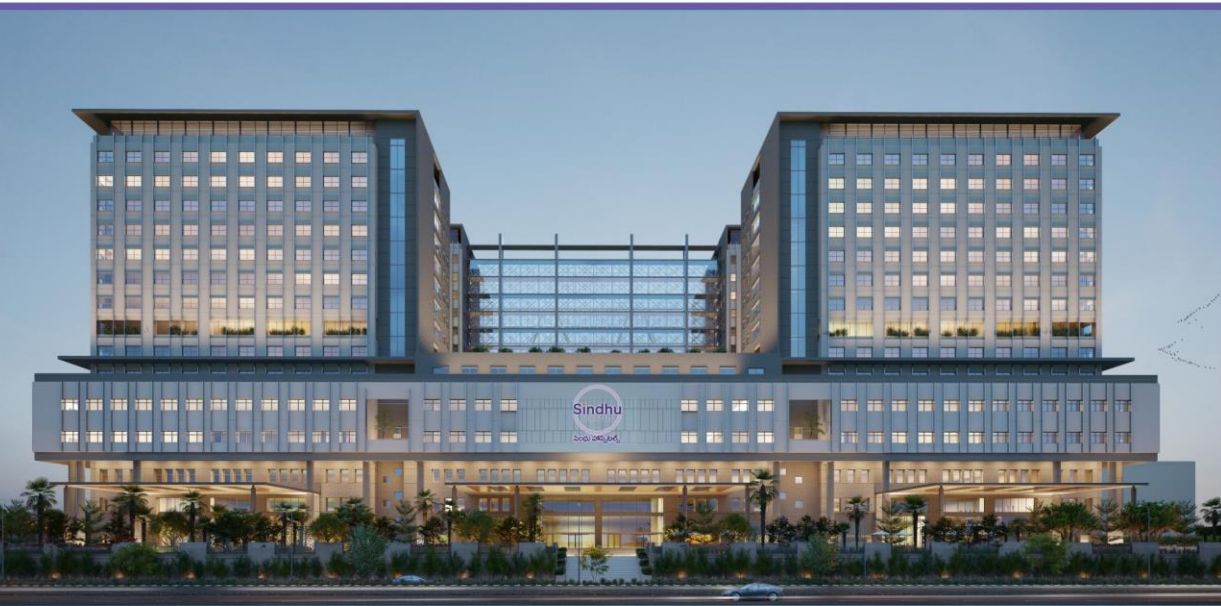




Transforming Lives Through
Comprehensive Care



Experience of SGRT in New Cancer Centre

Bhavani Perumal

www.sindhuhospitals.com

Selection Justification for SGRT



- Incorporate an add on technology which would
 - Increase patient comfort – immobilization free
 - Increase accuracy –setup & intra fractional monitoring
 - Increase efficiency – reduced time
 - Increase outcome – Clinical relevance
 - Increase Throughput of patients
- To challenge that the centre
 - Offer latest technology in market
 - Satisfies what the patient demands
 - To explore and probe peer knowledge

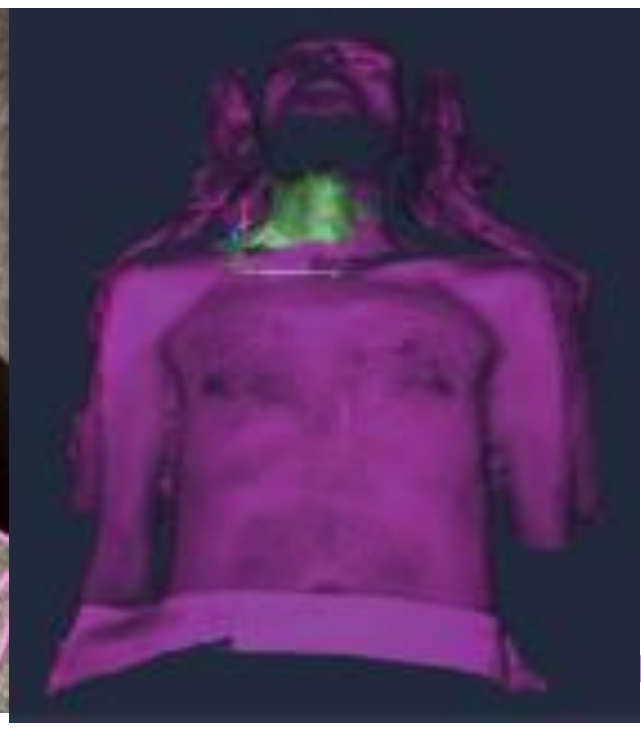
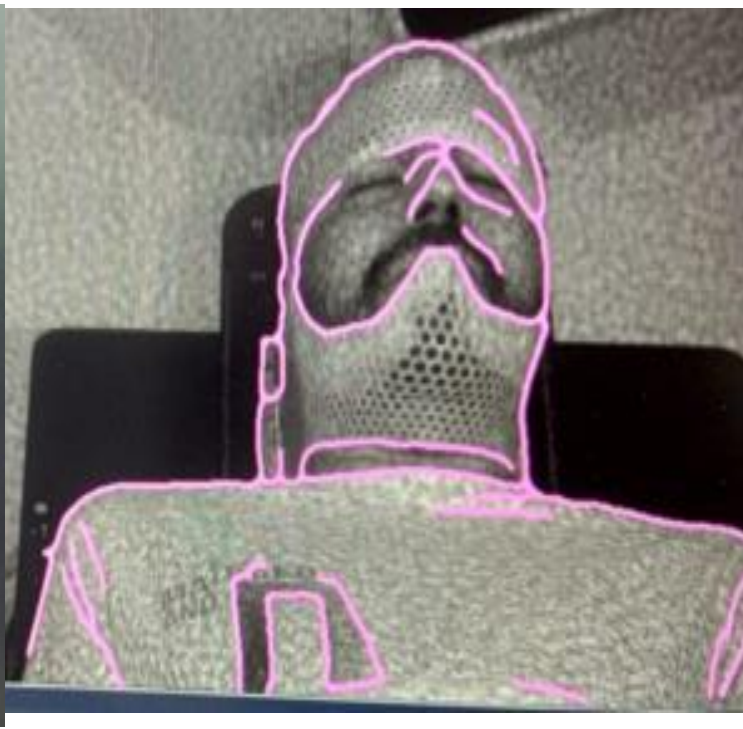
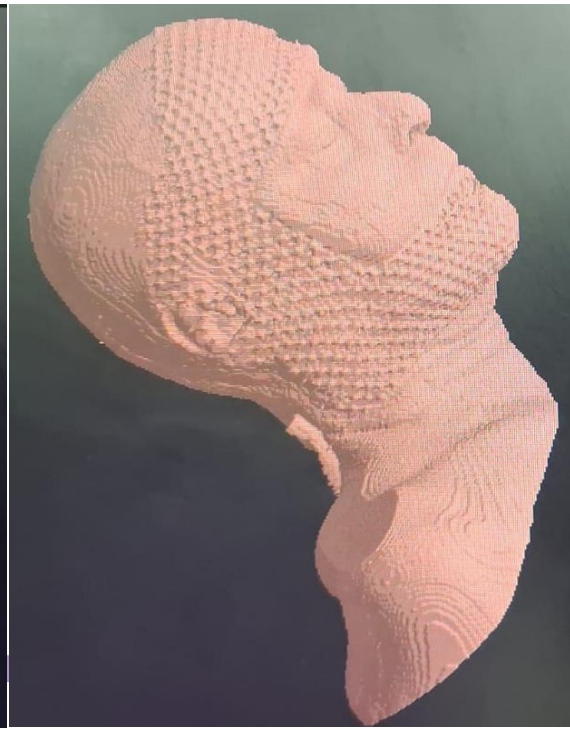
Any SGRT system should provide...

- Real Guided treatment – (an user decision)
- FOV coverage – (ensures more accuracy)
- Availability of Postural video
- ROI based monitoring and delivery
- Beam control treatments (Beam Hold delay)
- Free Reference capture
- Gated Reference capture
- DIBH delivery
- Deformation data assessment
- Non Coplanar views

Management of Head & Neck treatments

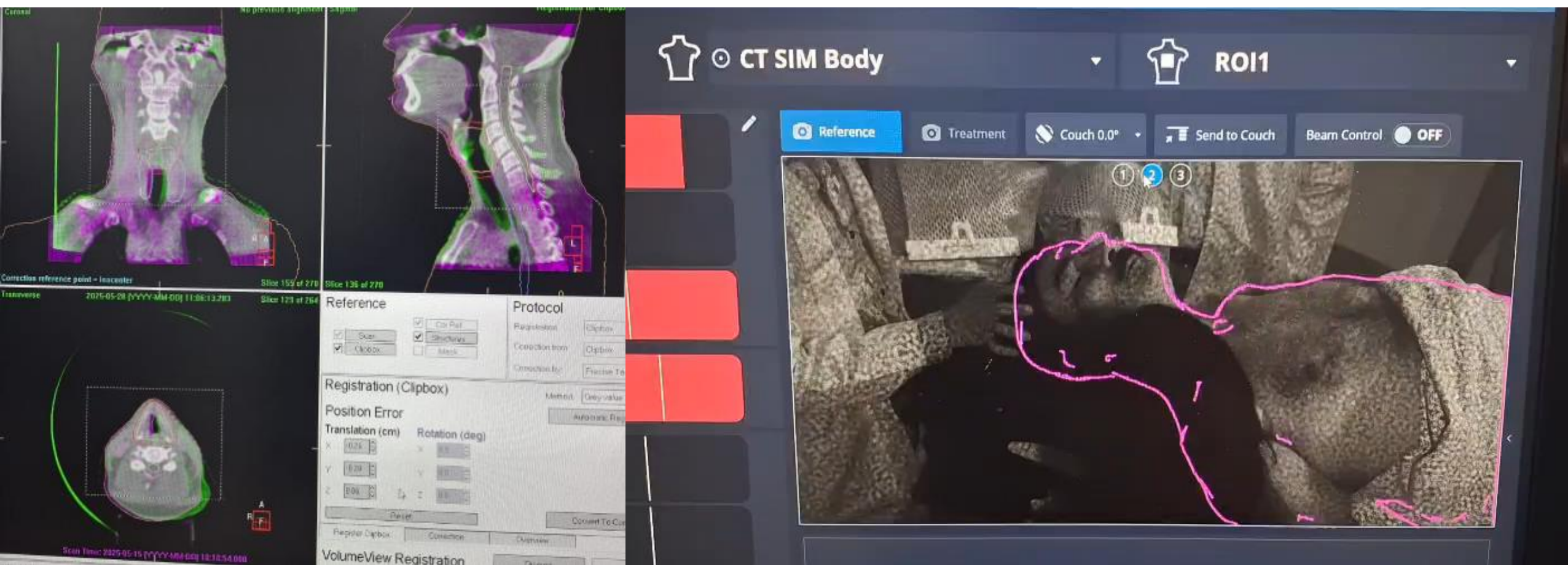
Options...

- ☐ Limited Immobilization (more challenging)
- ☐ Open Face Mask (Comfort to patient)
- ☐ Vaclock



Postural Video – a promising feature of SGRT for faster positioning time

X=0.26cm, Y=0.2cm & Z=0.06cm in 3D image matching using XVI

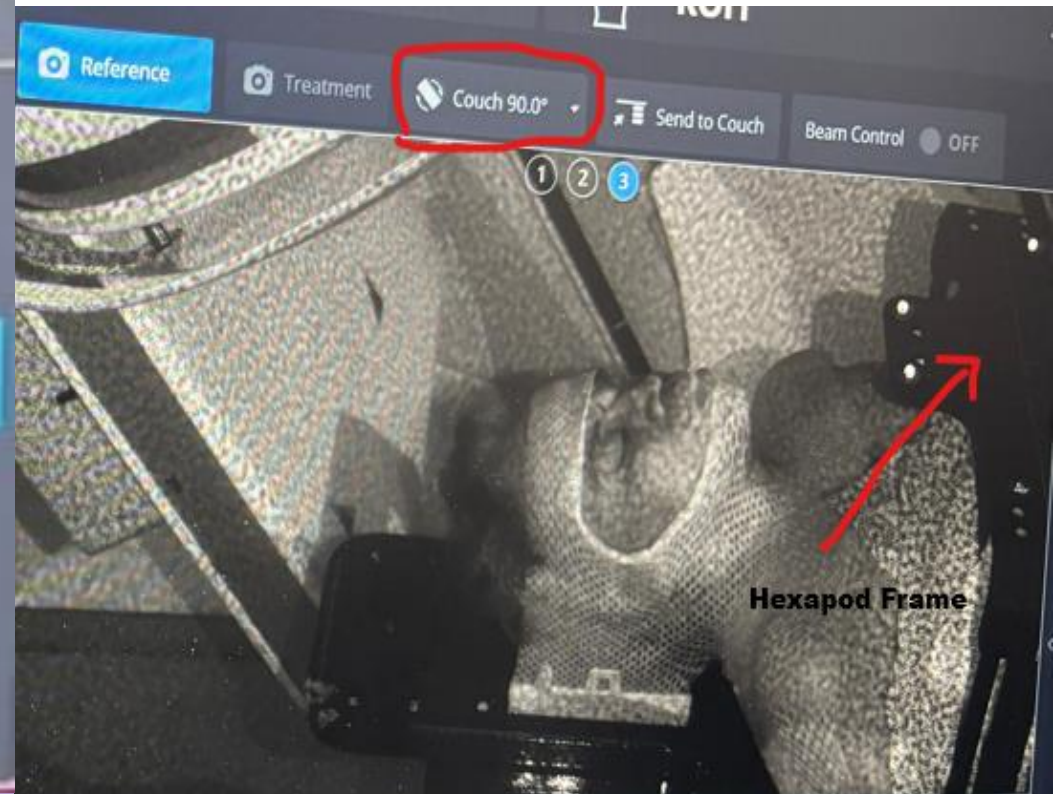


Head & Neck treatment using 6D accuracy for intra fractional monitoring

Non Coplanar View possible

0 Couch

90 Couch



Lessons...



- Careful selection of Positioning devices/aids
- Anatomical reference for alignment
 - Rotation impacts a lot
- Significant open area for the mask
- Appropriate inclusion of ROI
- Oedematic or weight loss changes can be adapted reasonably
- Pre mask alignment made easier
- Faster setup
- Non-coplanar views possible

Management of Thorax treatments

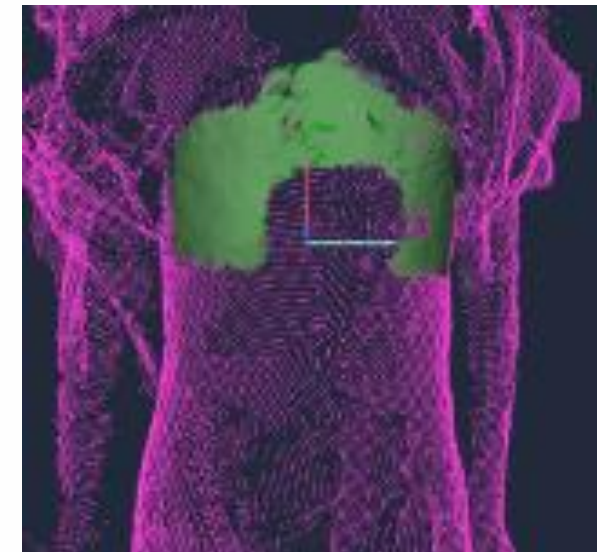
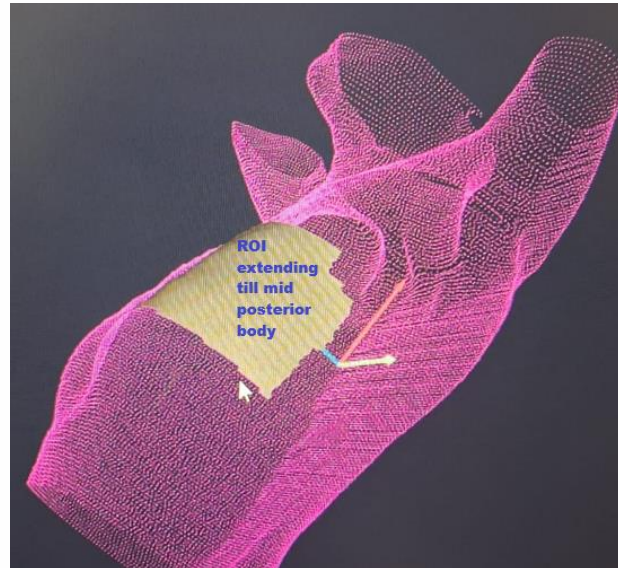
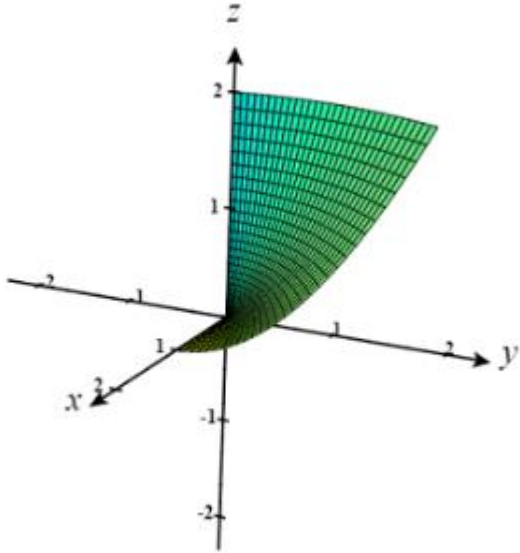
• Options

- ☐ Using Mask
- ☐ Mask Free
- ☐ Wedge cushion (Breast)
- ☐ Vaclock

Common Tx types that can be covered using SGRT

- ✓ Breast
- ✓ Oesophagus
- ✓ Bone mets
- ✓ Lung (Limited)

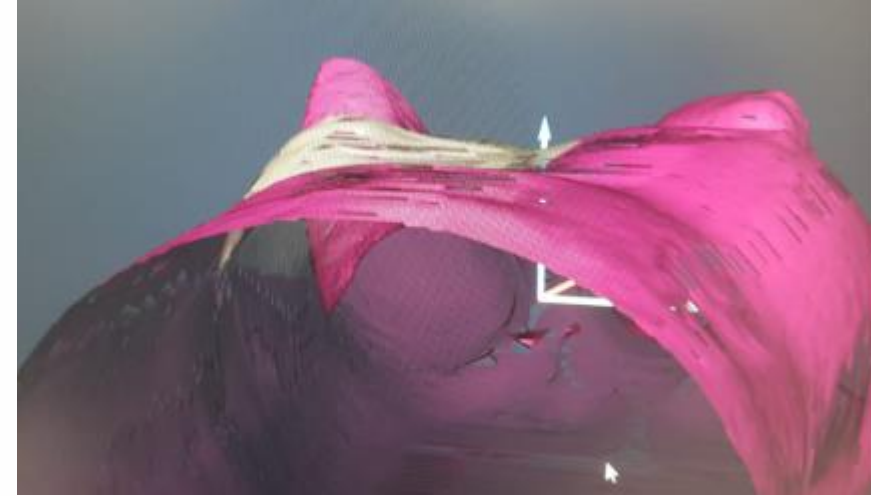
How to overcome the common myths?



Optimization and understanding about ROI drawing



- Near the Target region
- Significant surface area must be included
- Shady region must be avoided
- Concavities must be avoided like scar
- Depth must cover till mid body level
- For one sided tumor contralateral region can also be included
- Region of motion must be avoided (Except DIBH)

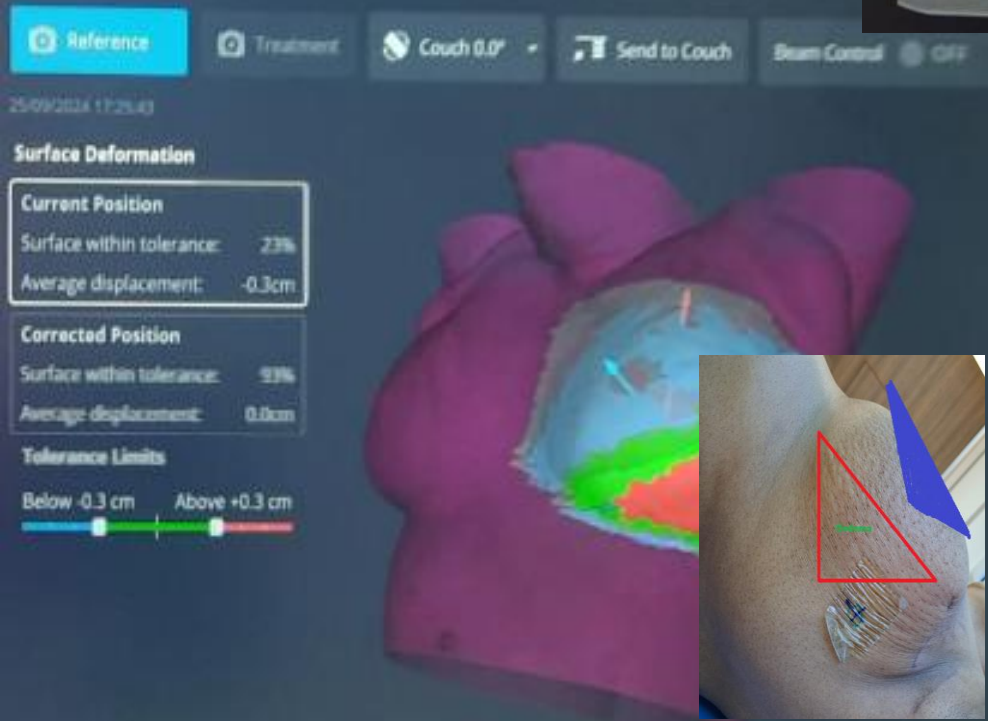
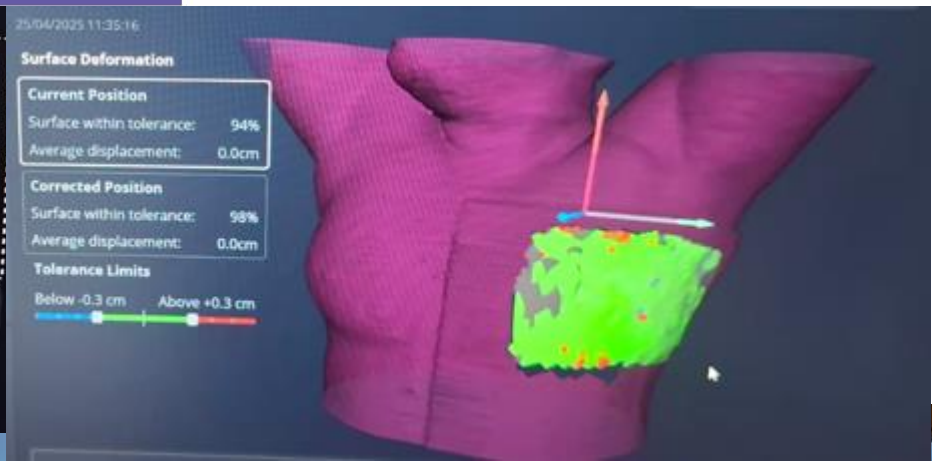
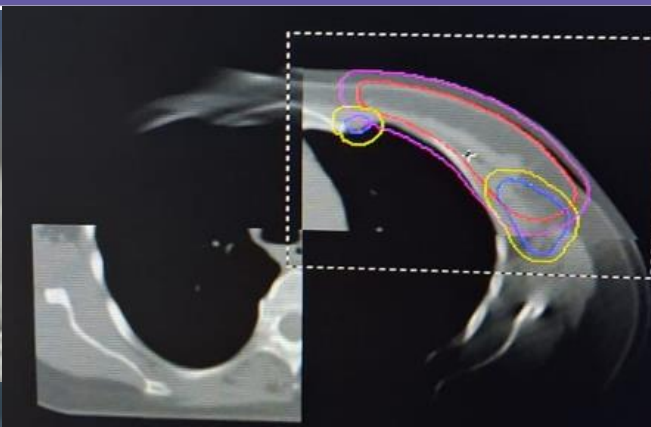


Points to understand in Breast Tx



- Position the patient in the wedge cushion with knee rest
- DIBH is very easy (Training to patient is crucial)
- ROI is patient specific
- Chest wall with bolus is possible (challenges in bolus)
- Odema/changes must be assessed frequently
- Treatment with beam control affirms clinical result
- Only CT surface used for guided (or gated capture)

Points to understand in Breast Tx



Concerns with Bolus for Breast

- Surface adaptable bolus
- Placement consistency
- Bolus surface detection
- Customized Bolus



Management of Abdomen & Pelvis Treatments



Common Tx's

- Liver
- Bone Mets
- Gynaecological
- Urogenital

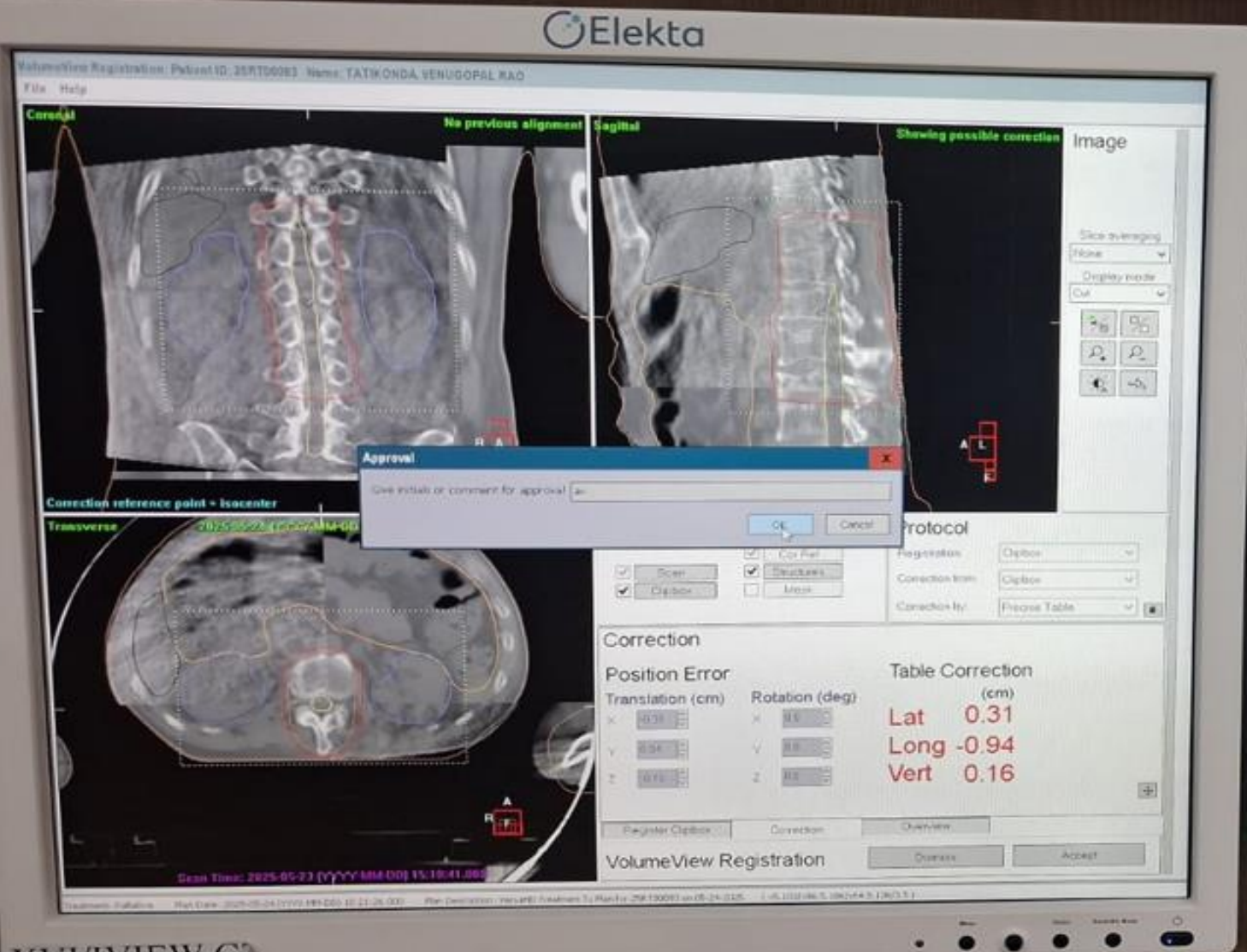
Affirmations

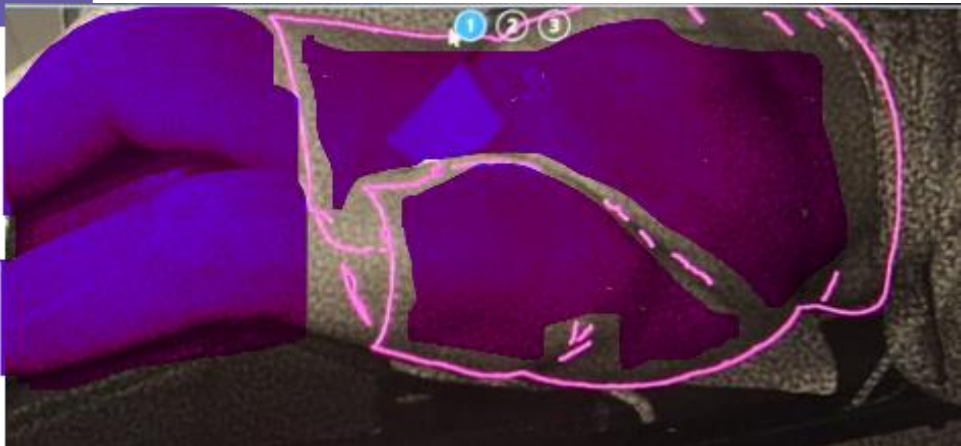
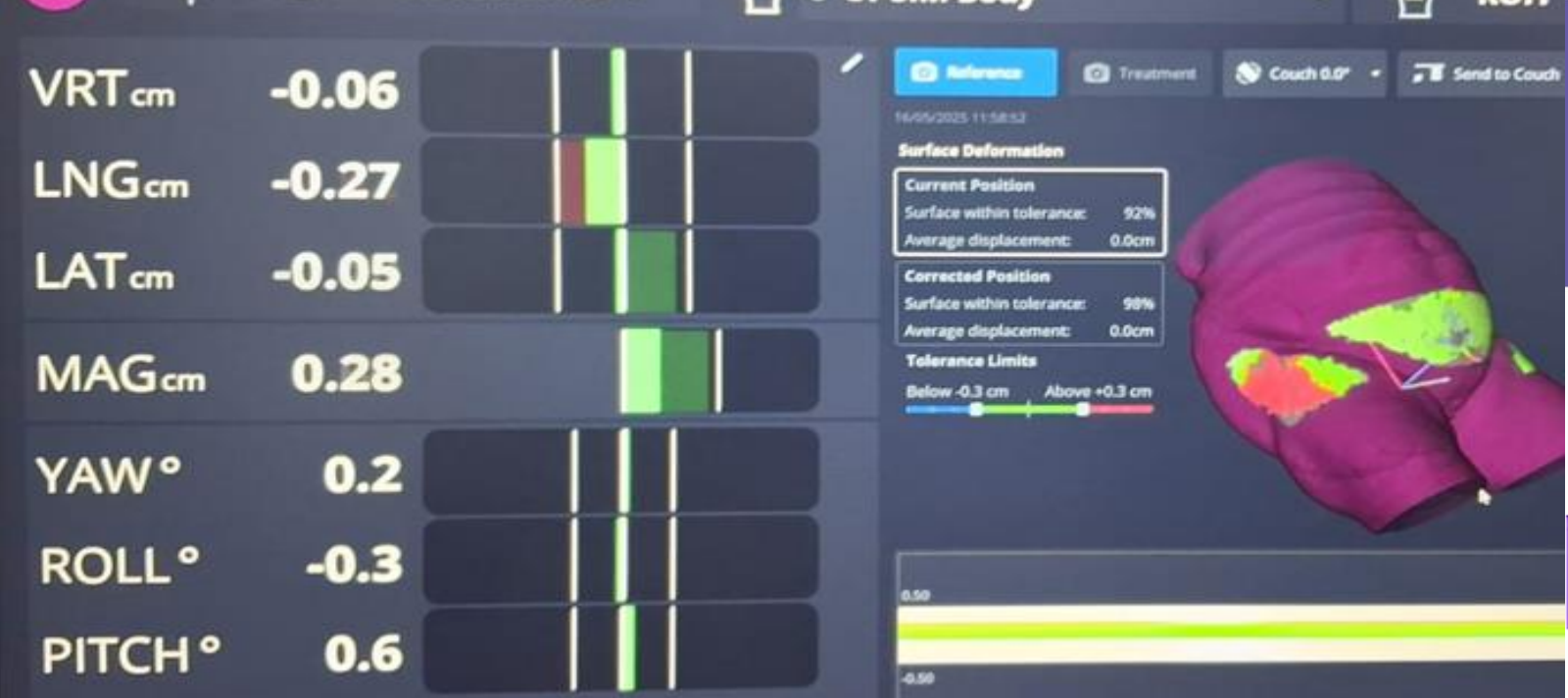
- Immobilization free
- Support aids
- Training to patient

Challenges

- Internal motion
- Leg Position reproducibility
- Protocols use

Bone Mets matching against XVI

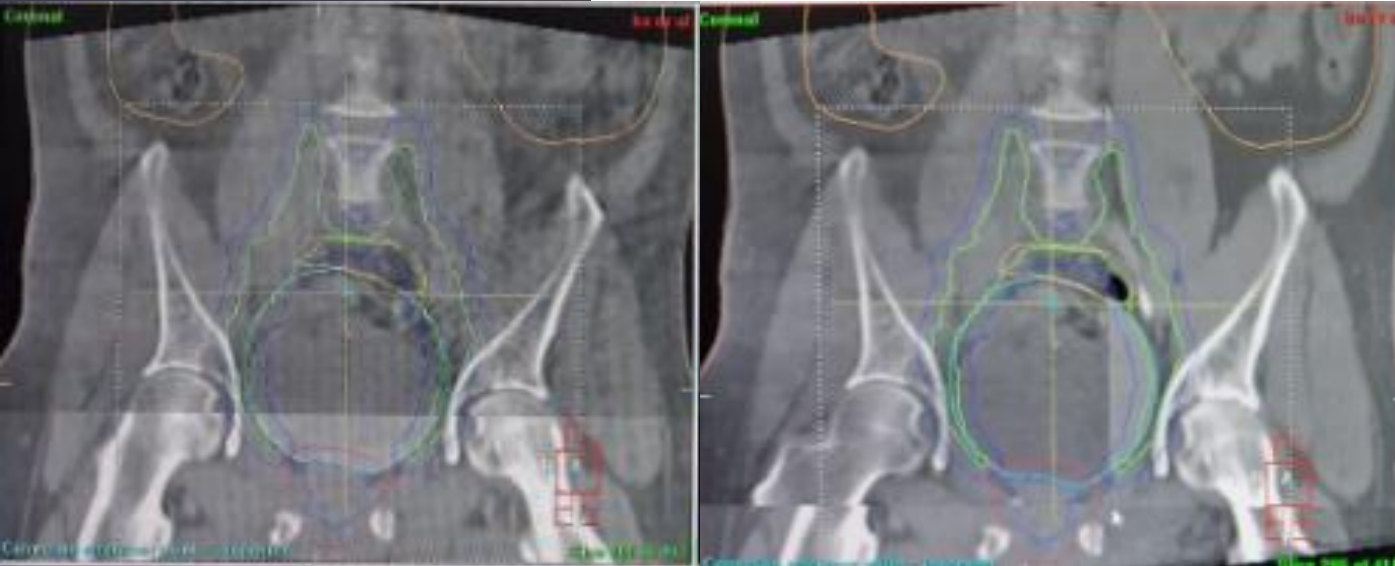




Some inferences...



Excellent agreement with
3D image verification

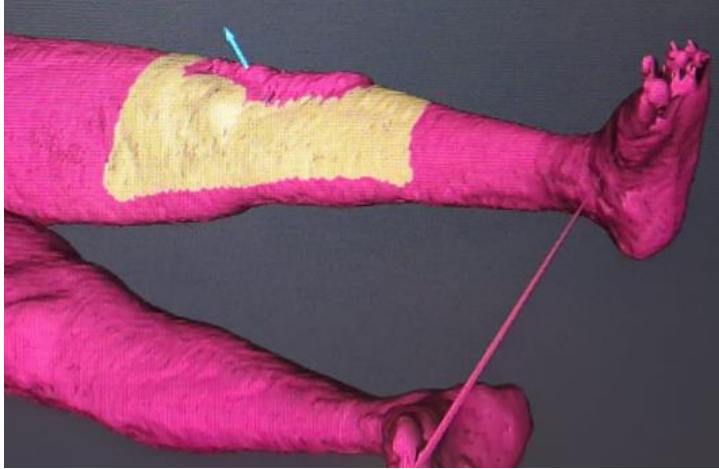


Live correlation to overly distended bladder in
bladder protocol

Management of Extremities

Options

- ☐ Immobilization free
- ☐ Mask
- ☐ Vaclock



Lessons...



- Thought plan is required
- Must limit the time gap between Scan to Txt's
- Simpler Txt's
- Easy ROI
- Perfect guidance using SGRT

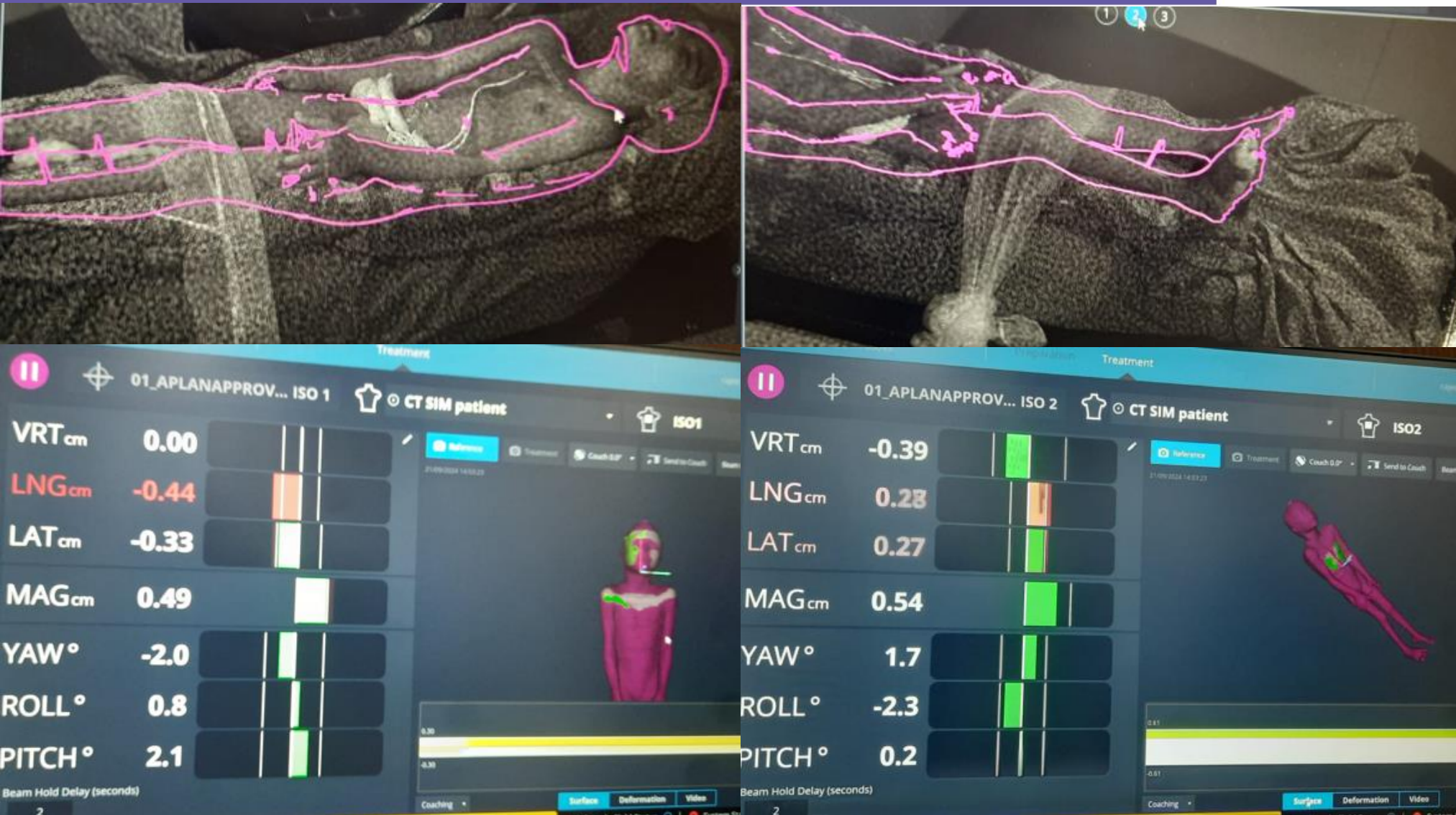
Points to consider

- Vaclock
 - Lateral edges were made below mid body
- Mask
 - Becomes complex for multiple isocenter
- Preparation of Immobilization plays crucial
- Accuracy of CTSIM scan in HFS & FFS
- Use of 180 degree rotatable board
- Additional care for paediatric patients

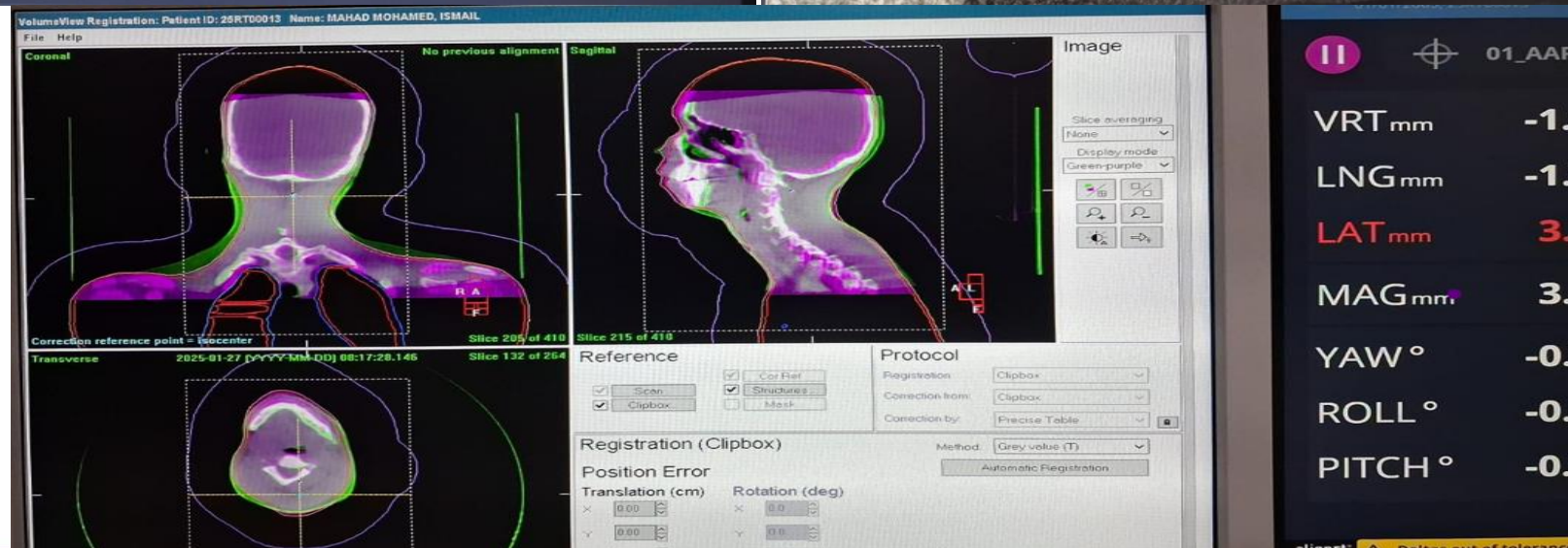
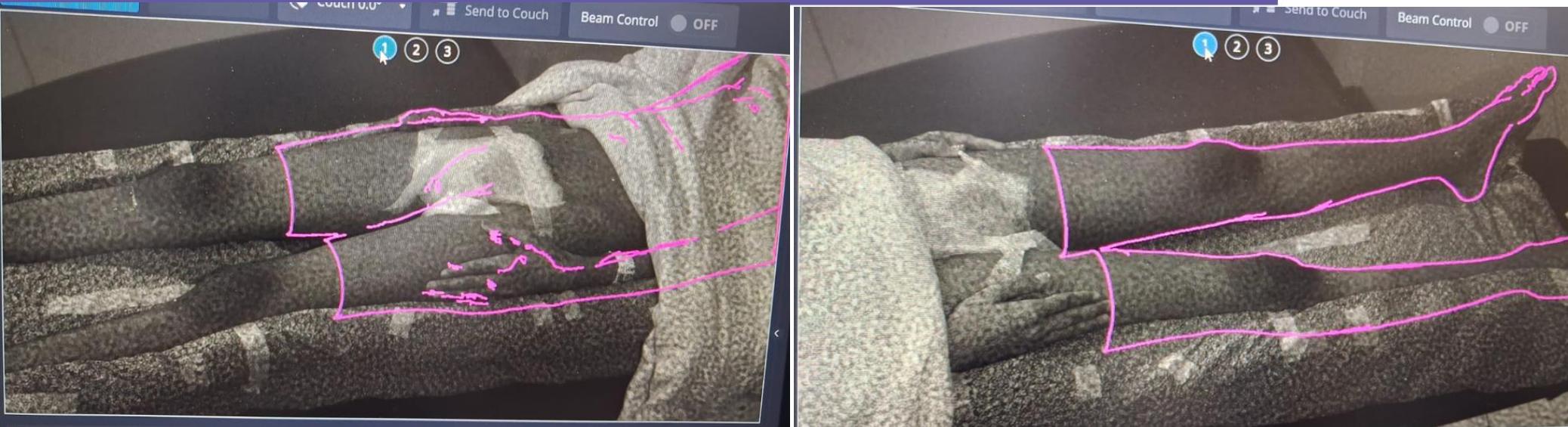
@ Implementation

- ☐ Aligning the patient for whole body
- ☐ Each isocenter can be tracked through SGRT guidance
- ☐ Beam control can also be opted (particularly for total dose)
- ☐ 3D volumetric imaging can be limited

Management of Total Body Irradiation(TBI)

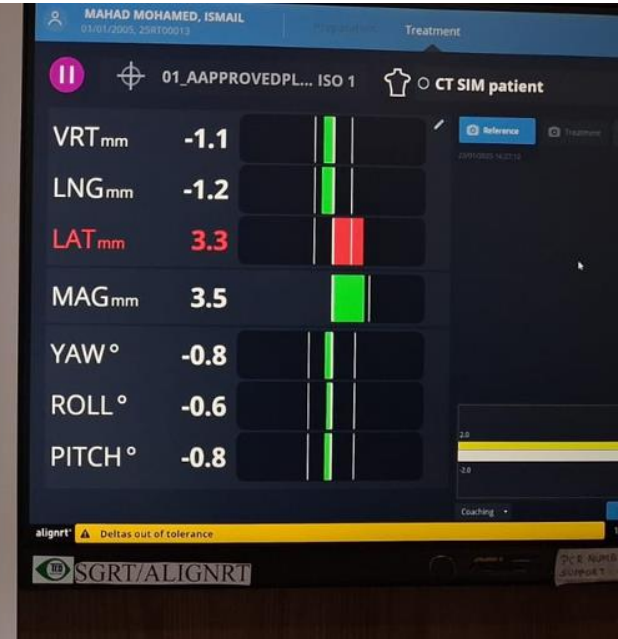
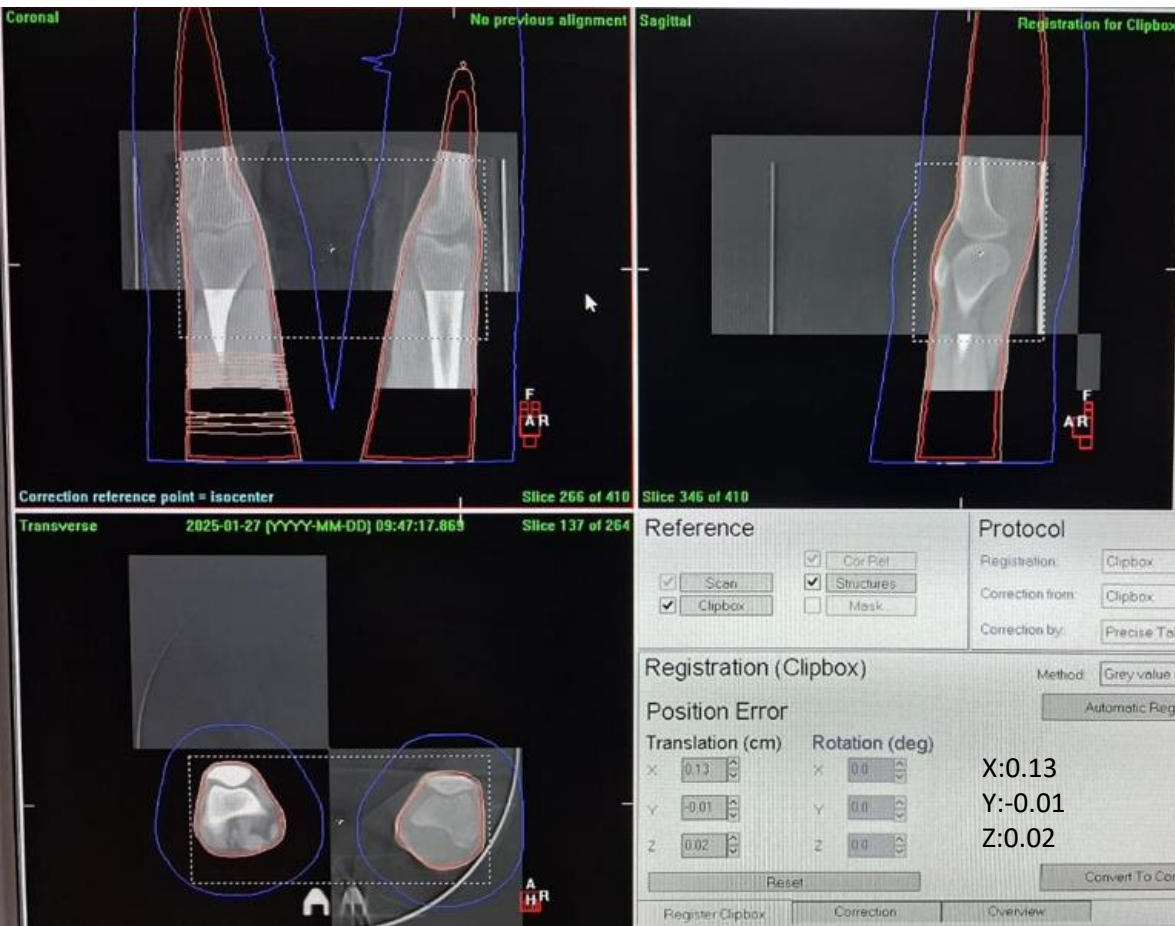


Management of Total Body Irradiation(TBI)



Management of Total Body Irradiation(TBI)

XVI challenge for Neck



* Role of postural video is incredible

Conclusion



- Understanding the technology
- Continued determination of the team
- Continued training imparted to the team

Thank You



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