

SUNWAY SHARING EXPERIENCE:

ADVANCED APPLICATION TECHNIQUE WITH ALIGN-RT USING OPEN FACE MASK

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SESSION OBJECTIVES

- Why we introduced Open Face Mask
- Clinical workflow using Align-RT
- Practical setup techniques
- Common Challenges
- Lesson learned from our experience

WHY OPEN FACE MASK?

THE PATIENT CHALLENGES

- Fear and anxiety before treatment
- Claustrophobic from the conventional full-face thermoplastic mask
- Feelings of confinement and vulnerability
- Difficult remaining calm during immobilisation

ADVANCED SOLUTION

- Improve patient comfort
- Reduce feelings of claustrophobic
- Enhance communication and reassurance during treatment
- Maintain treatment accuracy through Surface Guided Radiation Therapy

Why Combining Open Face Mask with SGRT?

**Without
SGRT**

Less facial
coverage

Potential concern
regarding
immobilisation
accuracy

**With
Align-RT**

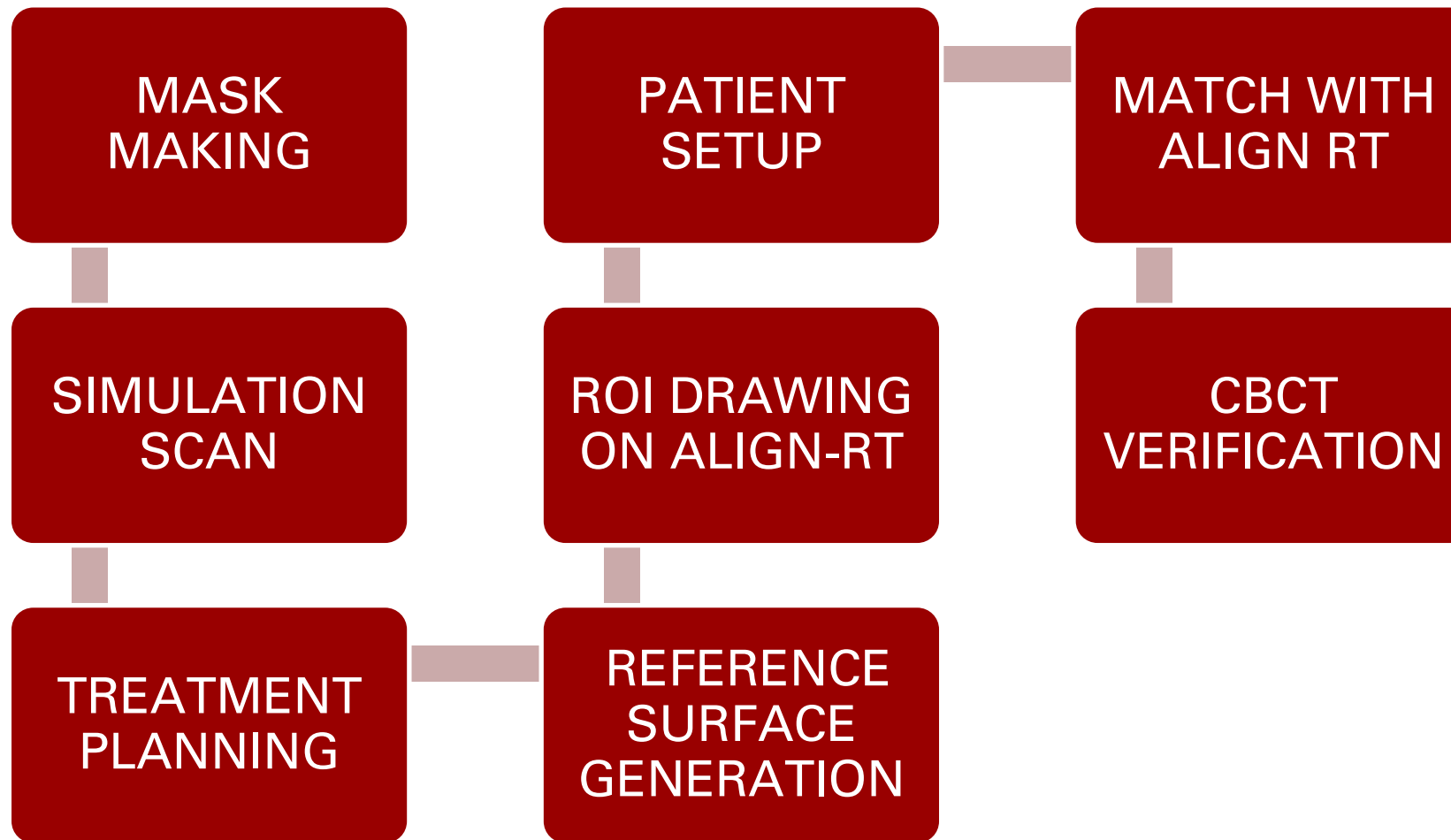
Real time surface
monitoring

Motion Detection

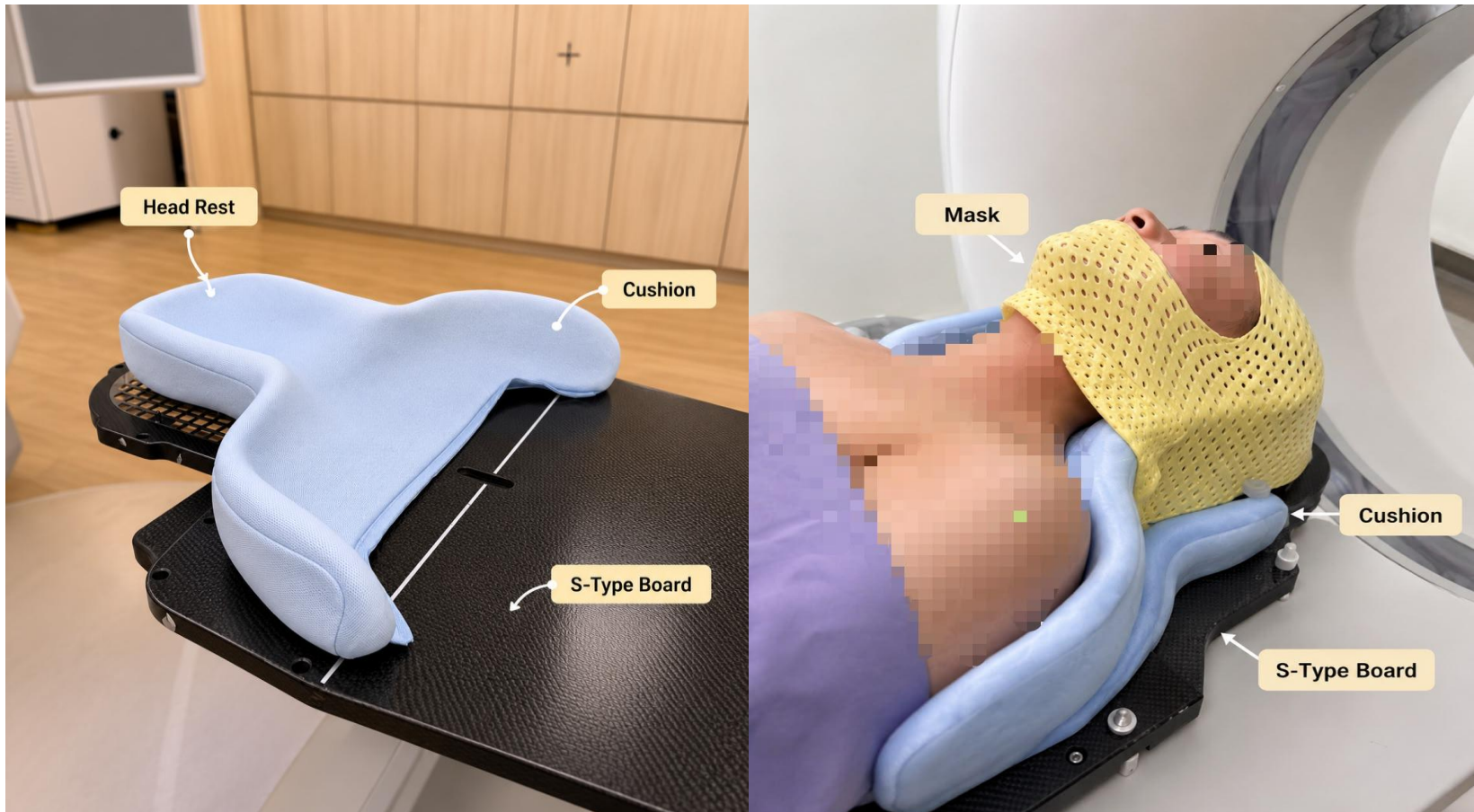
Continuous
patient
observation

Increased
confidence using
Open Face Mask

SUNWAY CLINICAL WORKFLOW



PATIENT SETUP



S-TYPE BOARD

HEAD REST

KNEEFIX

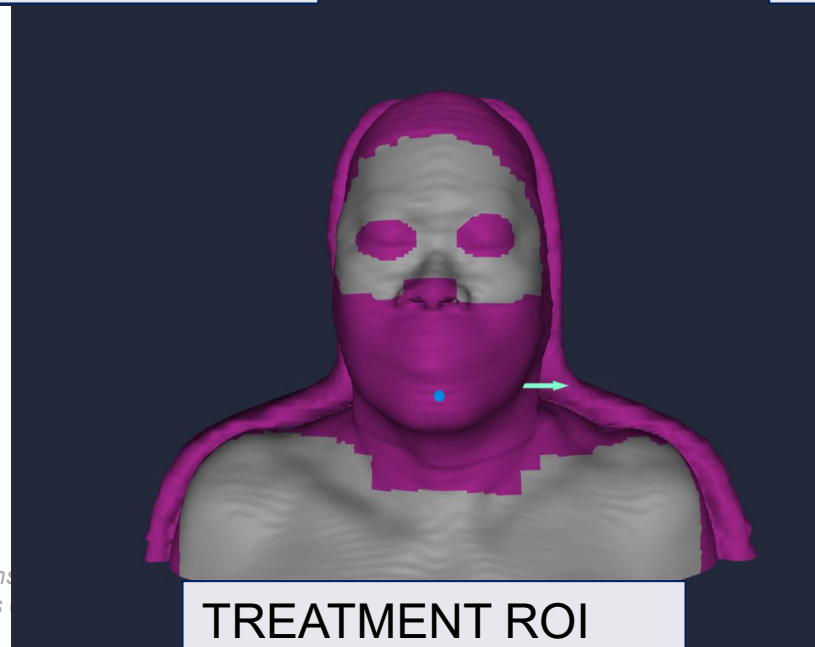
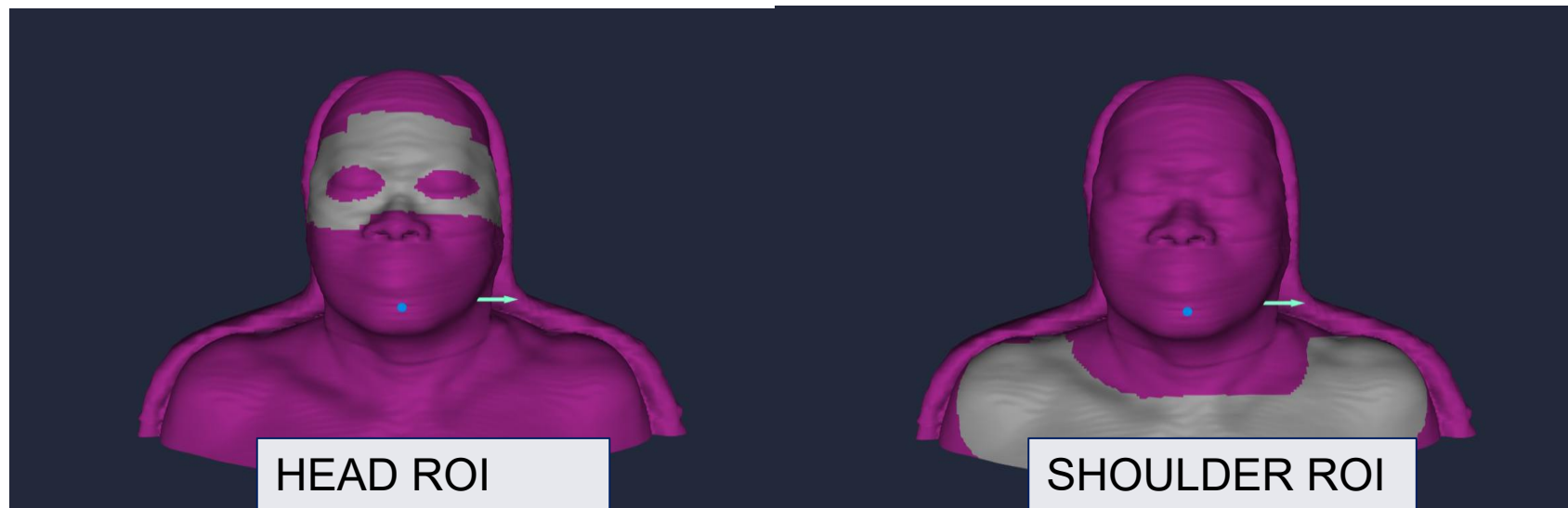
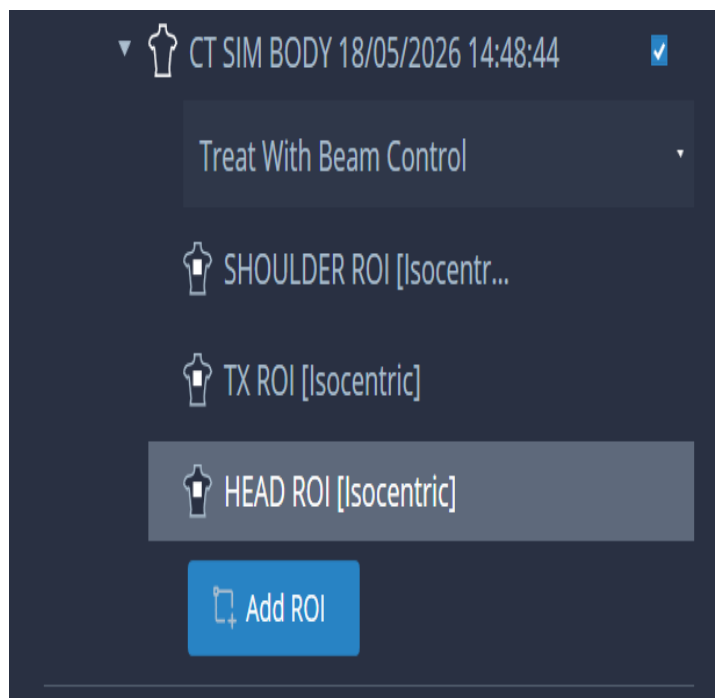
FEETFIX

FIBREPLAST WITH

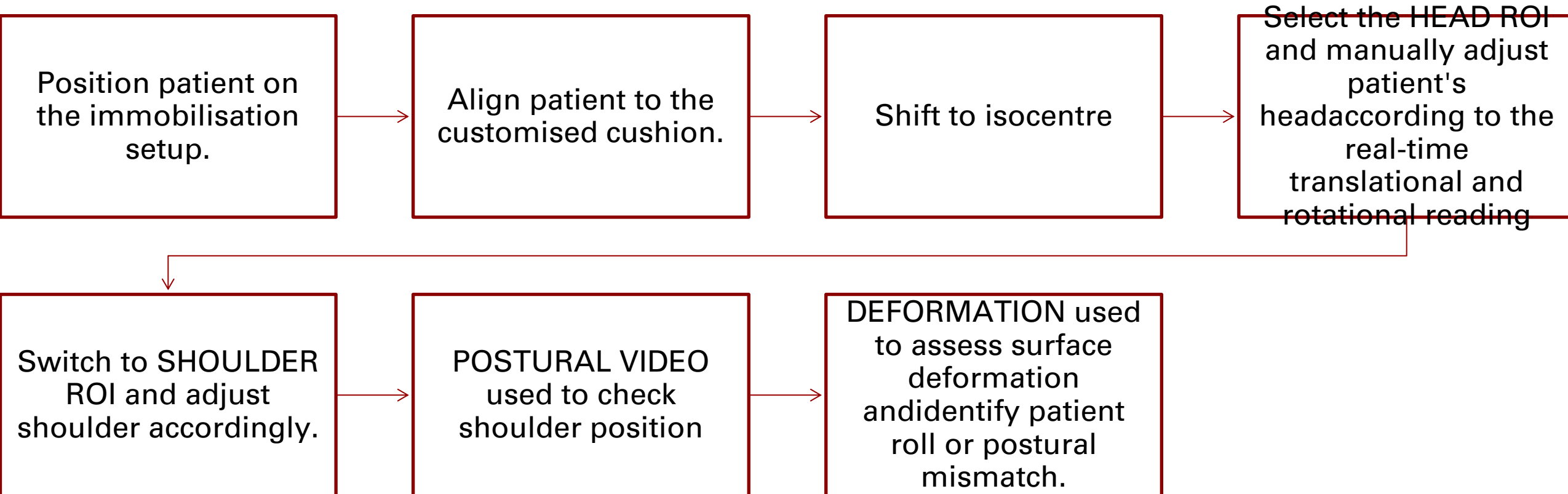
INTEGRATED SHIM

CUSHION

ROI DRAWING ON ALIGN RT

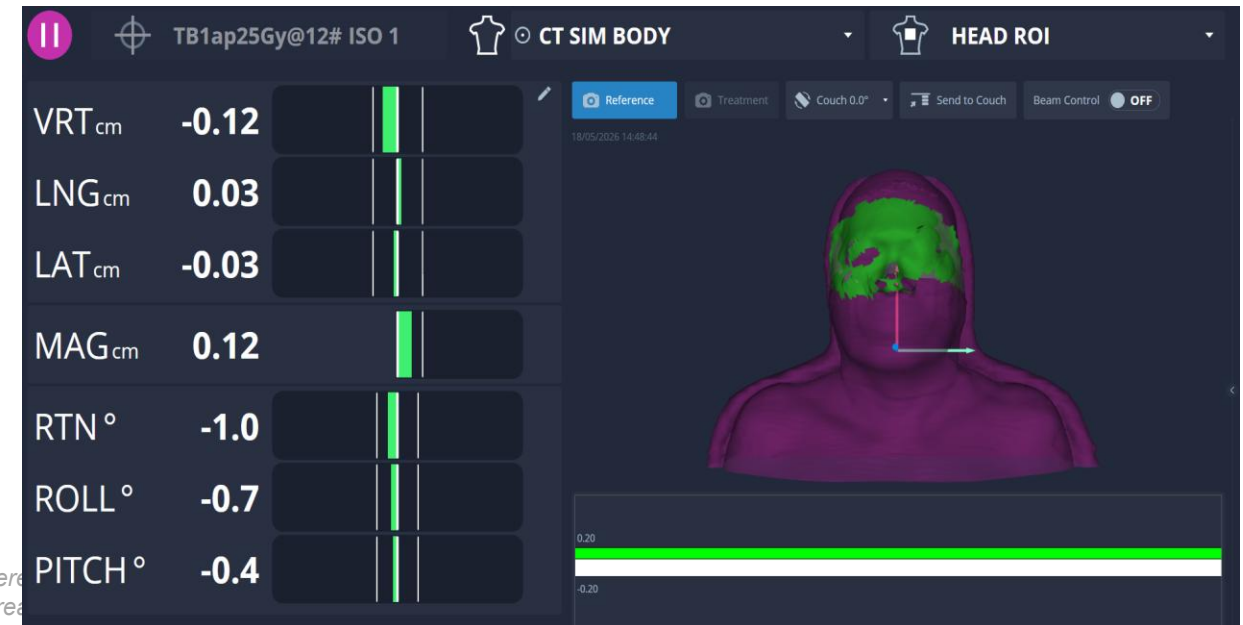
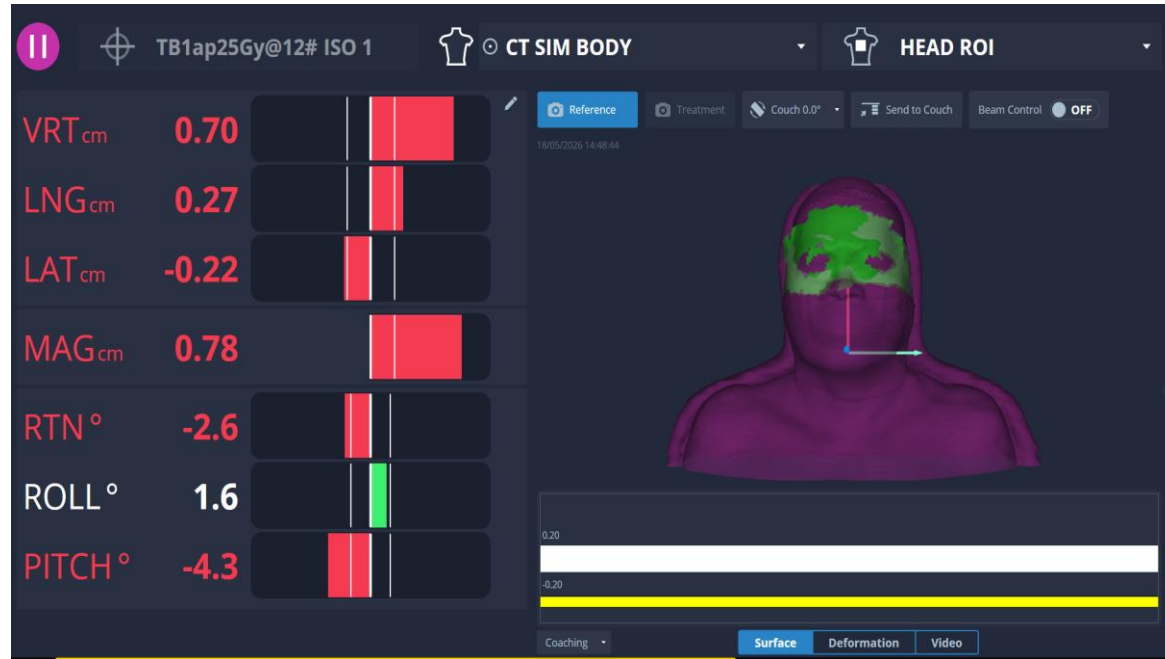


PATIENT SETUP

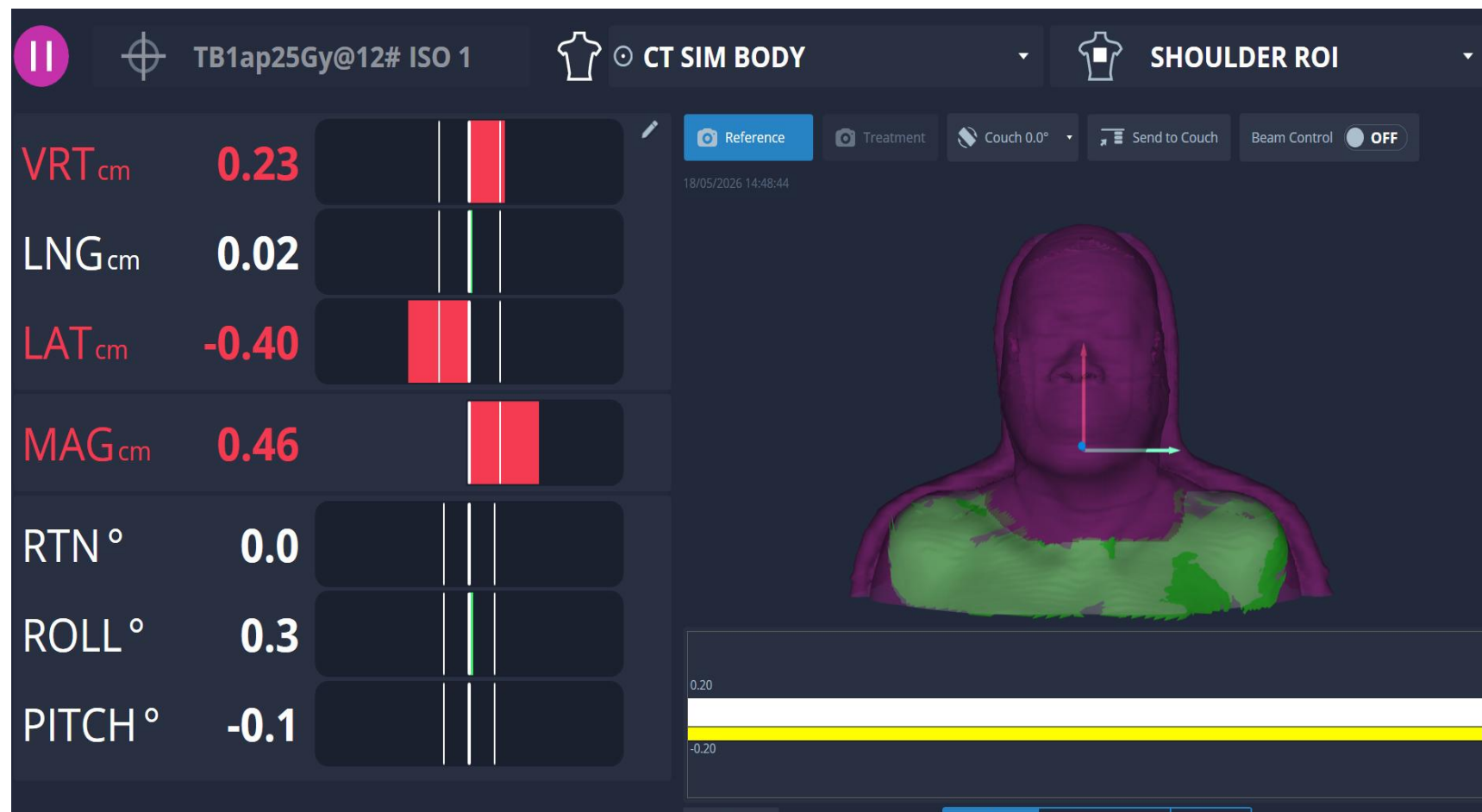


MANUAL ADJUSTMENT USING SURFACE ROI

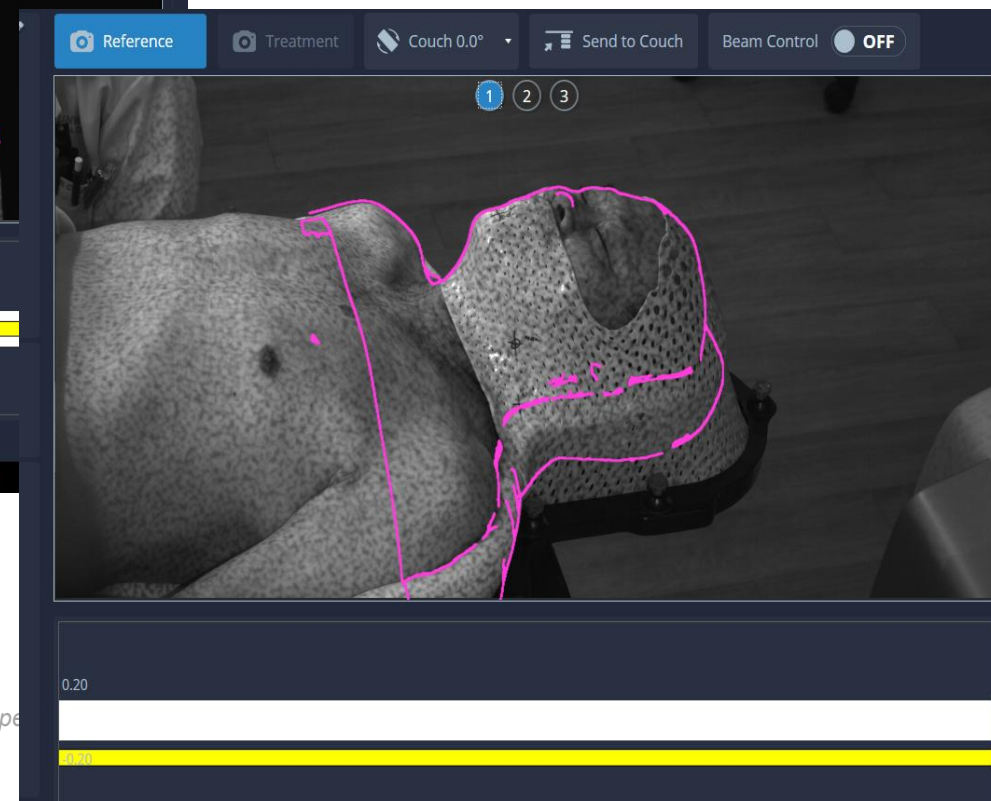
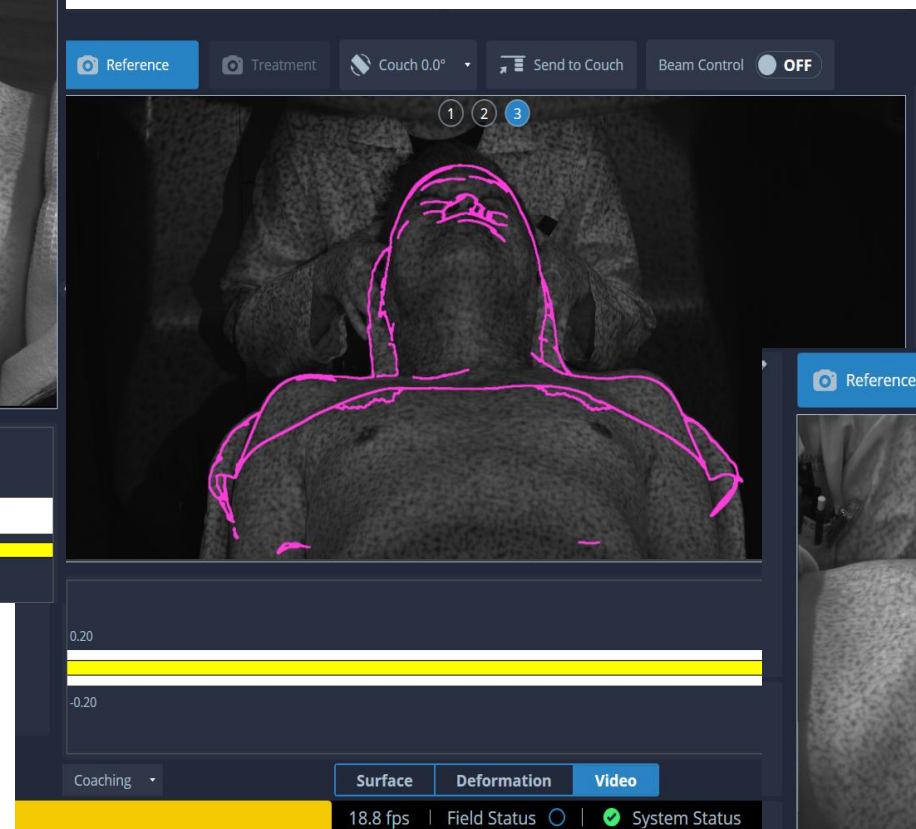
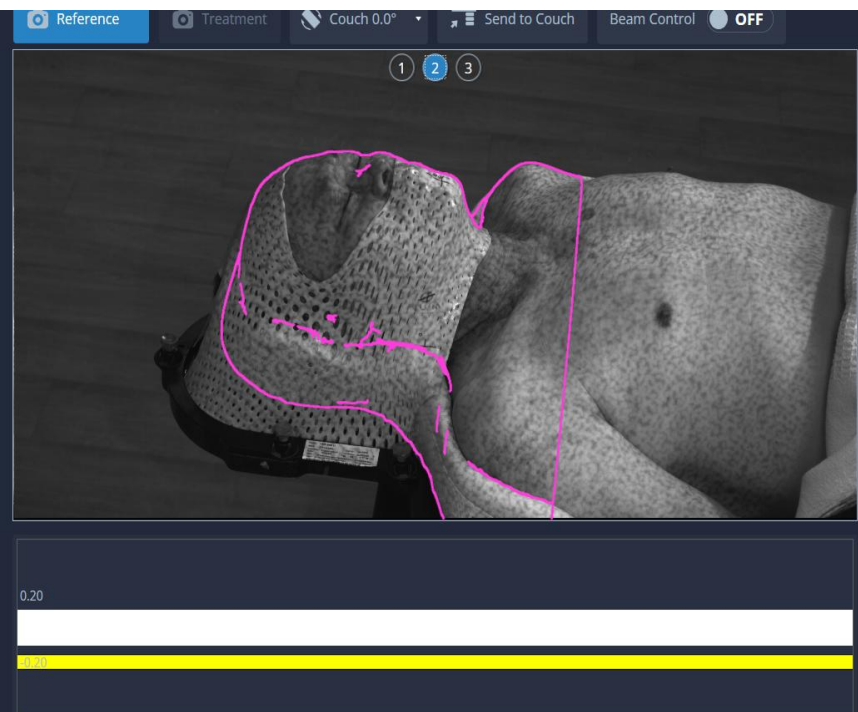
Select Head ROI and manually adjust the head



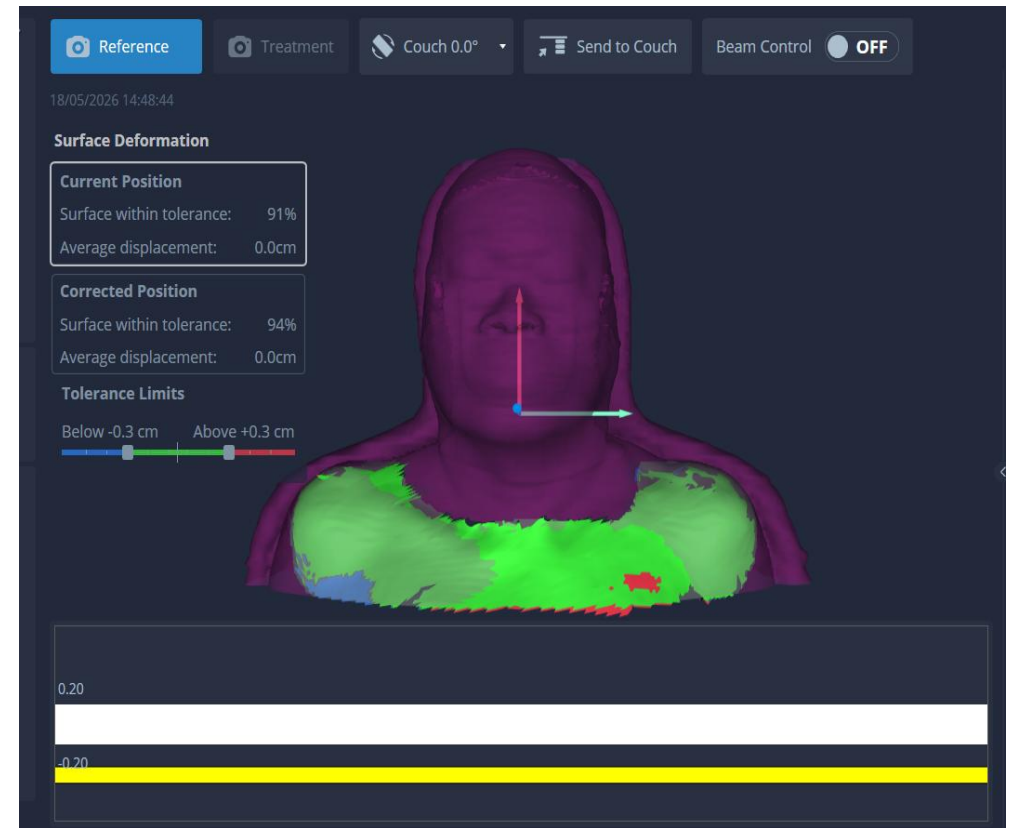
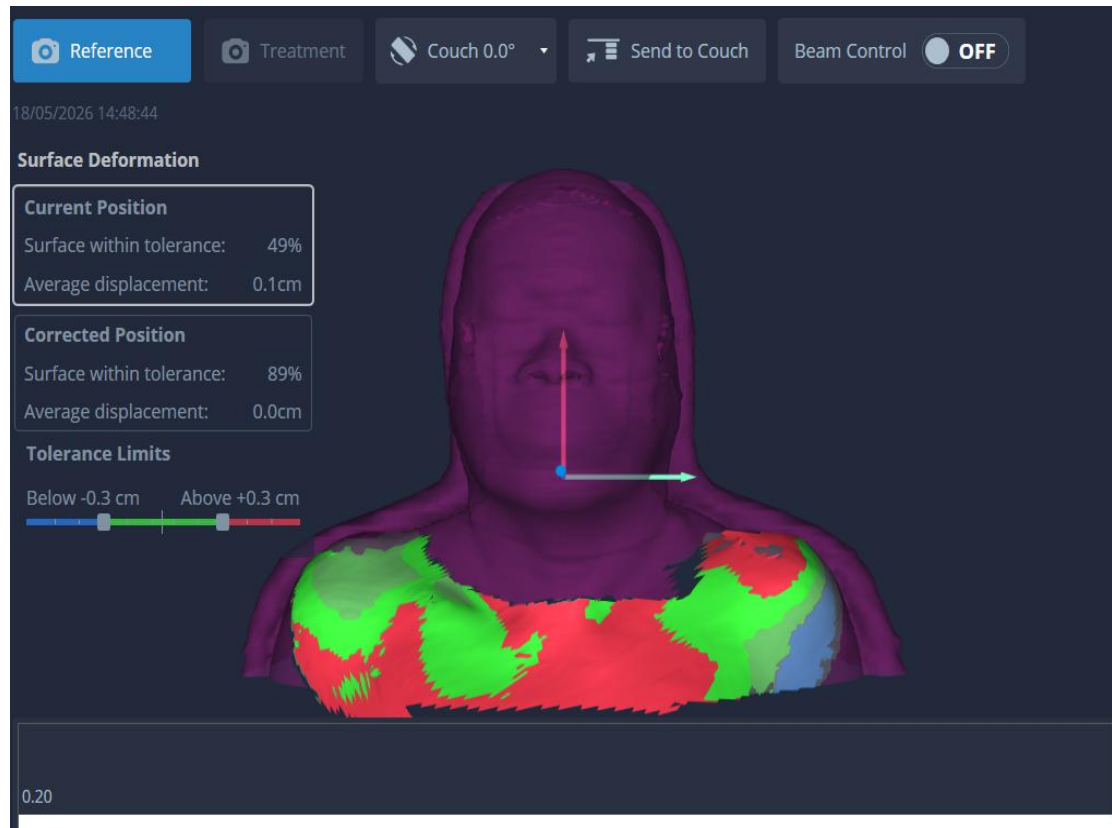
Switch to SHOULDER ROI and adjust shoulder accordingly.



POSTURAL VIDEO

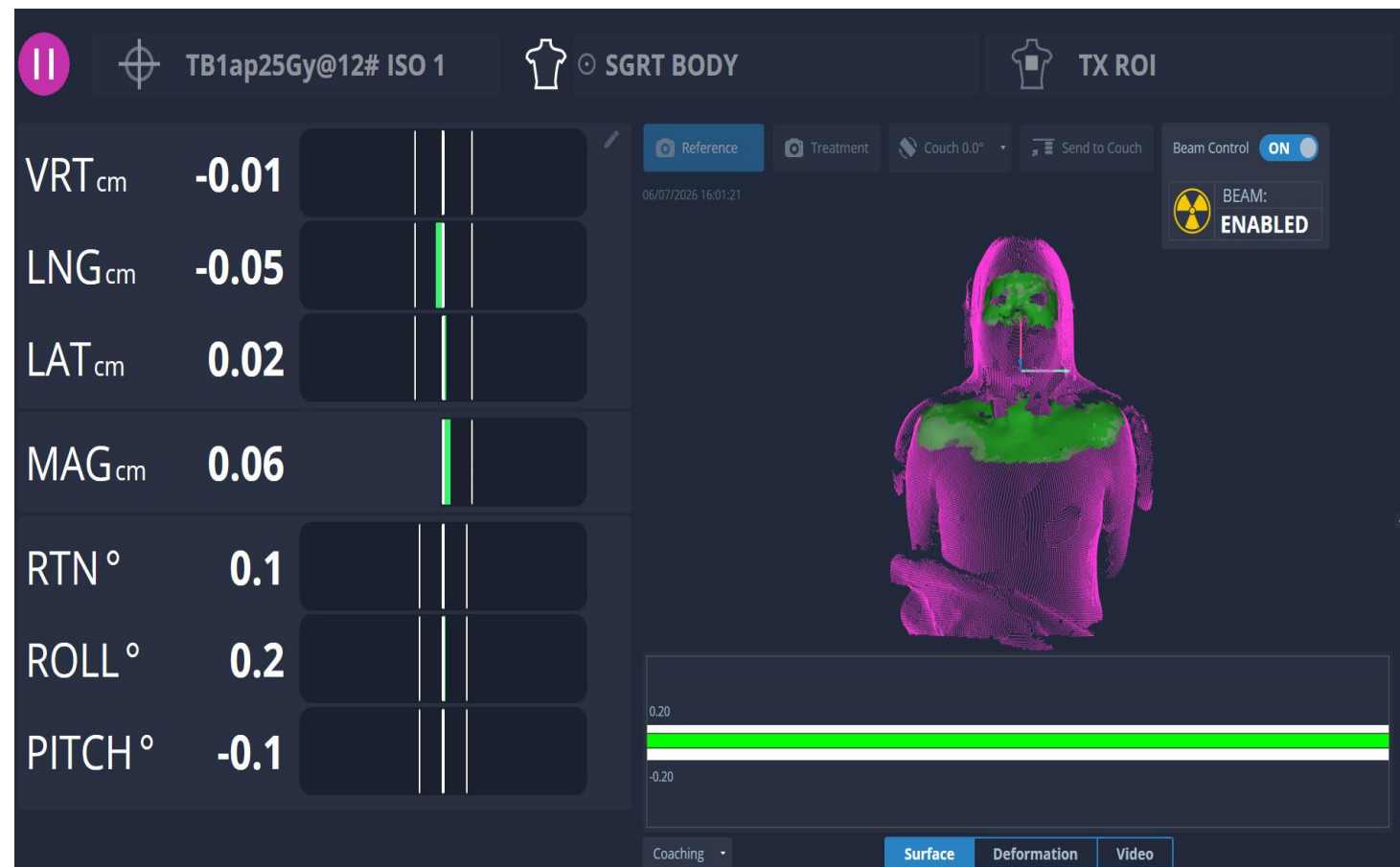


DEFORMATION

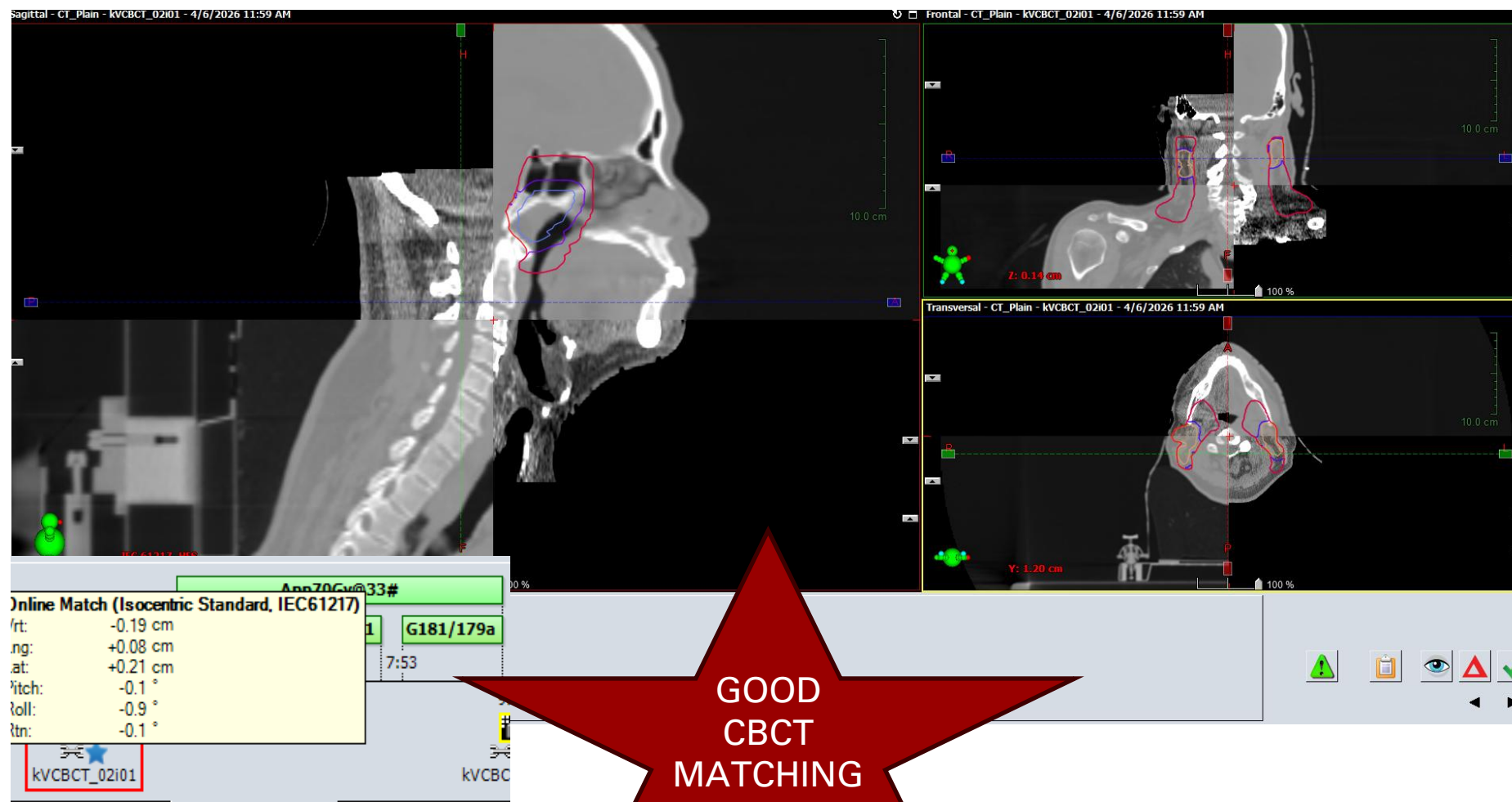


TREATMENT DELIVERY

- Align-RT continuously monitors:
 - Translational movement
 - Rotational movement
- Beam hold when patients move out of tolerance
- Advantages:
 - Continuous monitoring
 - Increased confidence
 - No additional imaging dose



Does Open Face Compromise Positioning?



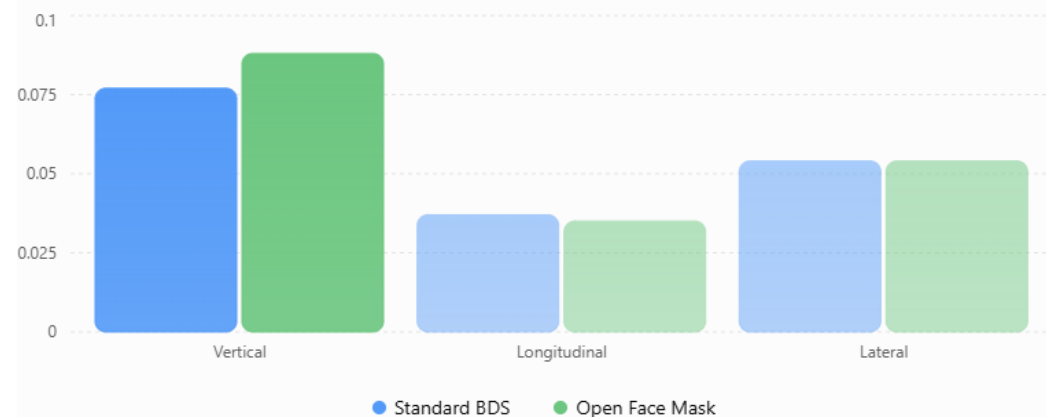
Preliminary Comparison of Setup Accuracy

A. Translational Difference

Direction	Standard BDS	Open Face Mask
Vertical (mm)	0.077	0.088
Longitudinal (mm)	0.037	0.035
Lateral (mm)	0.054	0.054

Mean Translational Difference Between Primary and Nodal Registration

Standard BDS versus Open Face Mask.



B. Rotational Difference

Rotation	Standard BDS	Open Face Mask
Pitch (°)	0.600	0.720
Roll (°)	0.640	0.405
Rotation (°)	0.540	0.510

Mean Rotational Difference Between Primary and Nodal Registration

Standard BDS versus Open Face Mask.



Common challenges during implementation

Patient related

- Anxiety during the first treatment
- Difficulty maintaining neutral facial expression
- Weight loss leading to changes in mask fit
- Shoulder relaxation

Technical

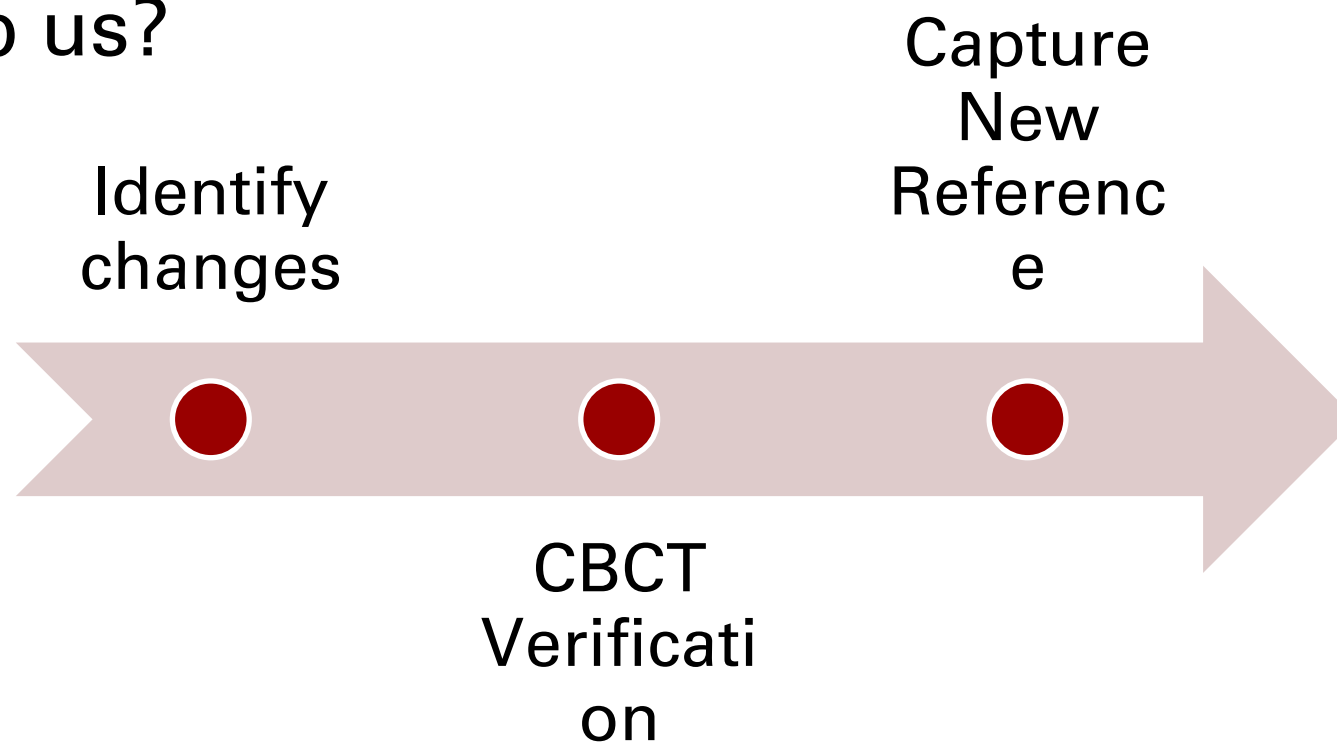
- Selecting appropriate ROI setup
- Distinguishing true positional errors from surface deformation

Workflow

- Additional time required during the learning phase
- Staff familiarisation with advanced Align-Rt features

Adapting to Patient Changes

- Weight loss/ tumour response -> change the original surface
- How SGRT help us?



Lessons Learned

1. Patient preparation is essential

- Explain the procedure before simulation.
- Reassure anxious patients throughout treatment.

2. Reproducible immobilisation starts at simulation

- Correct positioning on the S-Type board.
- Appropriate headrest and cushion selection.
- Good mask moulding is critical.

3. Use AlignRT as a decision-support tool

- Head ROI for head positioning.
- Shoulder ROI for shoulder alignment.
- Deformation to identify postural differences.
- Postural Video™ for visual confirmation.

4. Verify, then adapt

- CBCT remains the gold standard for anatomical verification.
- Capture a new reference surface when clinically appropriate

CONCLUSION

Patient experience matters

- the open face mask provides a less confined treatment experience.

AlignRT features enhance our setup workflow

- multiple ROIs, Deformation and Postural Video™ help us understand and optimise patient position.

SGRT-guided positioning shows good agreement with CBCT

- supports confidence in open face mask setup

Continuous surface monitoring and post-treatment verification

- provide additional confidence in patient stability throughout treatment.

THANK YOU
