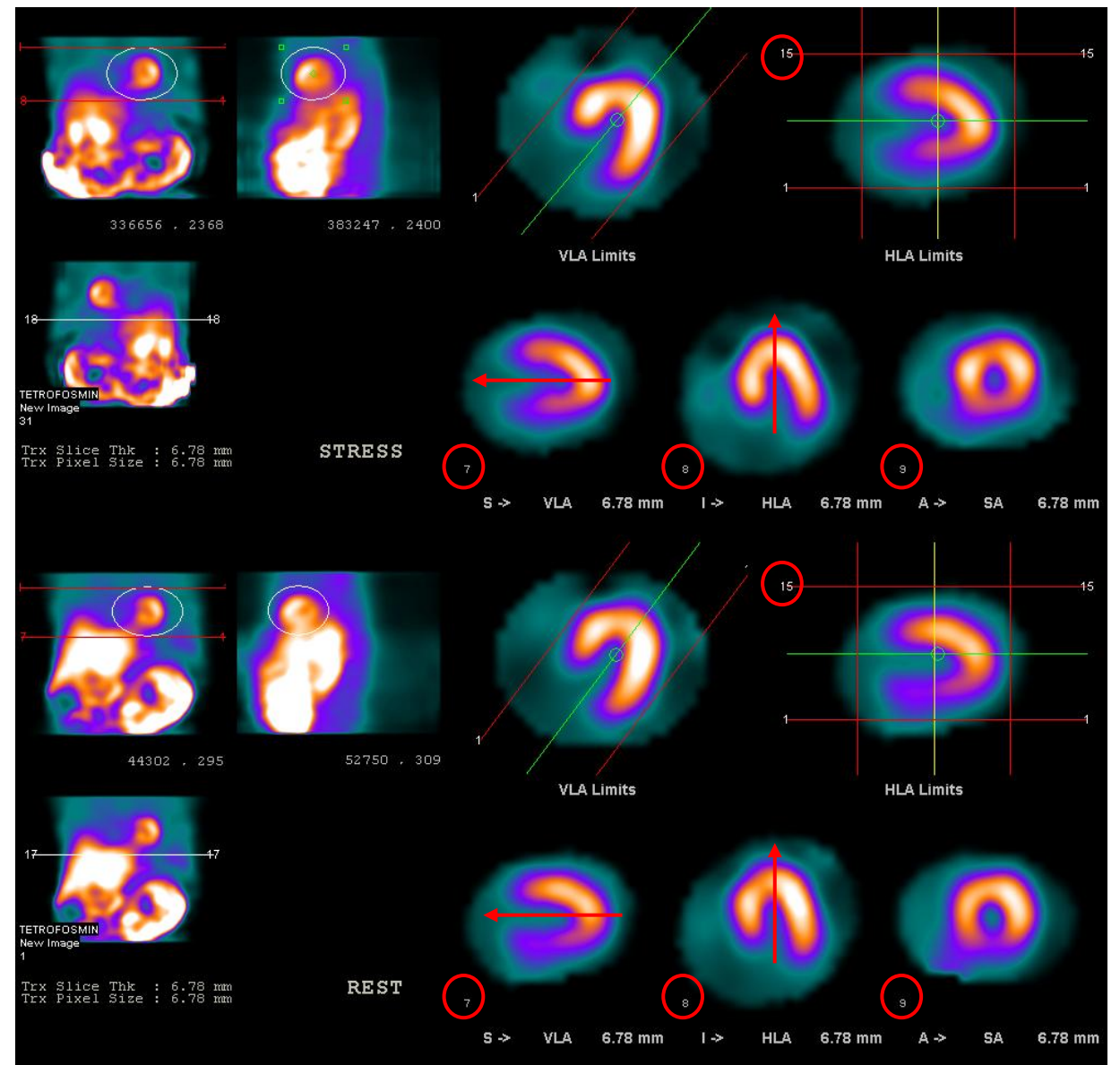
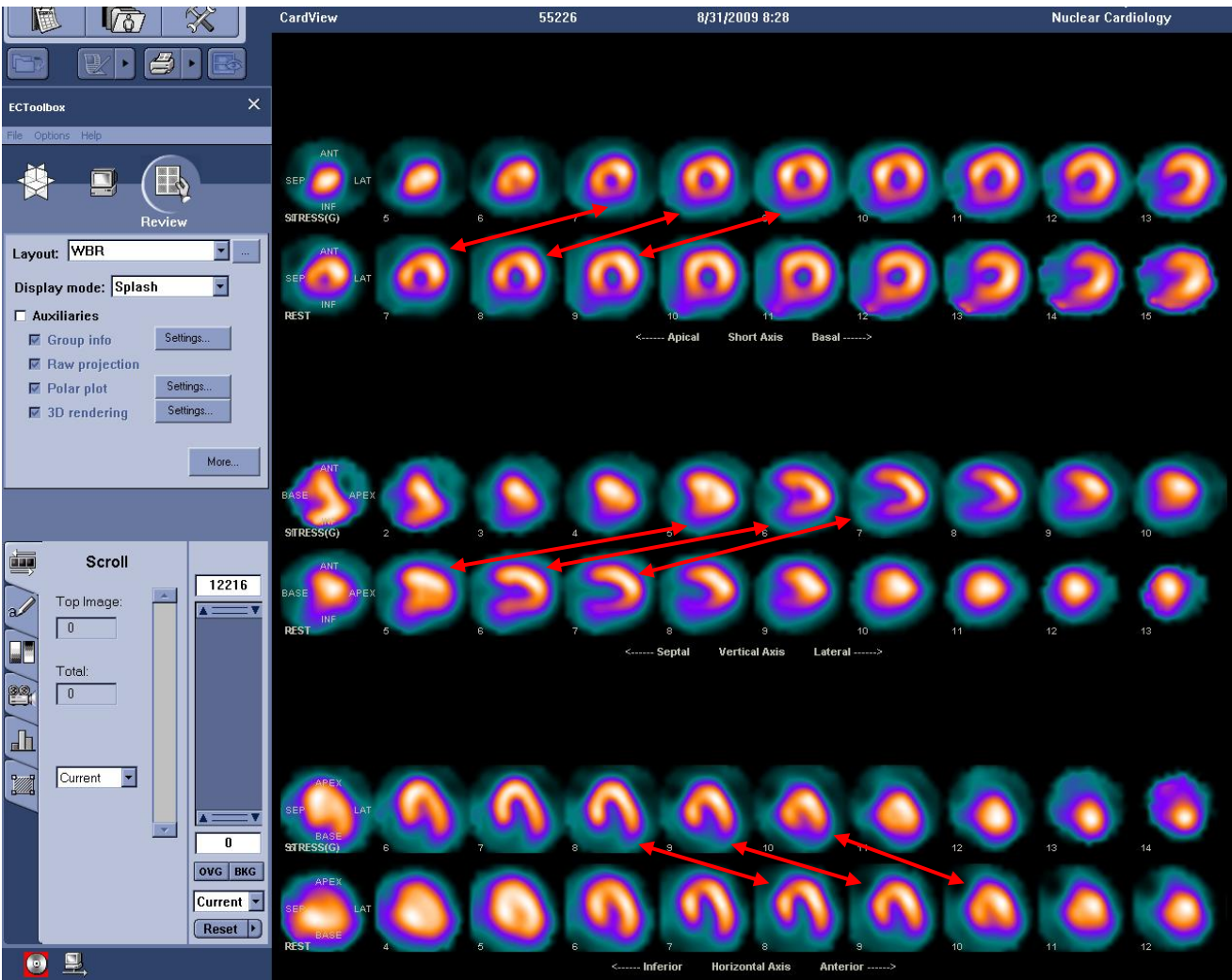


Unprocessed ROI's

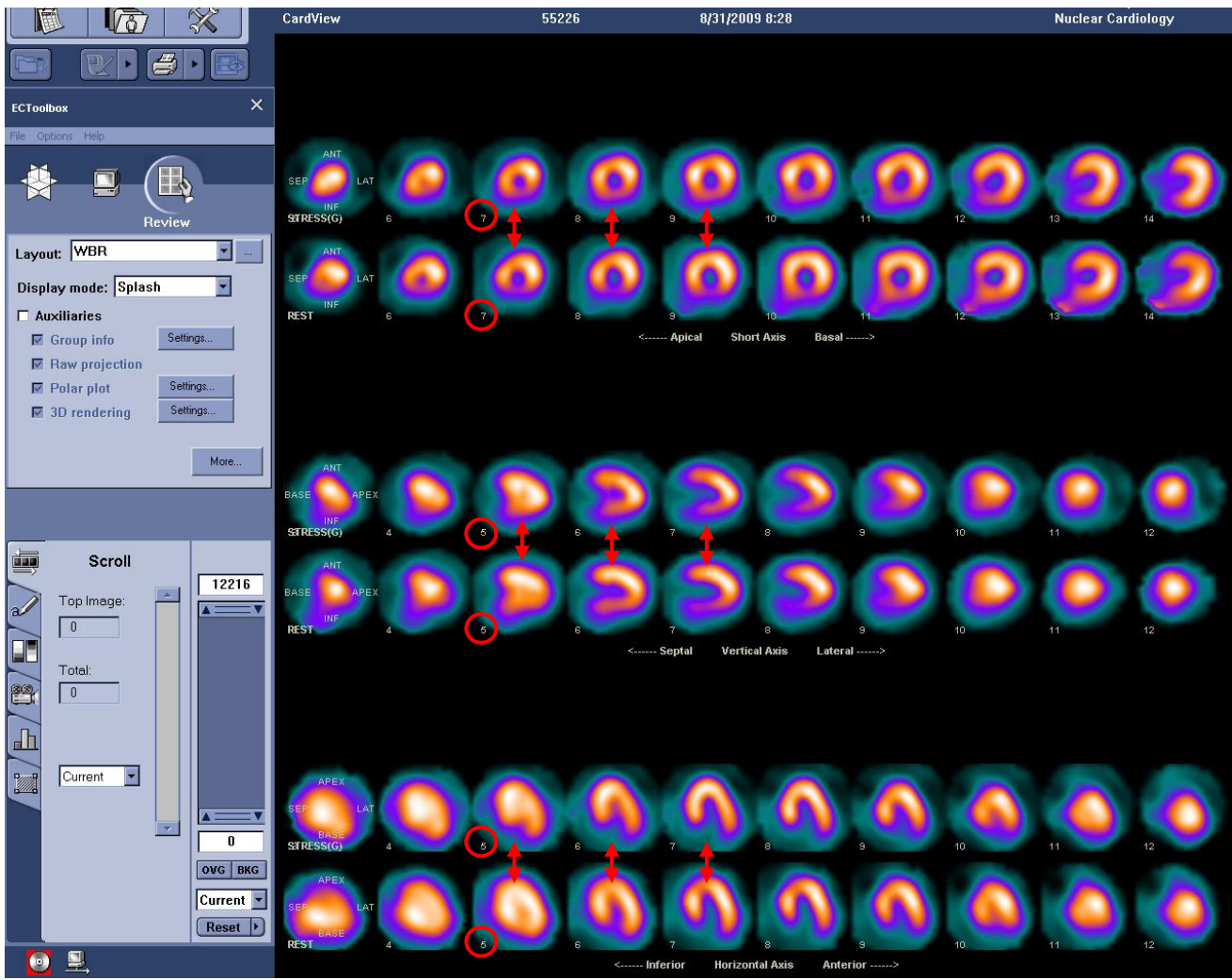


Correctly Placed ROI's

1. ROI's around the LV should be placed as close to the myocardial walls as possible.
2. The red circles depict the reference slice and slice number. The number of slices for both the rest and stress should be identical.
3. The red arrows portray how to align the slice axis correctly

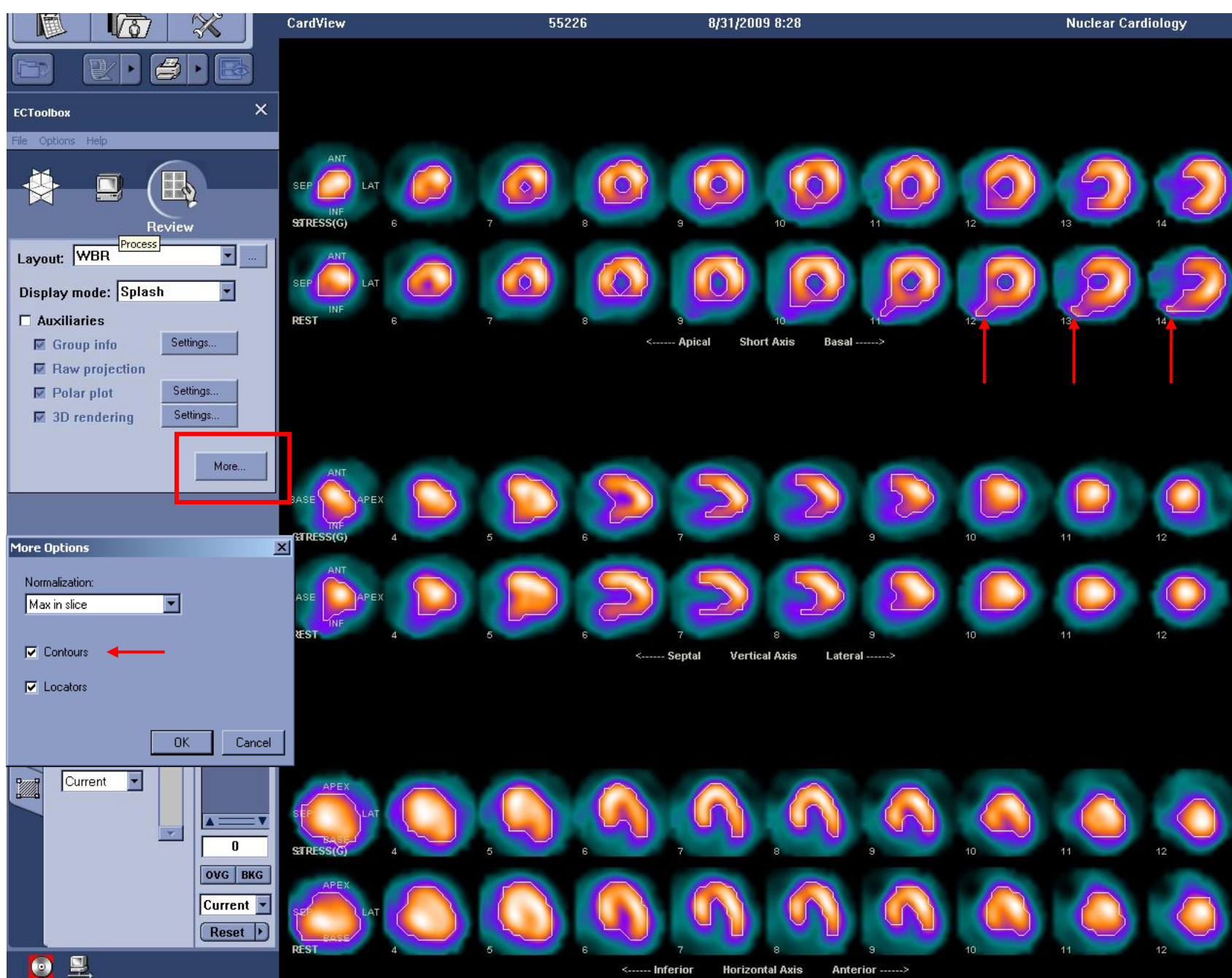


Non-Aligned Slices



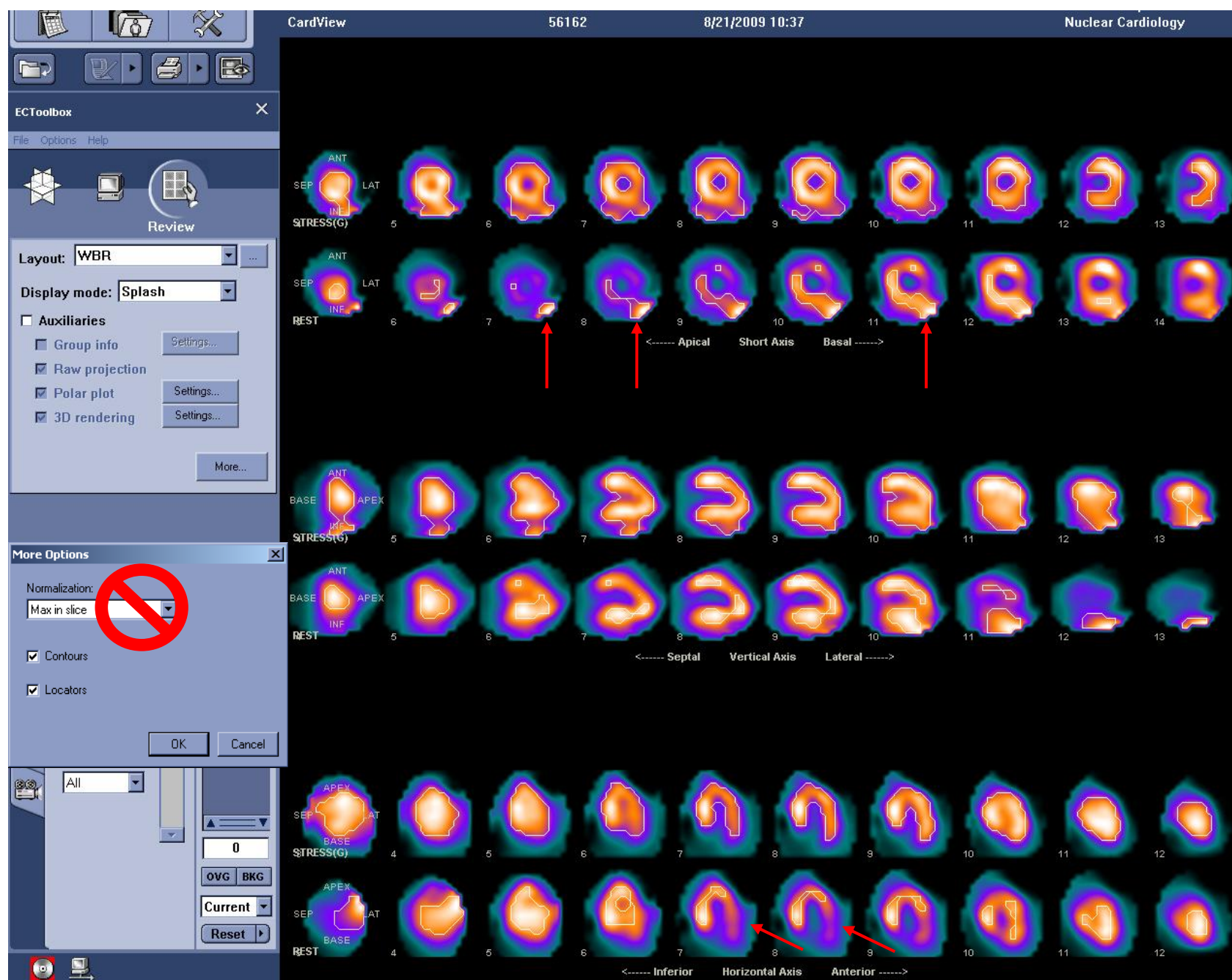
Aligned Slices

1. The frame numbers in the rest or stress will not match in some cases even if aligned correctly.



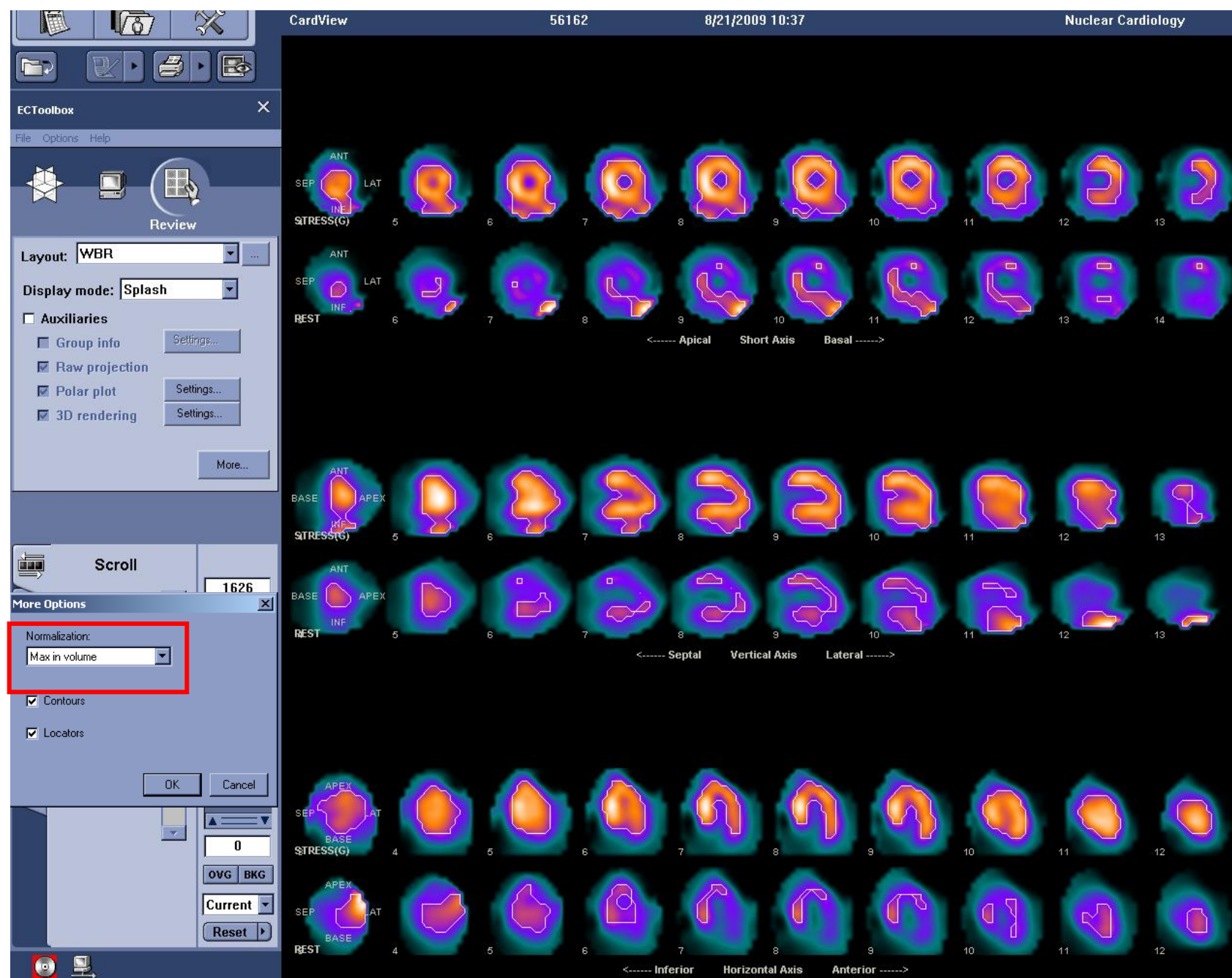
How the Computer Normalizes Slices

1. Left-Click 'More' for Normalization Options
2. Turning on 'Contours' shows computer calculated ROI's around myocardium
3. Looking at the Short-Axis contours – the ROI's include hepatic uptake which in this case is not concentrated enough to offset the myocardial count profile



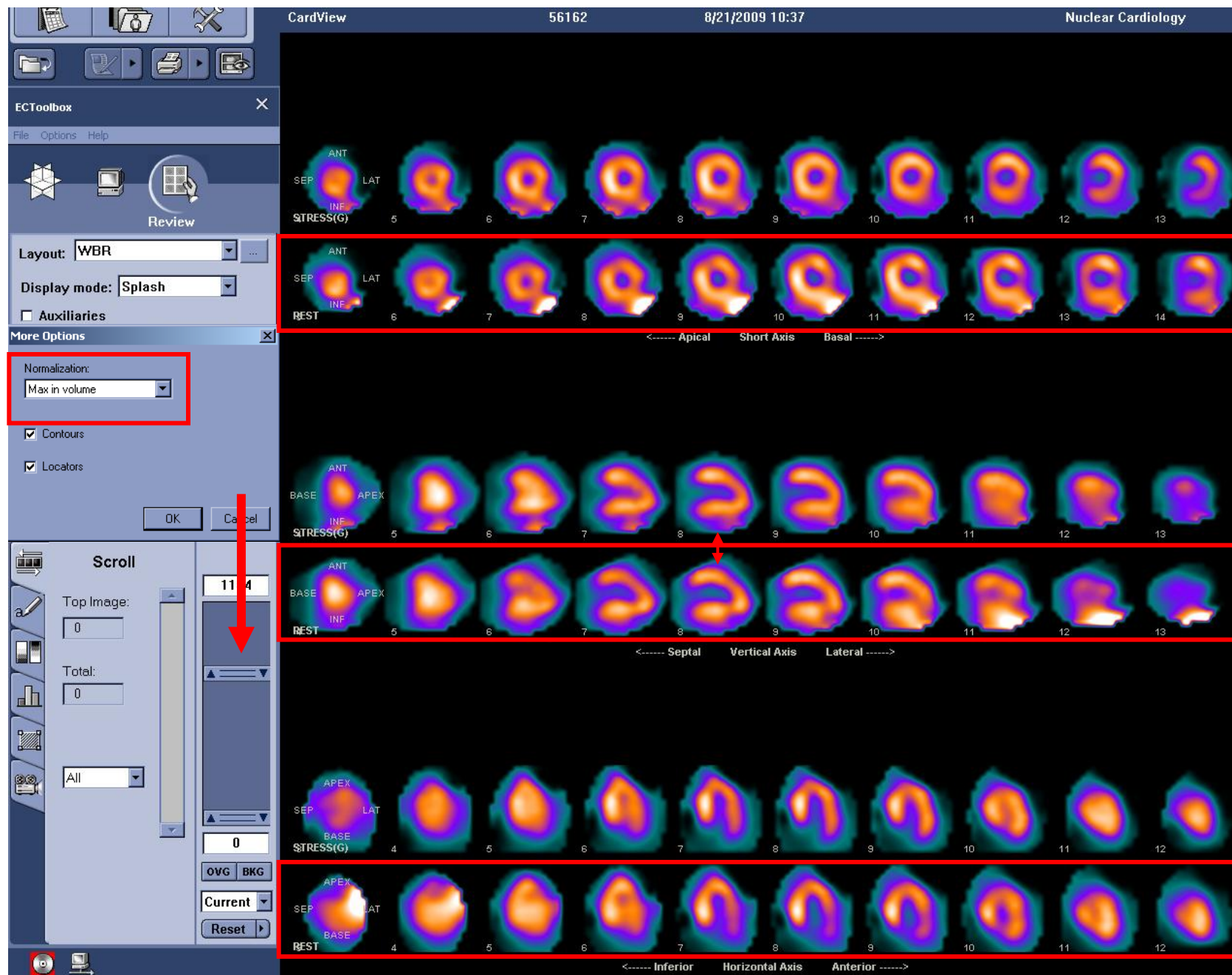
Incorrect Implementation of Normalization

1. In the presence of concentrated extra-cardiac activity – slice normalization should not be used.
2. The contours show that the computer is normalizing the myocardium count profile to the sub-diaphragmatic activity.
3. This improper use of normalization depicts the lateral wall as having lower perfusion on the rest images.



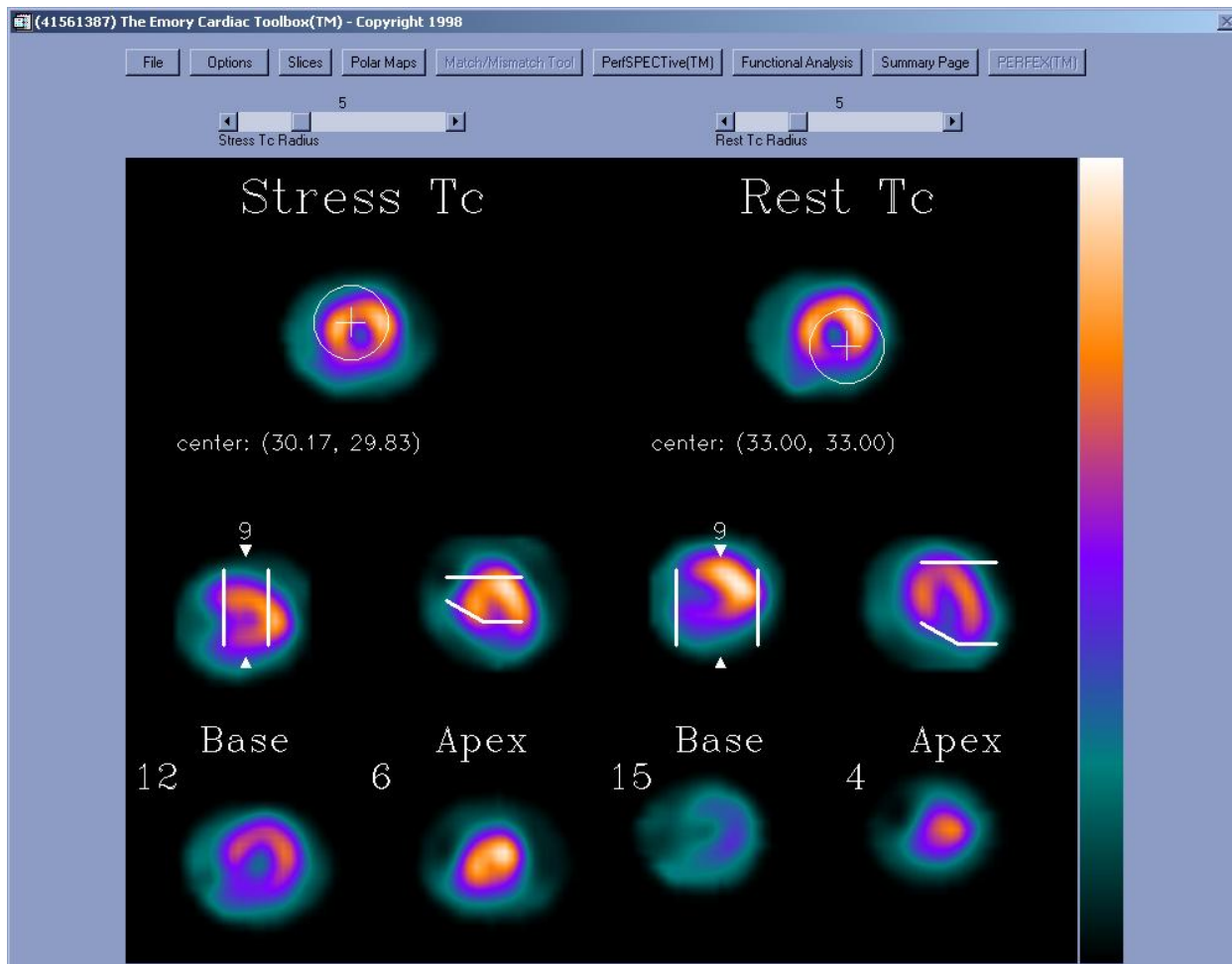
Incorrect Implementation of Normalization

1. Switching the normalization to 'Volume' displays the rest images as having very little counts.

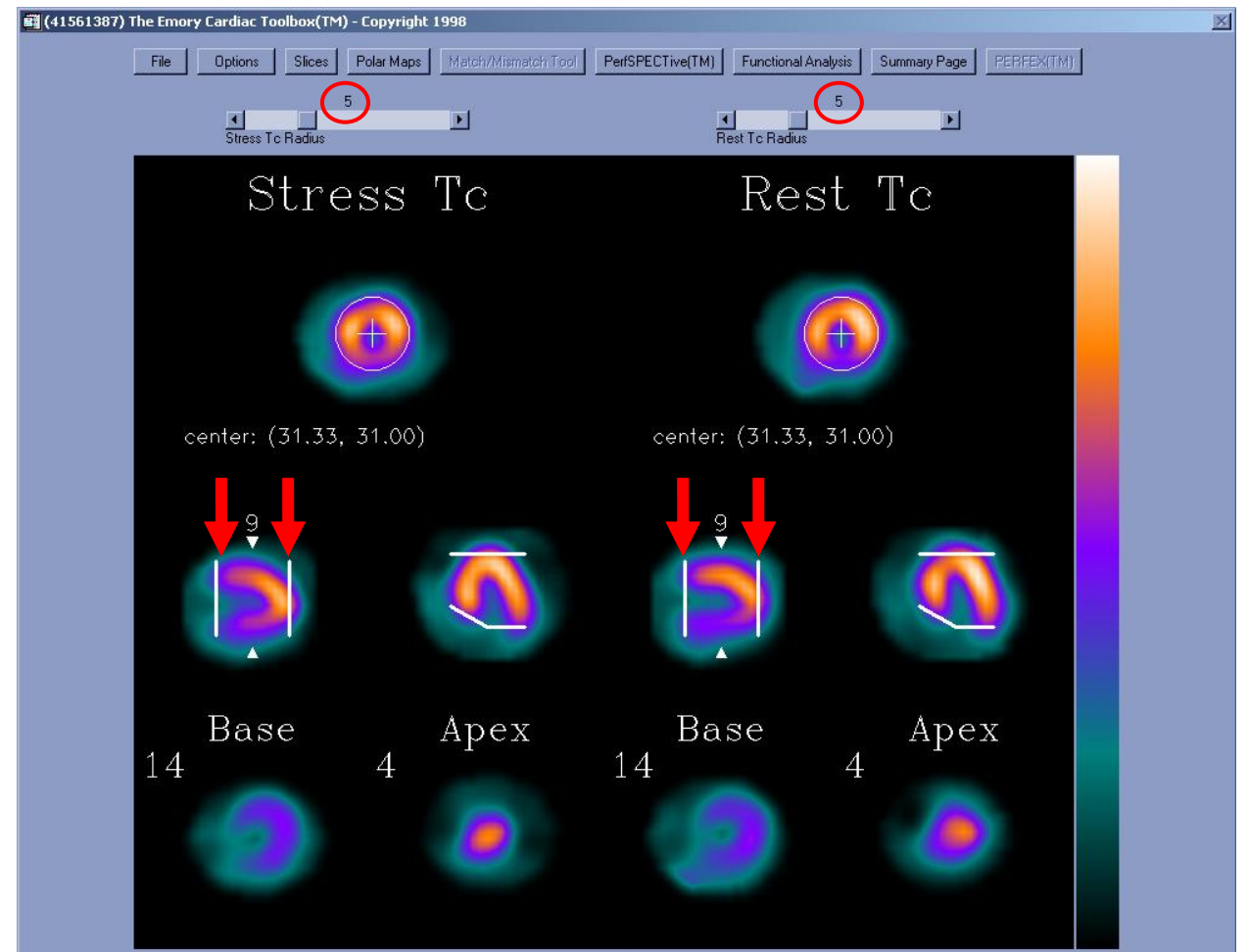


Correct Implementation of Normalization

1. Make sure that 'Volume' is chosen.
2. Left-Click either the Rest or Stress slices; whichever has the most impact from the extra cardiac activity. In this example it's the rest.
3. Manually bring up the contrast until the count profile matches that of the stress.

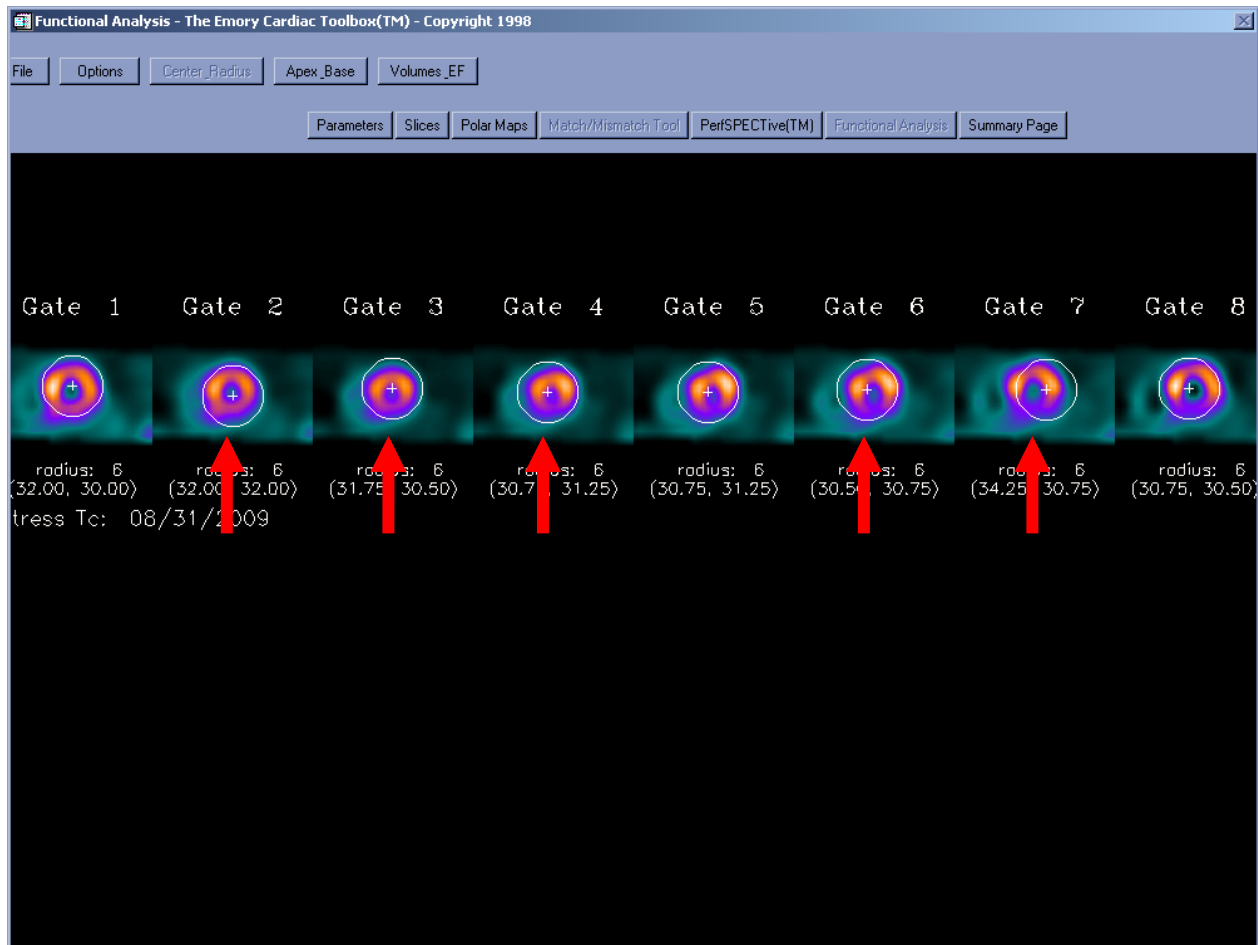


Incorrect ROI Placement for Polar Maps



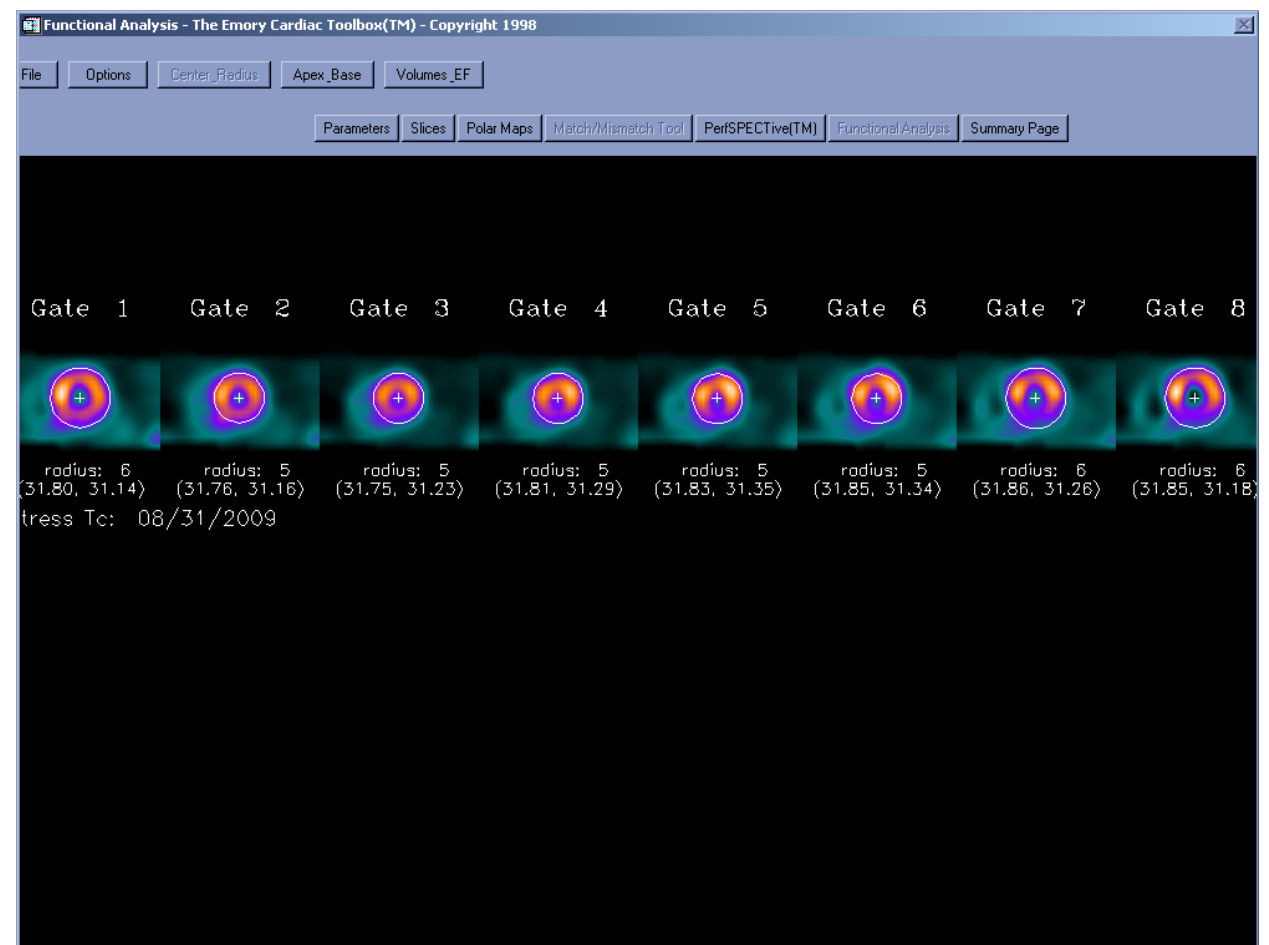
Correct ROI Placement for Polar Maps

1. Red circles depict ROI diameter. Stress and rest ROI diameters should always be equal.
2. The arrows represent the user defined base and apex slices. **The base slice should look like a backwards letter 'C.'** The apex should look like a **button NOT** a donut. The stress base and apex slices should look very similar to the rest's base and apex slices.



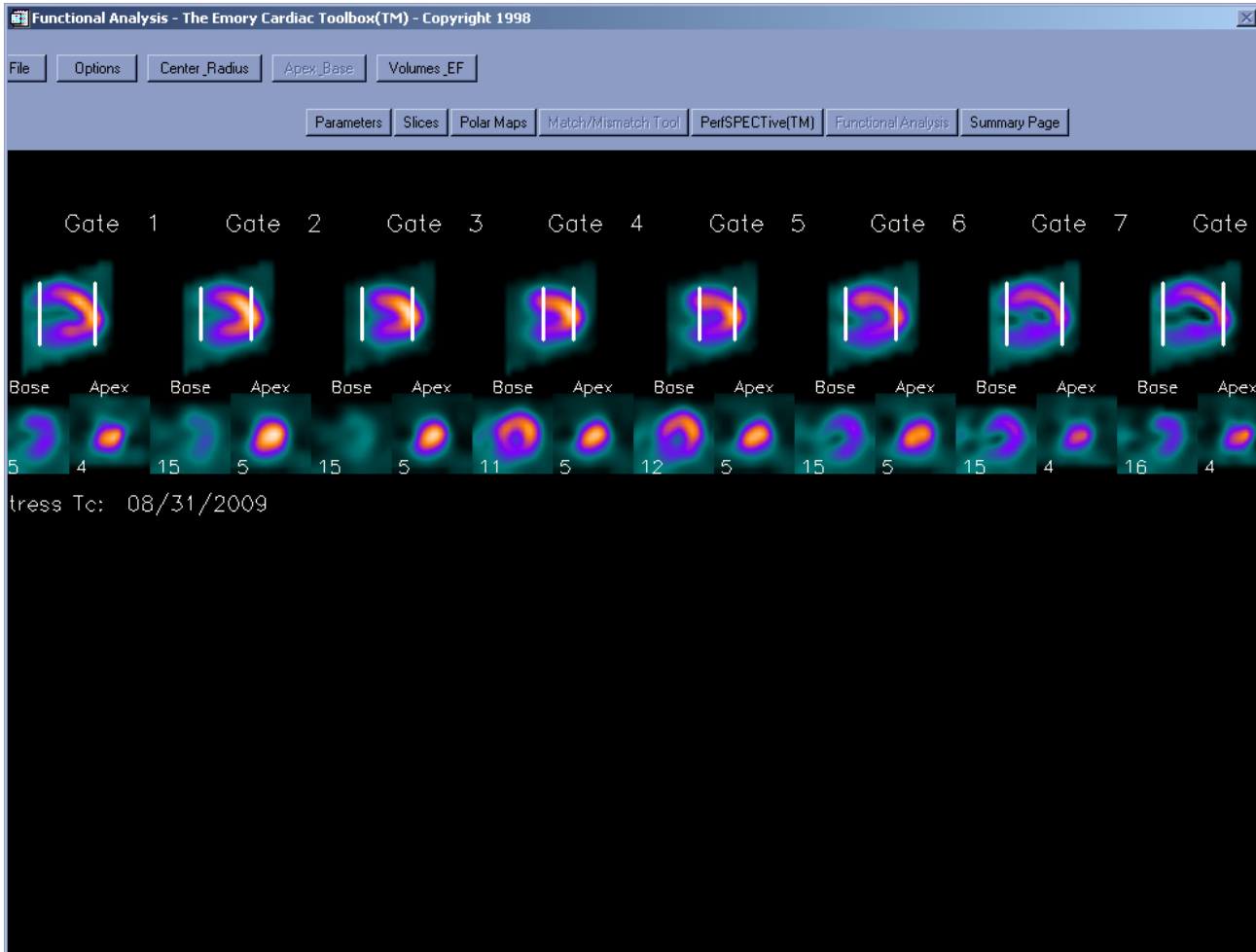
Incorrect ROI Placement for EF Calculation

1. Red arrows show non-centered ROI's

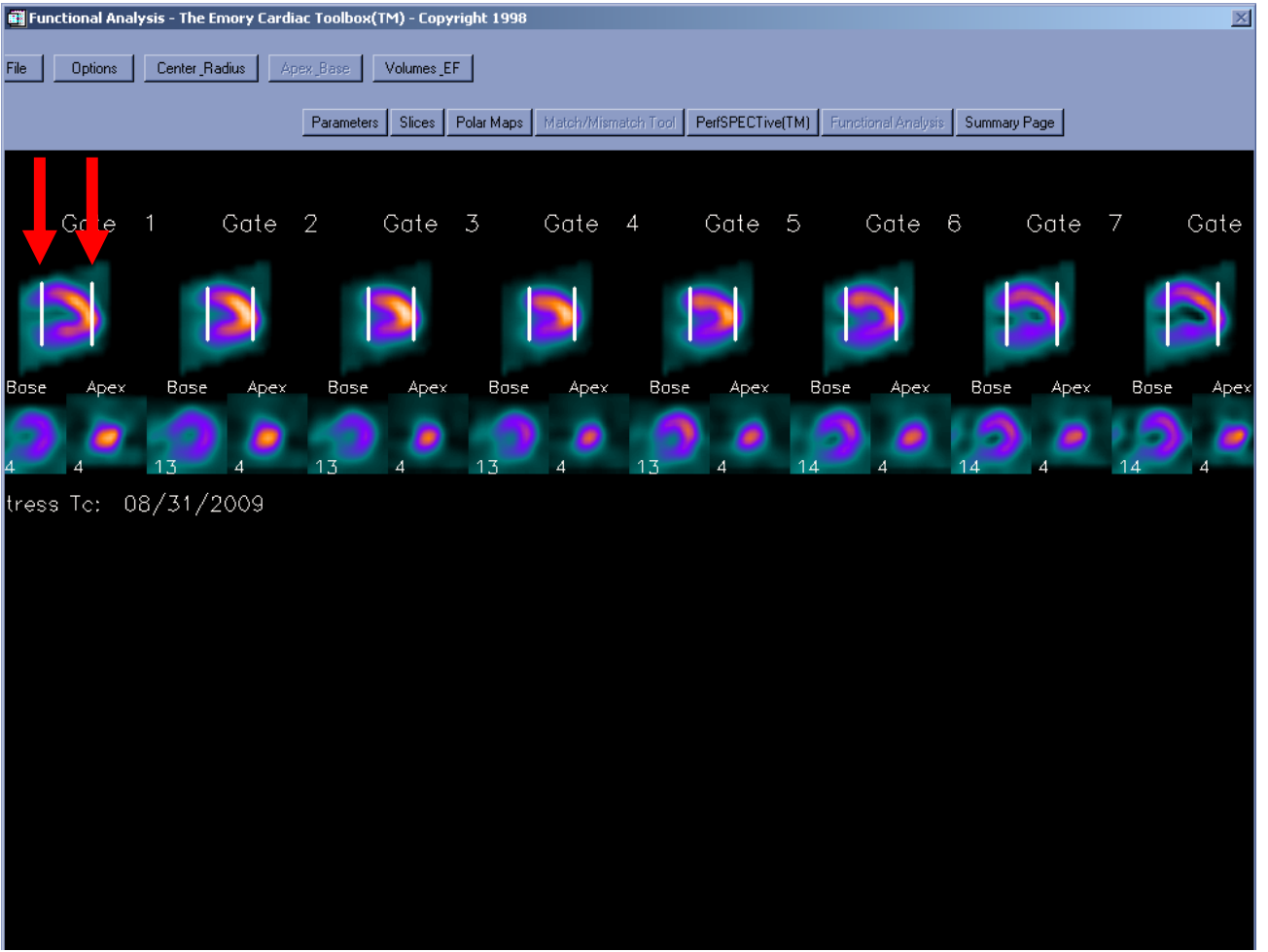


Correct ROI Placement for EF Calculation

1. All ROI's should be centered in each short axis slice.
2. A shortcut to centering all ROI's in one left-click is to hold the CTRL button and left-click the center of the first short axis slice. If done correctly it will center all ROI's in all 8 slices.

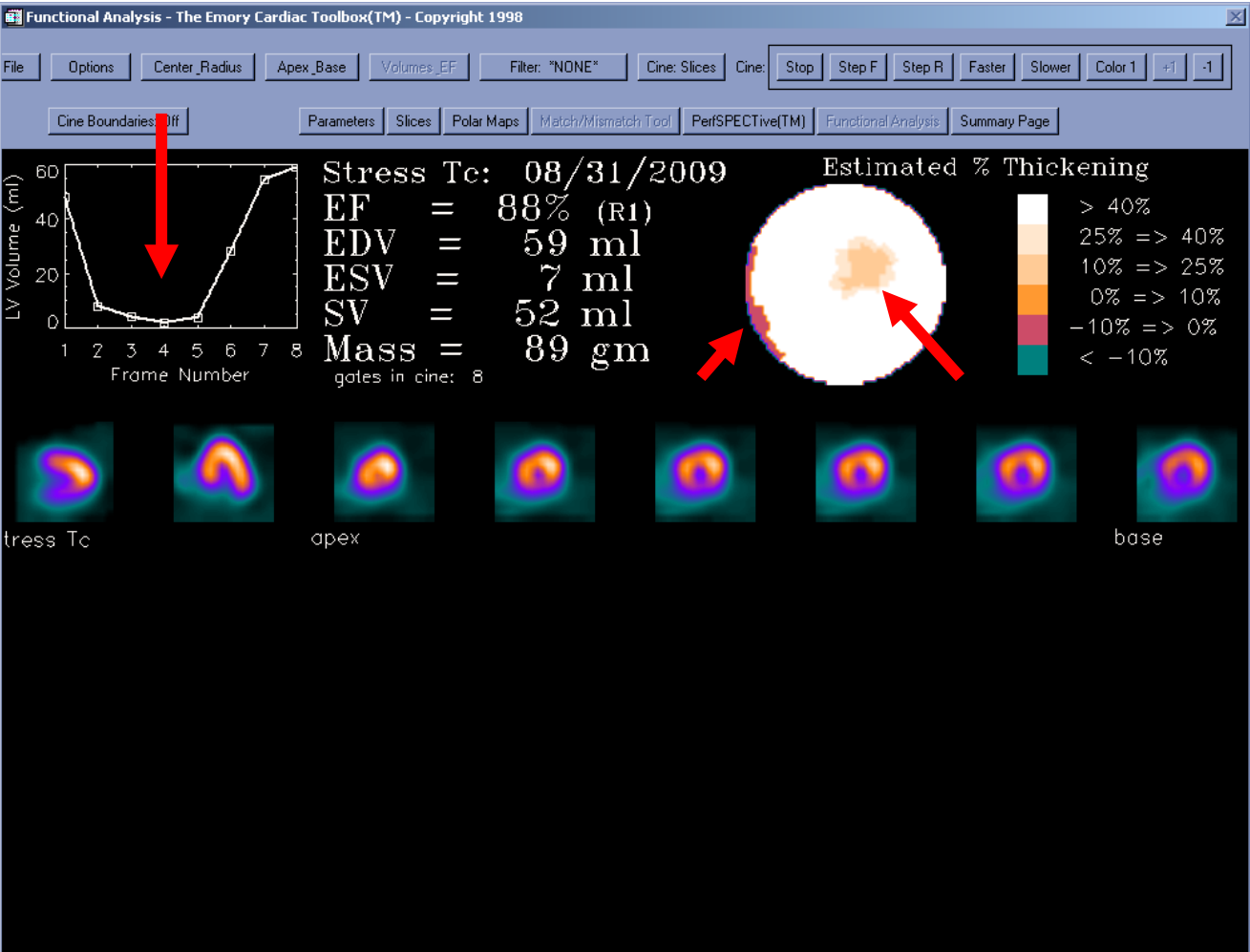


Incorrect Apex and Base Limits for EF Calculation



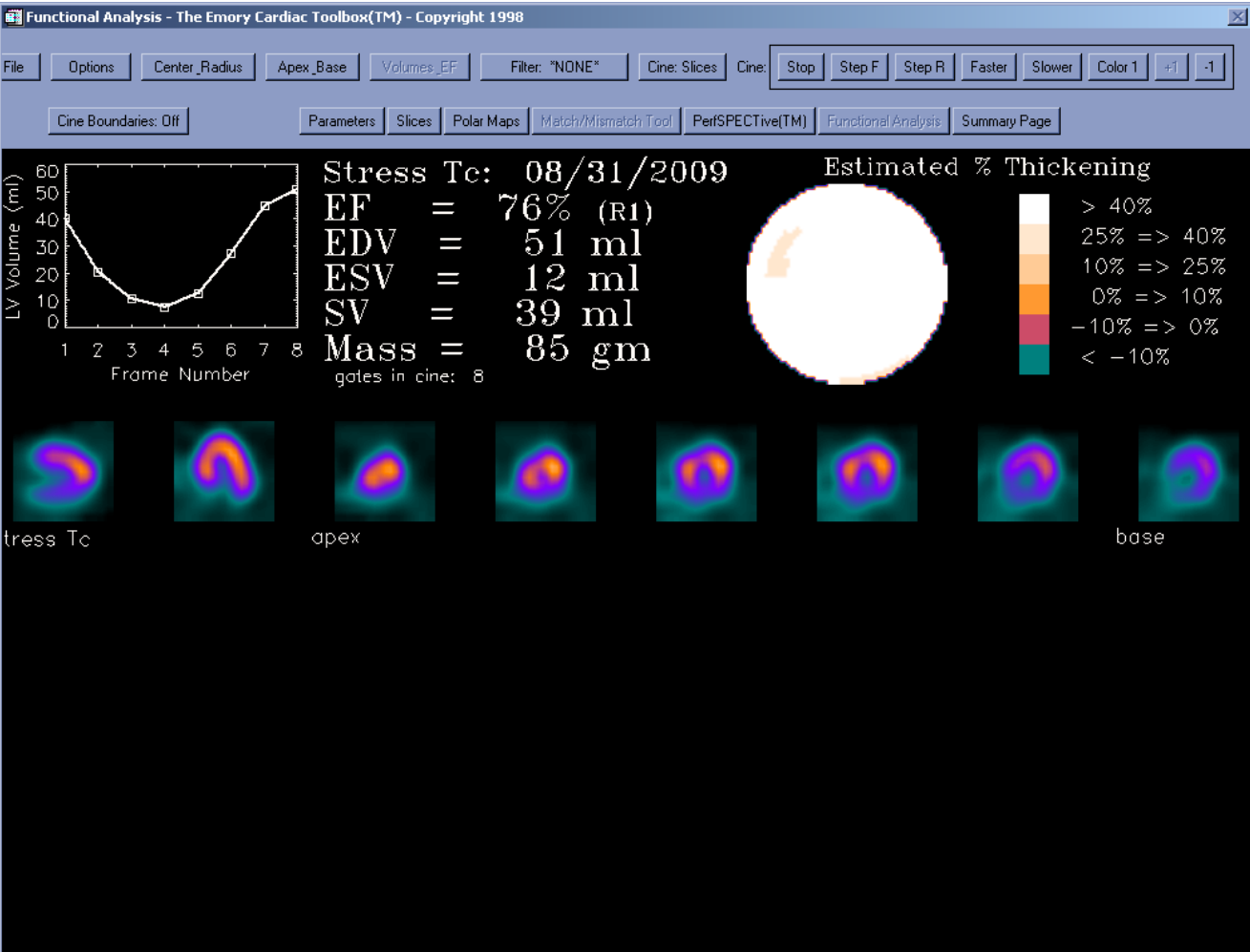
Correct Apex and Base Limits for EF Calculation

1. Just like with the Polar Maps, your base slice should look like a backwards 'C' and your apex should look like a button.
2. A short-cut is to hold CTRL and left-click on the base of the first short axis slice. It should then change all of the other 7 short axis slices to the very same slice. Do the same thing for the apex in the first short axis slice.
The base and apex slices should all look the same with minor variations.

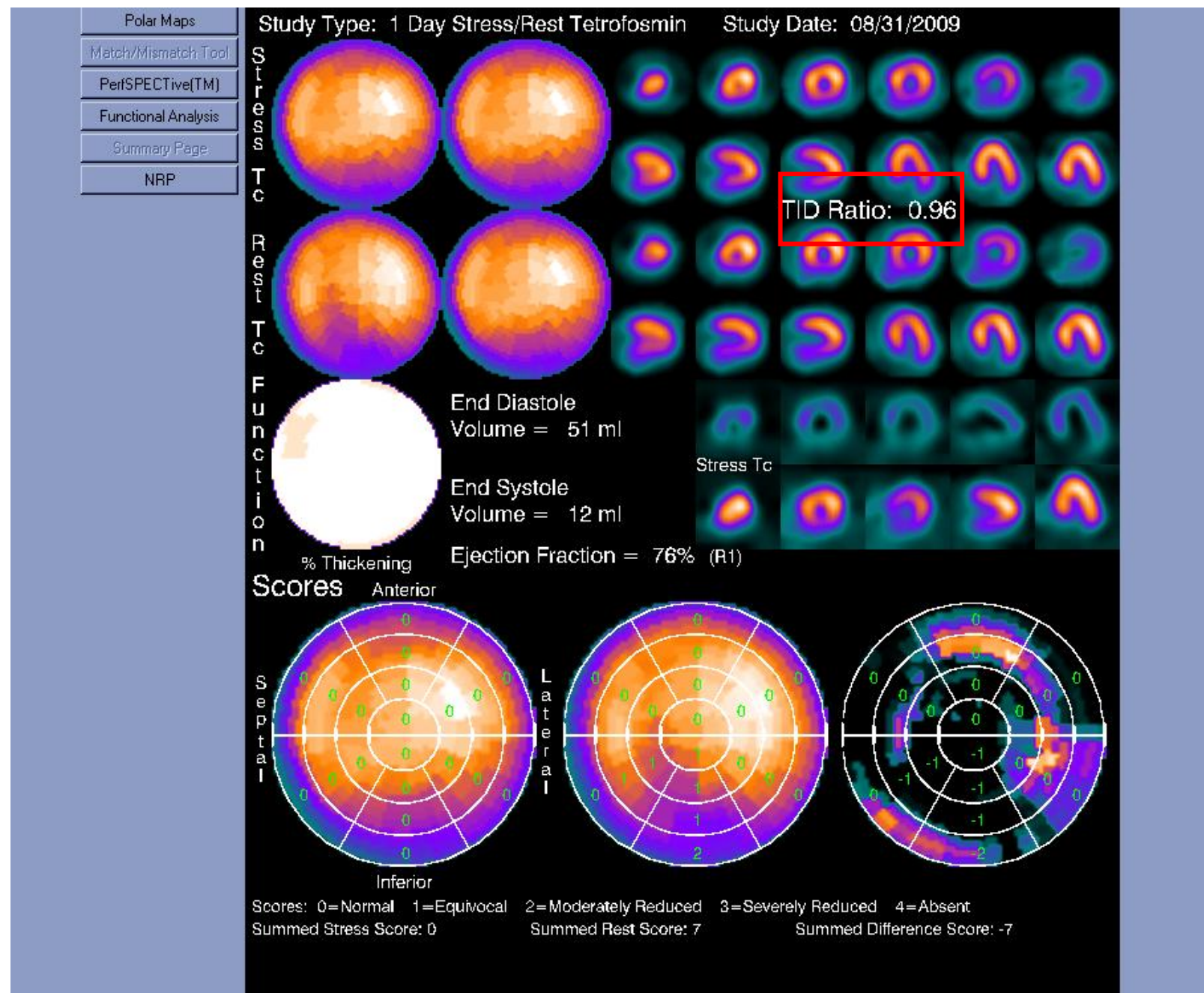


Incorrectly Processed EF

1. Due to incorrect processing techniques there are wall motion/wall thickening abnormalities.
2. Volume activity curve is jagged



Correctly Processed EF

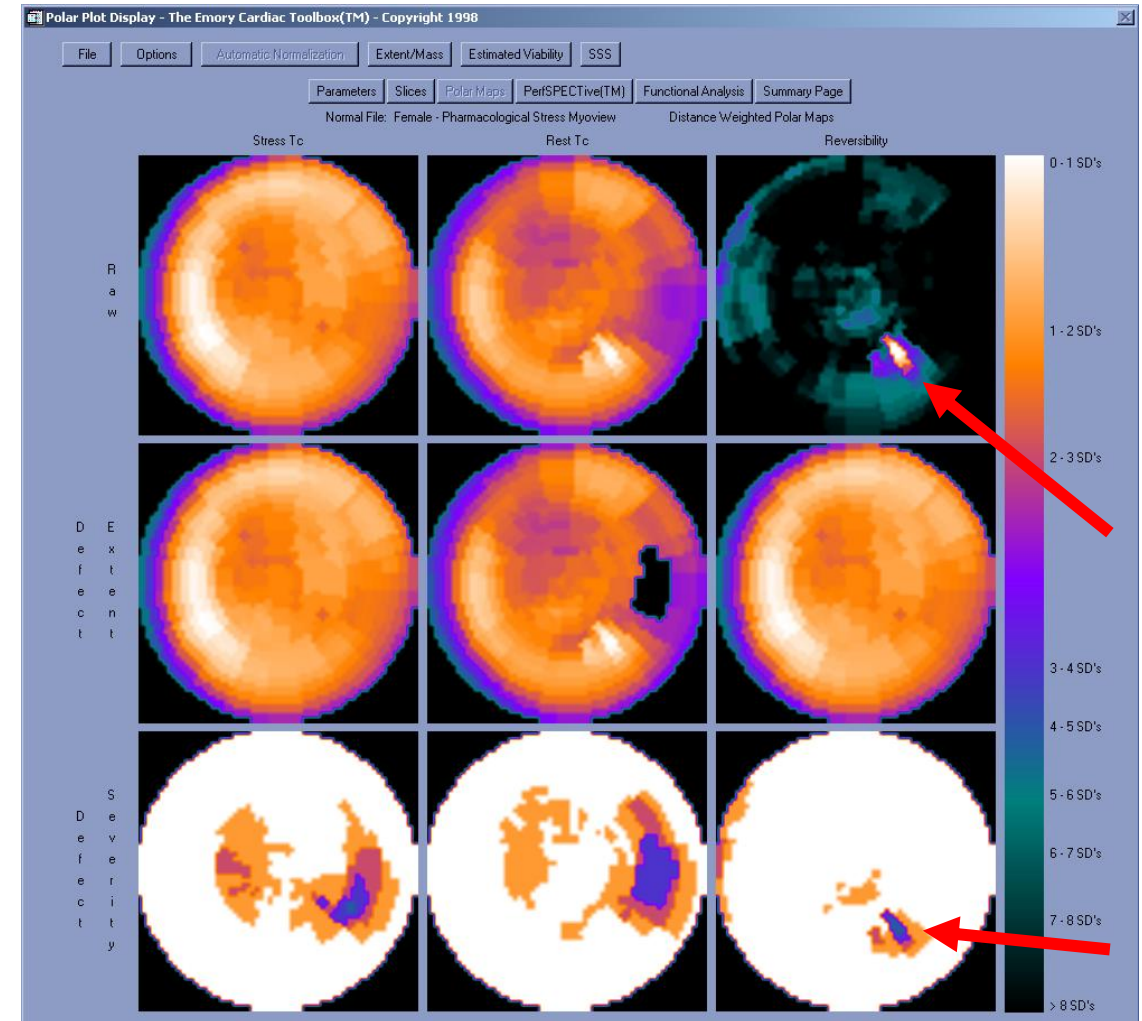
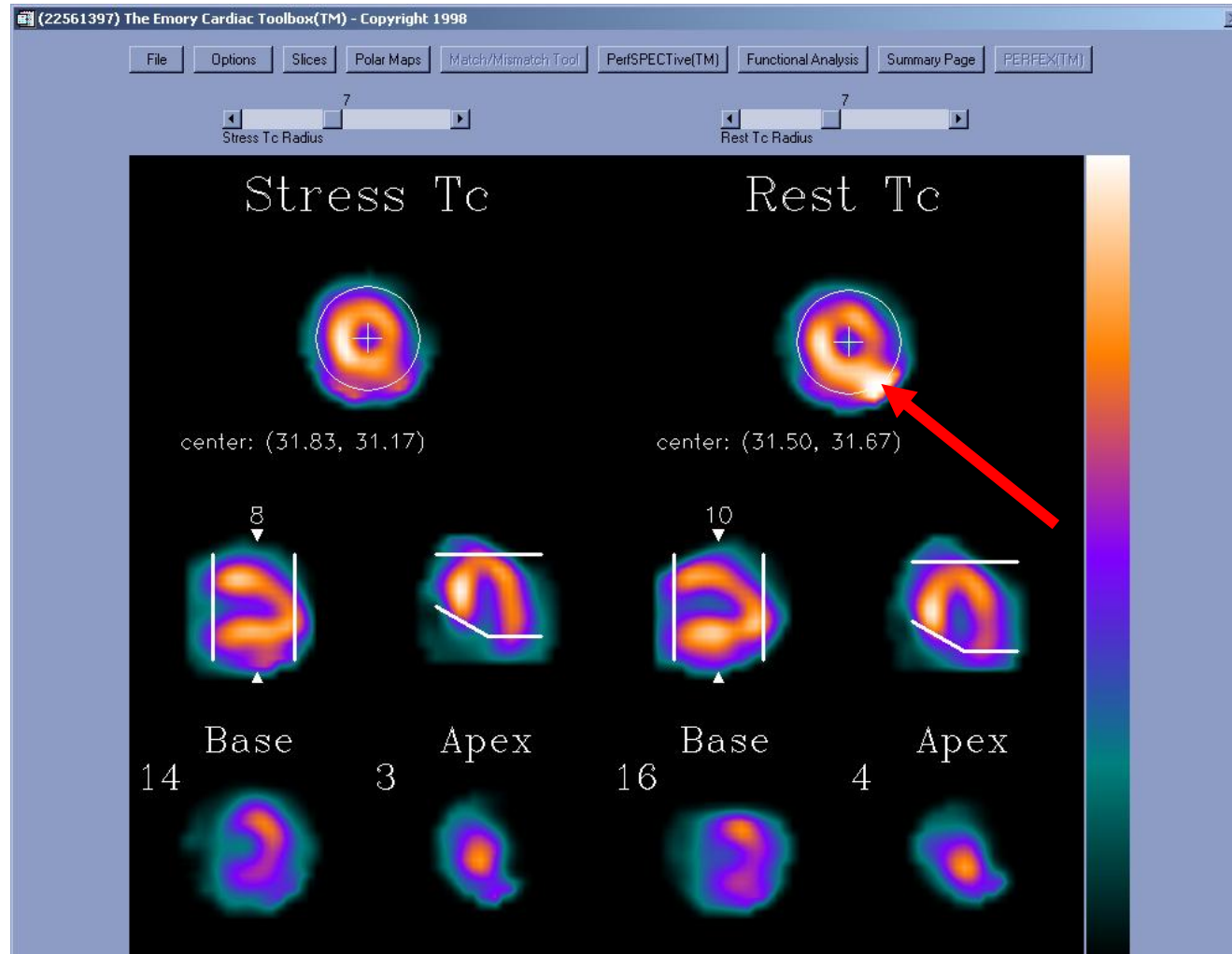


TID

1. An often overlooked value that is produced from processing; the TID ratio. Some physicians use this integer to help with the interpretation of the study. If a study is not processed correctly this value could easily be over or underestimated.

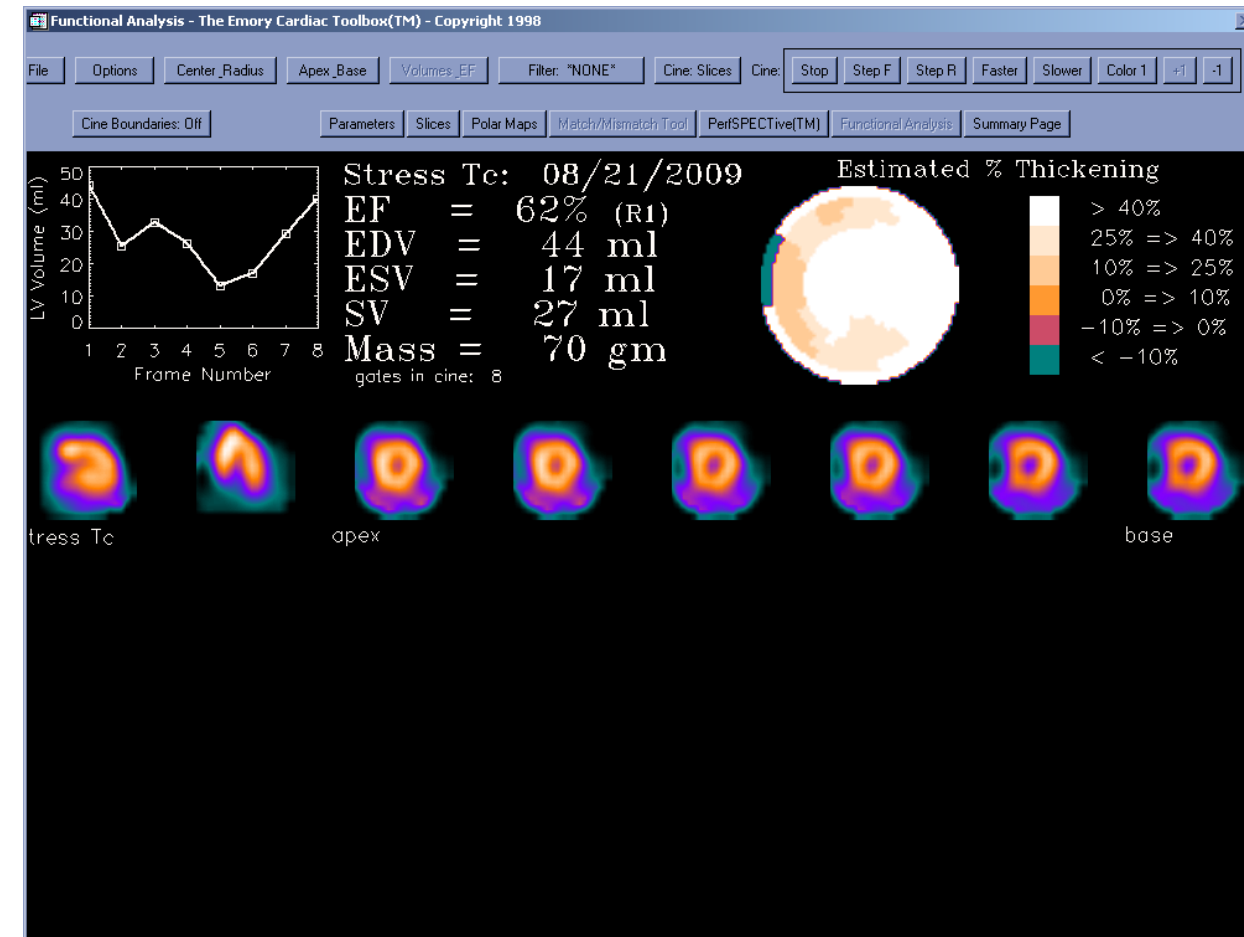
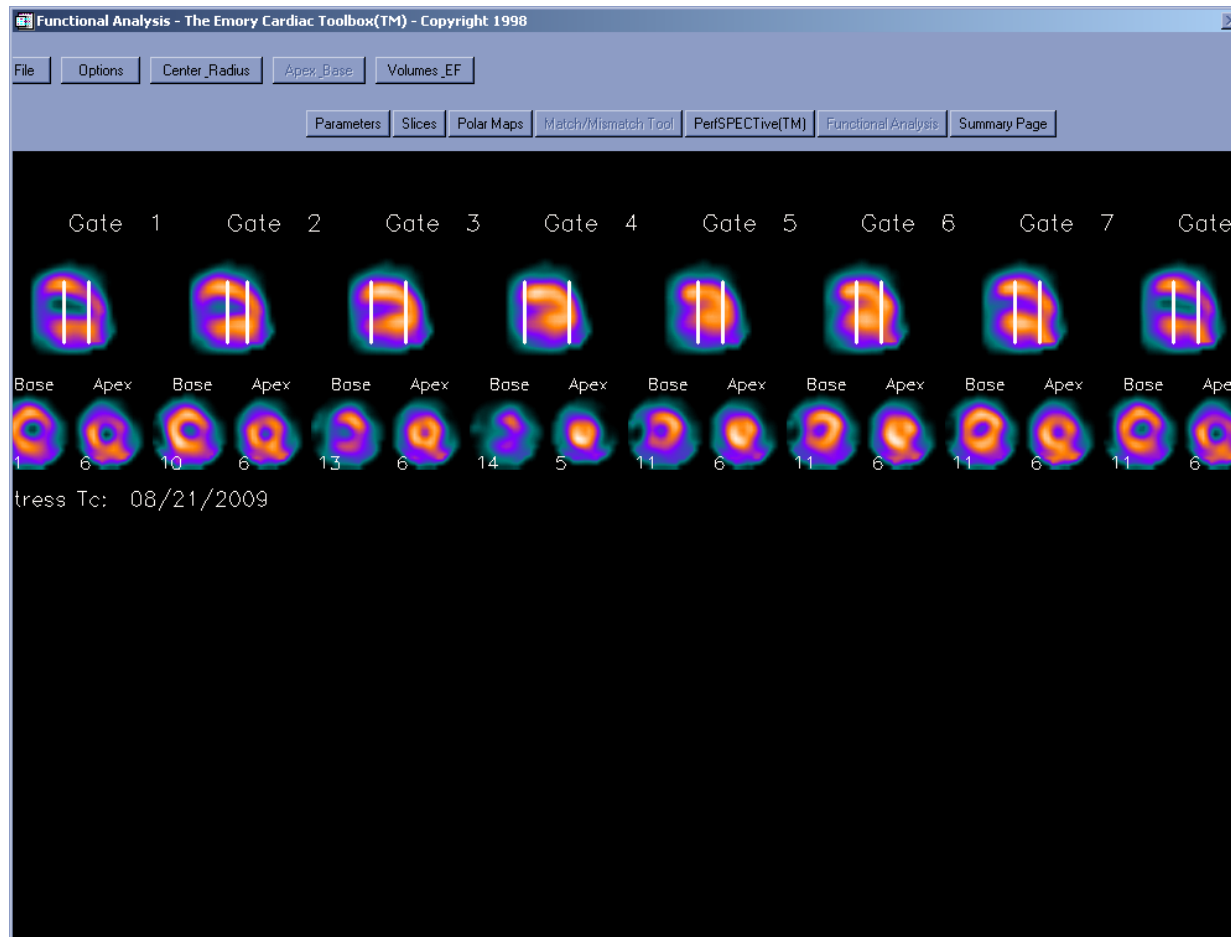
Examples of Incorrect Processing Techniques

Inclusion of Extra-Cardiac Activity in Polar Map Processing



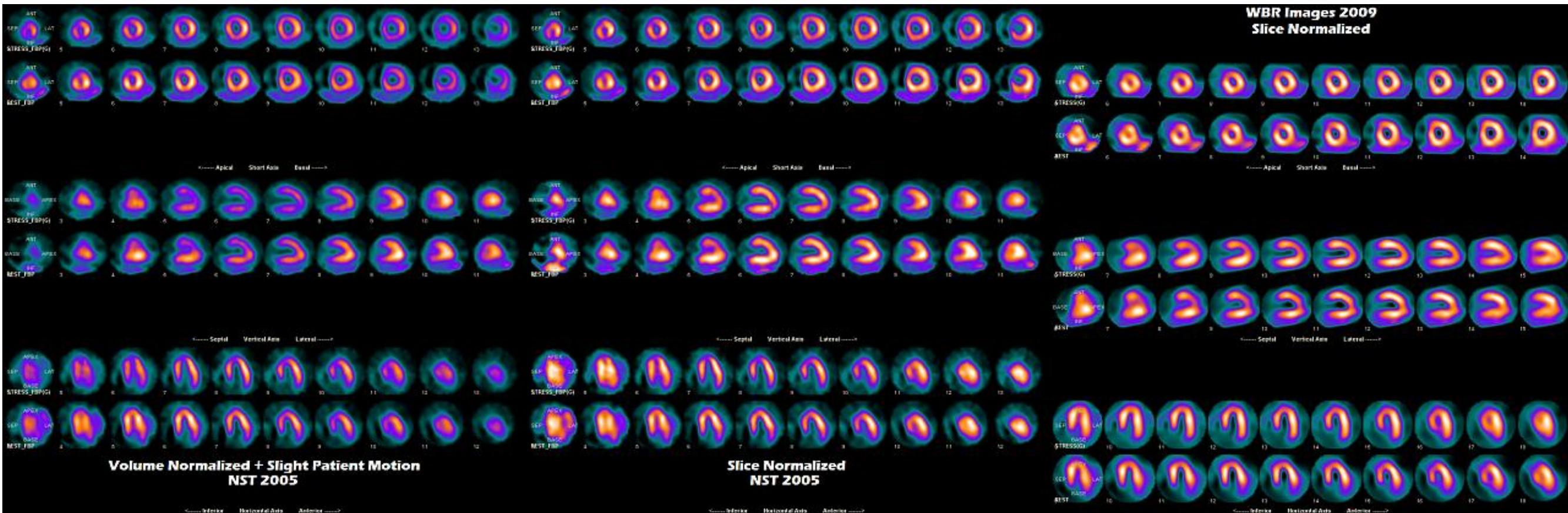
Polar map ROI's encompass extra-cardiac activity therefore showing a reversible defect in the inferolateral wall.

Inaccurate Ejection Fraction Produced by Computer Chosen Basal and Apical Limits



The result of a technologist allowing the computer to incorrectly calculate base and apex limits. Notice the jagged, inaccurate Volume-Activity curve and septal wall-motion/thickening abnormality.

False-Positive Study Due to Incorrect Normalization and Patient Motion



The original 2005 study was read as being positive with reversible defects in the anterior, anteroapical, and apical walls. In 2009 the original study was reprocessed with Slice Normalization, instead of Volume, and review of the original 2005 SPECT data showed patient motion on stress planars.