Chest (Aorta)MRA and or Abdomen

1) 3 plane loc
2) 3 plane loc breathold
3) Ax Overlapping fisp (multiple expiratory bh)(prospective gating).
4) Ax DB t1 haste (freebreath)(prospective gating)
5) Sag obl fisp cine (retrospective gating) 3 slices
6) sag obl FSE db T1 (prospective gating) 3 slices
7) Sag obl high spatial twist - *Ablavar single dose diluted 50/50, inject after phase 1 has been completed. – (this is the mask phase.)
8) Scout mode Sag obl 3d MDE (resp. and cardiac trigger)(prospective gating)
9) Sag obl 3d MDE (resp. and cardiac trigger)(prospective gating)
10) Cor obl LVOT (img. 1) (retrospective gating) 1 slice
11) HLA LVOT (img. 2) (retrospective gating) 1 slice
12) Aortic valve cine (retrospective gating) 5 slices

**Rt click (choose perpendicular before adjusting the slice, when prescribing double obliques(valve views, series 10,11, and 12
If asked for in comments-
Axial PC aorta - start with 150 venc, check ascending aorta for aliasing . If aliasing add 100 to venc and repeat.

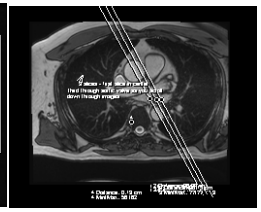
*Optional
16) NONCONTRAST – sag obl. 3D fisp (img. #3)
17) Cor stir (resp triggered) cover all soft tissue a/p

- Most important sequences are ax overlapping fisp, and sag obl cine.
- Most commonly used for dissection, stenosis, thrombus

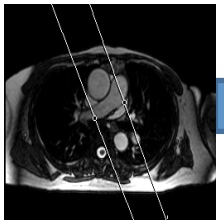
- If scanning chest and abdomen cover from arch to iliac bifurcation
- Use 2 station set n go for axial db, ax fisp, and sag cine
- Use 1 large FOV for mra sequences(if gradient warping artifact occurs on large FOV cine or mra - adjust FOV to get warping out of the arch and make it occur on bottom of FOV.

Axial coverage

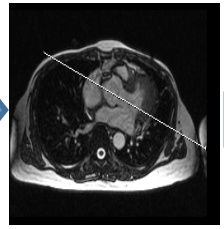
sag obl fisp coverage



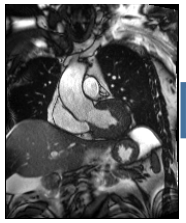
twist sag obl coverage



cor obl LVOT RX



img. 1



HLA LVOT RX

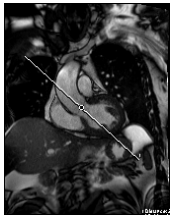
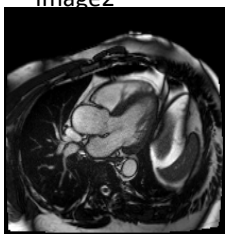
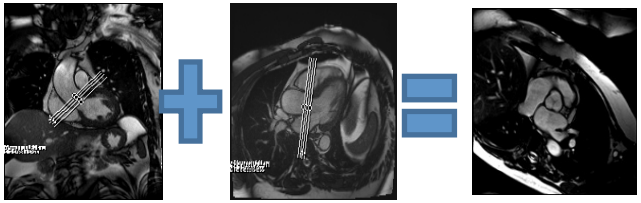
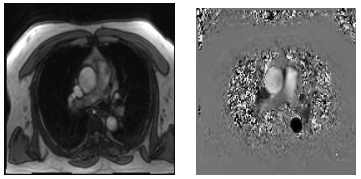


image2





axial pc

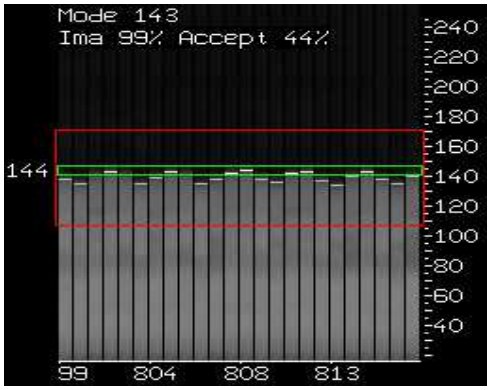


img. 3

3D MDE – This is respiratory gated and cardiac triggered.
After prescribing 3D MDE, make sure scout mode is selected under the pace tab- this will make the scanner run 5 respiratory cycles in order to see the best search position for your navigator. – at the end of the 5 cycles it will display the best position (example image 4). - MODE 143 rerun the sequence with scout mode OFF and insert this # as the search position under the pace tab. – instruct the patient to breathe consistently. Acceptance window of 30% or above is good.

Capture cardiac cycle and adjust if needed. – if data aquisition crosses into the next RR interval, shown by a red line below, Adjust the TR and or reduce the trigger delay. If not, the system will ignore the RED data and need to recollect it, making the scan time longer and effect image quality.

Img. 4



Good respiratory gating

Good cardiac gating

poor cardiac gating