PROTOCOL: MRA NECK WWO/CAROTID+VERTEBRAL MRA WWO

CLINICAL INDICATIONS/ HISTORY: trauma, stenosis, transient ischemic attack, carotid bruit, dissection

SCAN ORDER	PLANE	IMAGE CONTRAST/ WEIGHTING	MODE	PULSE SEQ	COVERAGE	TR RANGE	TE RANGE	TI	FLIP ANGLE	THICKNESS/GAP (mm)	FOV (cm)	Max Pixel (mm) x Ph	Fr Freq Axis	SEND TO PACS	Max scan time (target)
1	SAG	PC LOC	2D	PC	2 SLICES TO COVER CAROTIDS AND VERTEBRALS- VENC=60CM/S	MIN	MIN		20-30	50/0	30	1.5X1.5	SI	COLLAPSE	3:00
2	COR	PC LOC	2D	PC	1-2 SLICES TO COVER CAROTIDS AND VERTEBRALS VENC=60CM/S	MIN	MIN		20-30	60/0	30	1.5X1.5	SI	COLLAPSE	3:00
3	AX	TOF MRA	3D	TOF-MULTI	COVER FROM FORAMEN MAGNUM TO ARCH BELOW ORIGINS	MIN	6.9 IF FLOW COMP, MIN IF NO FC	SUPERIOR TRACKING SAT	20-30	1.0-1.5/0VLP (SLABS OF 26-30 SLICES WITH 10-12 DISCARDS/ OVERLAPS)	16-20	.9X.9	RL	FULL SERIES + BELOW	8:00
*ADD IF DISSECTION	AX	T1-FS	2D/ 3D	FSE OR VIBE/ LAVA	1-2 SLICES TO COVER CAROTIDS AND VERTEBRALS VENC=60CM/S	<790 IF FSE	MIN		>130 OR 15-25	<4/1	18	1.0X1.0	RL	FULL SERIES	5:00
4	COR	T1 CEMRA	3D	FLASH/ FSPGR	COVER BOTH CAROTIDS AND VERTEBRALS. FOV MUST INCLUDE ARCH AND C.O.W.	MIN	6.9 IF FLOW COMP, MIN IF NO FC		25	.9-1.5/0VLP: 90-120 SLICES	30-32	.9X.1.5	SI	FULL SERIES	<45s
5+C	COR	T1 CEMRA	3D	FLASH/ FSPGR	COVER BOTH CAROTIDS AND VERTEBRALS. FOV MUST INCLUDE ARCH AND C.O.W.	MIN	6.9 IF FLOW COMP, MIN IF NO FC		25	.9-1.5/0VLP: 90-120 SLICES	30-32	.9X.1.5	SI	FULL NON-SUBTRACTED SEIRES AND SUBTRACTION OF BEST PHASE	<45s/ PHASE 2 PHASES

POST PROCESSING: IF NOT AUTOGENERATED (SIEMENS) 2 PLANES OF FULL-VOLUME PROJECTED MIP: AP, LATERAL; ROTATED/SPIN MIPS OF LEFT AND RIGHT CAROTID+VERTEBRAL SEPARATED FROM EACH OTHER; CORONAL AND SAGITTAL THICK (SLIDING SLAB) MIPS THRU BOTH CAROTIDS AND VERTEBRALS. SEE BELOW FOR DETAILS ON CEMRA POST PROCESSING.

	AP	VOLUME MIP	3D												
	LAT	VOLUME MIP	3D												
USE SERIES 3 AS SOURCE DATA FOR THESE MIPs	LEFT SPIN	SUB-VOLUME MIP	3D		COVER 180 DEGREES MINIMUM					5-10 DEGREE SEPARATION					
	RIGHT SPIN	SUB-VOLUME MIP	3D		COVER 180 DEGREES MINIMUM					5-10 DEGREE SEPARATION					
	COR	THICK MIP	2D							7-10/OVLP 5-8					
	SAG	THICK MIP	2D							7-10/OVLP 5-8					
USE SERIES 5 AS SOURCE DATA FOR THESE MPRs &MIPs	AX	MPR	2D		COVER ENTIRE VOLUME S-I					1X1				GENERATE FROM NON-SUBTRACTED SOURCE SERIES	
	AX	MPR	2D		COVER ENTIRE VOLUME S-I					1X1				GENERATE FROM SUBTRACTED SERIES	
	SPIN	VOLUME MIP	3D		COVER 180 DEGREES MINIMUM					5 DEGREE SEPARATION				GENERATE FROM SUBTRACTED SERIES	
	COR	THICK MIP	2D							7-10/OVLP 5-8				GENERATE FROM NON-SUBTRACTED SOURCE SERIES	
	SAG	THICK MIP	2D							7-10/OVLP 5-8				GENERATE FROM NON-SUBTRACTED SOURCE SERIES	