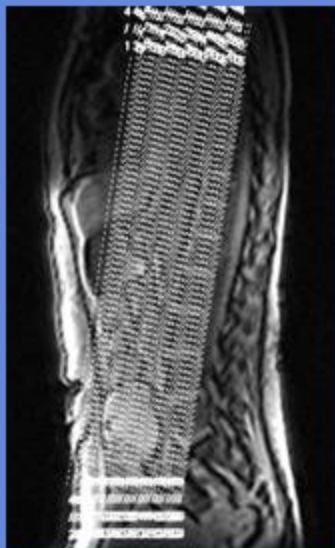
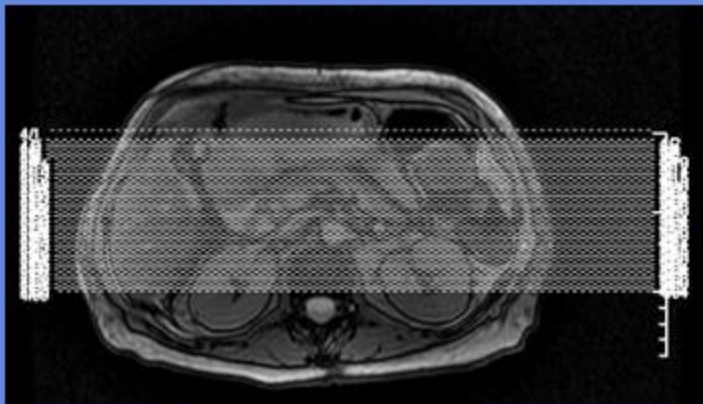


ABDOMINAL ceMRA IMAGE

CLINICAL INDICATIONS:	Aneurysm, Hypertension						
parameter	SERIES 1	SERIES 2	SERIES 3	SERIES 4	SERIES 5	SERIES 6	SERIES 7
description	3-PLN LOC	ceMRA	T1 AX FS C+				
entry	supine	supine	supine				
position	Feet First	Feet First	Feet First				
coil	Torso	Torso	TORSO				
plane	3-PLN	CORONAL	AXIAL				
pulse seq.	FGRE	3D Vasc TOF SPGR	fSPGR				
im options		z512,z2,fluro	EDR				
PSD Name							
Te		Min	out-of-phase				
TR			150				
TI							
flip angle		35	90				
ETL							
RBW		62	31				
SATS			FAT,S,I				
FOV	25	42	44				
slice thick	5	3	6				
spacing	5		1				
F Phase	256	256	384				
P Phase	128	160	192				
NEX	1	1	1				
Phase FOV	1	0.9	0.8				
FREQ DIR		S/I	R/L				
COVERAGE	Abdominal aorta	Abdominal aorta	ABDOMEN				
contrast		1mmol/kg	1mmol/kg				
comments:							

ABDOMINAL ceMRA

CORONAL



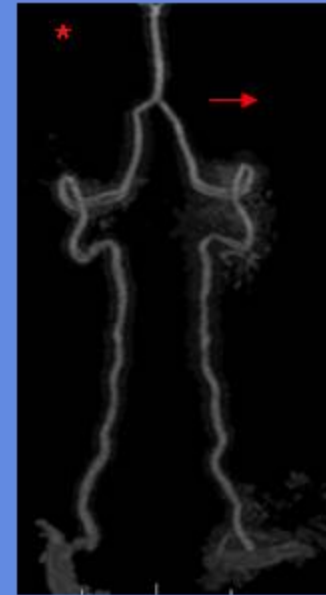
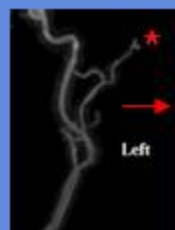
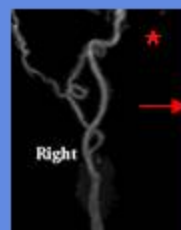
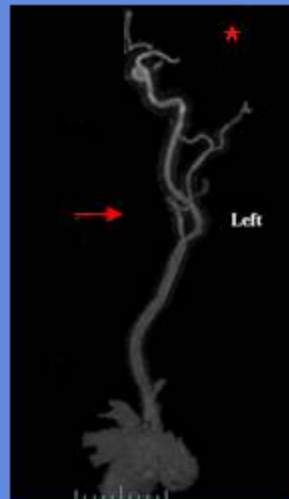
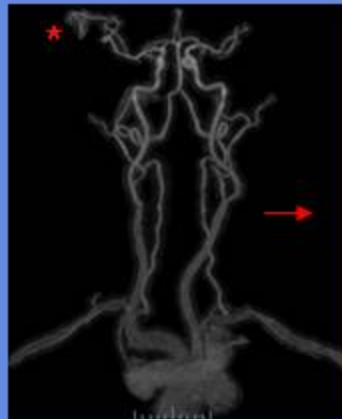
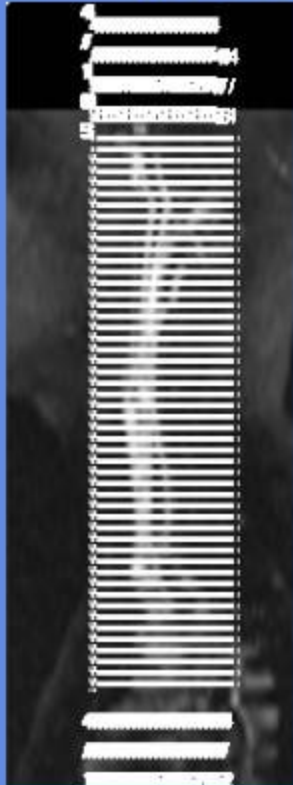
* Rotate 23 slices for each Group

CAROTID ANGIO IMAGE

CLINICAL INDICATIONS:		Aneurysm, TIA's, CVA, H/A's					
parameter	SERIES 1	SERIES 2	SERIES 3	SERIES 4	SERIES 5	SERIES 6	SERIES 7
description	3-PLN LOC	Pre AX	ceMRA				
entry	supine	supine	supine				
position	head first	head first	head first				
coil	NV	NV	NV				
plane	3-PLN	AXIAL	CORONAL				
pulse seq.	FGRE	3D Vasc TOF SPGR	3D Vasc TOF SPGR				
im options		FC,VB,Z2	EDR,Z2,Z512,FTr				
PSD Name							
Te			6.9 Min				
TR			30				
TI							
flip angle			20	35			
ETL							
RBW			15	62			
SATS							
FOV	25	20	28				
slice thick	5	2.4	1.4				
spacing	5	0	0				
F Phase	256	256	256				
P Phase	128	128	192				
NEX	1	1	1				
Phase FOV	1	0.81	0.9				
FREQ DIR		R/L	S/I				
COVERAGE	NECK	CAROTIDS	CAROTIDS				
contrast			1mmol/kg				
comments:							

CAROTID ANGIO

Coronal ceMRA



- * Label right and left
On carotid MIPs.
Also rotate →
23 slices for each
Group, should have 6
Groups.

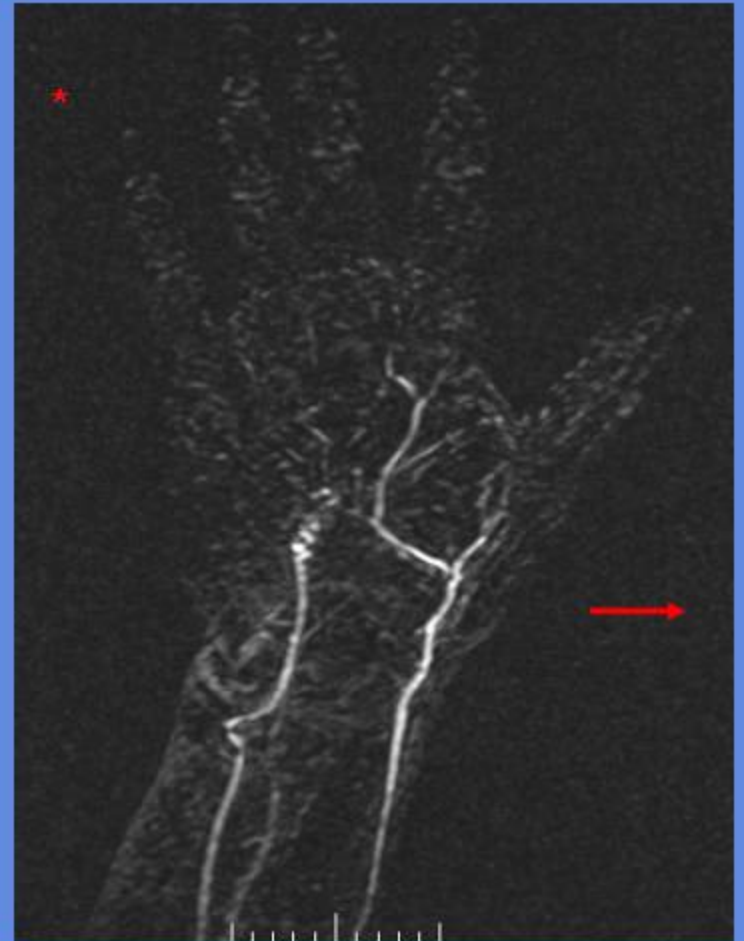
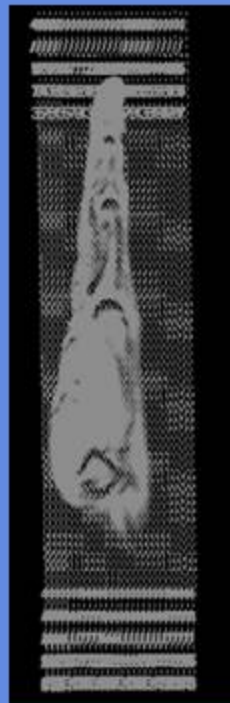
HAND ceMRA

IMAGE

CLINICAL INDICATIONS:		Aneurysm, Numbness					
parameter	SERIES 1	SERIES 2	SERIES 3	SERIES 4	SERIES 5	SERIES 6	SERIES 7
description	3-PLN LOC	ceMRA					
entry	supine	supine					
position	head first	head first					
coil	HEAD	HEAD					
plane	3-PLN	CORONAL					
pulse seq.	FGRE	3D Vasc TOF SPGR					
im options		EDR,Z2,Z512,FTr					
PSD Name							
Te		Min					
TR							
TI							
flip angle			35				
ETL							
RBW			62				
SATS							
FOV	25	32					
slice thick	5	2					
spacing	5	0					
F Phase	256	256					
P Phase	128	160					
NEX	1	1					
Phase FOV	1	1					
FREQ DIR		S/I					
COVERAGE	HAND	HAND					
contrast		1mmol/kg					
comments:							

HAND ceMRA

CORONAL

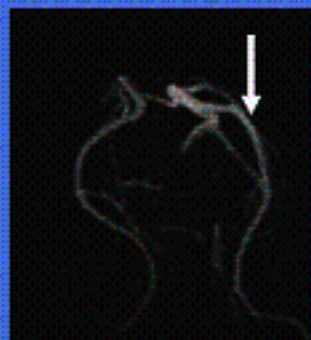
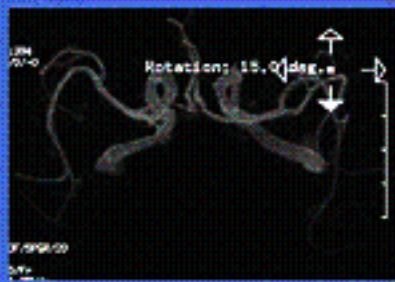
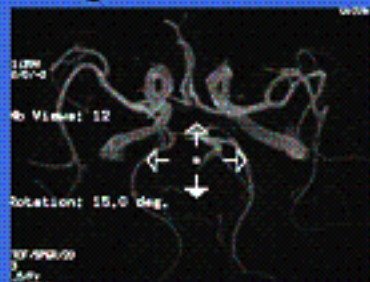
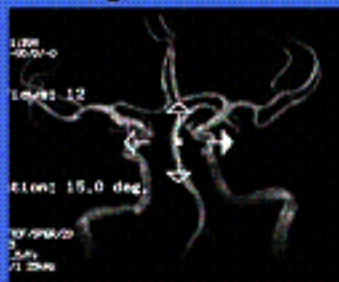
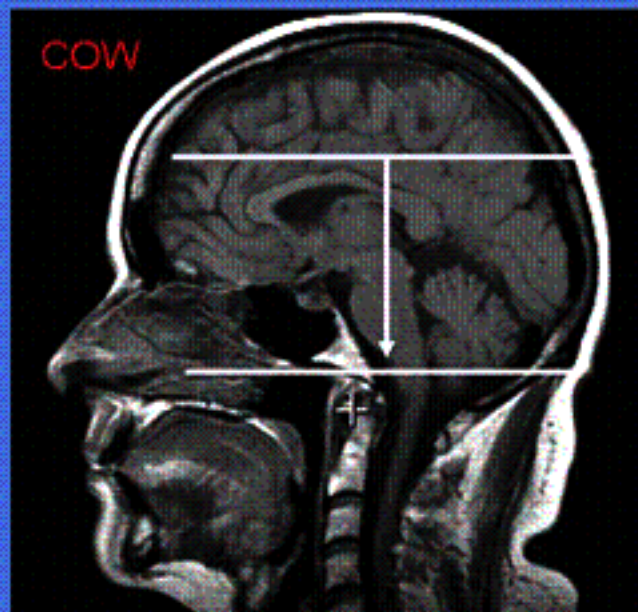


* Rotate 23 slices for each Group

MRA (COW) IMAGE

CLINICAL INDICATIONS:		Aneurysm, TIA's, CVA, H/A's					
parameter	SERIES 1	SERIES 2	SERIES 3	SERIES 4	SERIES 5	SERIES 6	SERIES 7
description	3-PLN LOC	COW MRA					
entry	supine	supine					
position	head first	head first					
coil	HEAD	HEAD					
plane	3-PLN	AXIAL					
pulse seq.	FGRE	3D Vasc TOF SPGR					
im options		FC,VB,Z2,Z512					
PSD name							
Te		Min					
TR			23				
TI							
flip angle			20				
ETL							
RBW							
SATS		S					
FOV	25	18					
slice thick	5	1.4					
spacing	5						
F Phase	256	224					
P Phase	128	192					
NEX	1	1					
Phase FOV	1	1					
FREQ DIR		A/P					
COVERAGE	BRAIN	COW					
contrast							
comments:	If no previous MRI do T1 and T2 Axials						

MRA (COW)



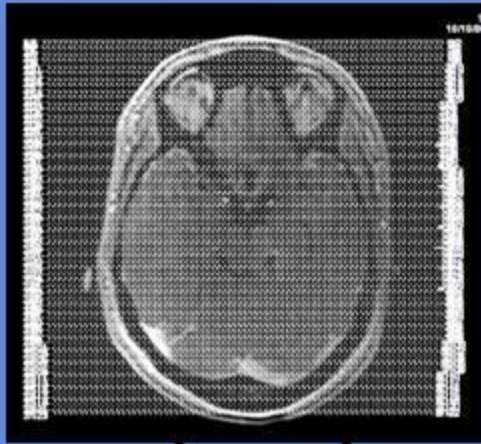
MRV

CLINICAL INDICATIONS: Sagittal Sinus Thrombosis

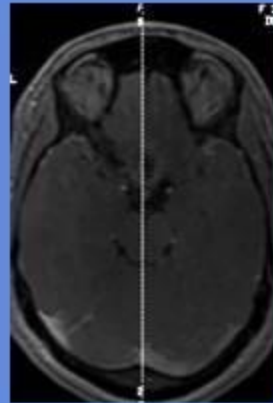
parameter	SERIES 1	SERIES 2	SERIES 3	SERIES 4	SERIES 5	SERIES 6	SERIES 7
description	3-PLN LOC	MRV	MRV	MRV			
entry	supine	supine	supine	supine			
position	head first	head first	head first	head first			
coil	HEAD	HEAD	HEAD	HEAD			
plane	3-PLN	OBL. SAG	CORONAL	AXIAL			
pulse seq.	FGRE	2D Vasc PC	2D Vasc TOF SPGR	3D Vasc PC			
im options		FC, Seq	FC, Seq,VB	FC			
PSD name							
Te			Min				
TR		33	Min	25			
TI							
flip angle		20	50	20			
ETL							
RBW		15	15	15			
SATS			1				
FOV	25	24	22	22			
slice thick	5	50	1.5	1.5			
spacing	5	0	0	0			
		venc. 20 cm/sec		venc. 60 cm/sec			
F Phase	256	256	256	256			
P Phase	128	256	128	128			
NEX	1	4	1	1			
Phase FOV	1	1	0.75	0.75			
FREQ DIR		S/I	S/I	A/P			
COVERAGE	BRAIN	Sag Sinus	ENTIRE SKULL	TENTORIUM			
contrast							
comments:	If no previous MRI do T1 and T2 Axials						

MRV

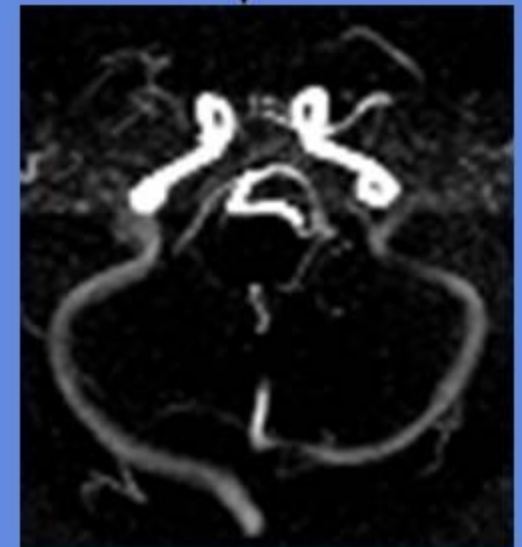
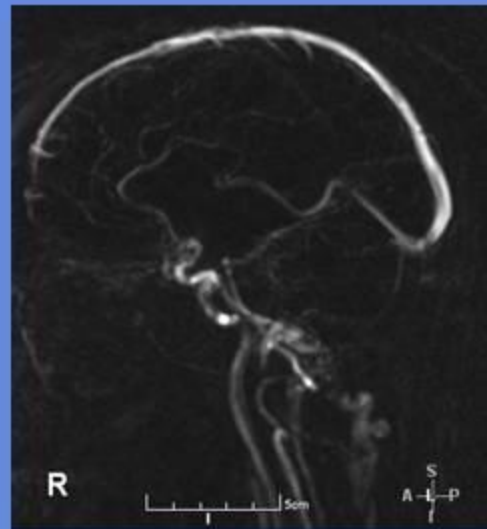
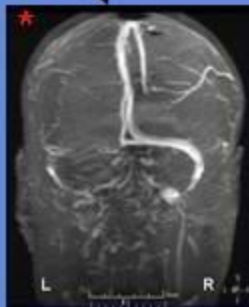
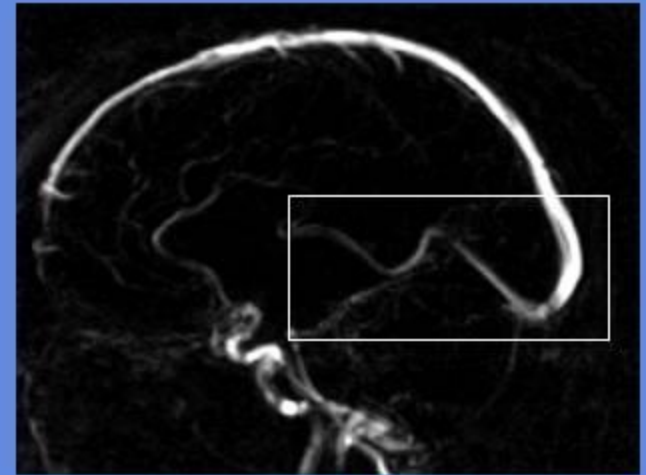
Coronal TOF



2D PC SAG



3D PC AX



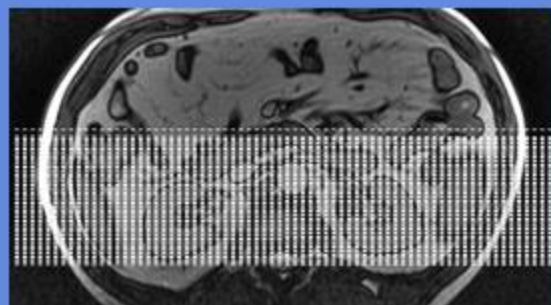
* Twist 23 slices for each Group

RENAL ceMRA IMAGE

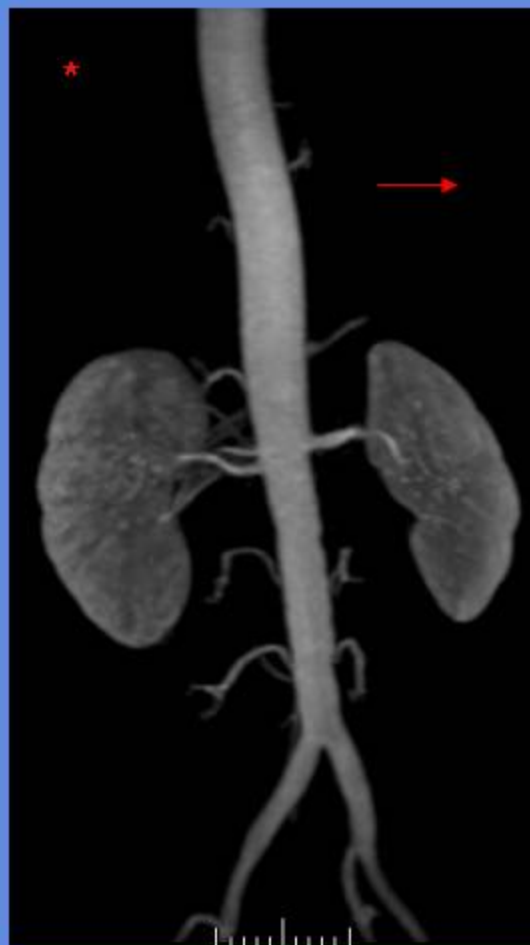
CLINICAL INDICATIONS:		Aneurysm, Hypertension					
parameter	SERIES 1	SERIES 2	SERIES 3	SERIES 4	SERIES 5	SERIES 6	SERIES 7
description	3-PLN LOC	ceMRA	T1 AX FS C+				
entry	supine	supine	supine				
position	Feet First	Feet First	Feet First				
coil	Torso	Torso	TORSO				
plane	3-PLN	CORONAL	AXIAL				
pulse seq.	FGRE	3D Vasc TOF SPGR	fSPGR				
im options		EDR,Z2,Z512,FTr	EDR				
PSD Name							
Te		Min	out-of-phase				
TR			150				
TI							
flip angle		35	90				
ETL							
RBW		62	31				
SATS			FAT,S,I				
FOV	25	28	44				
slice thick	5	1.4	6				
spacing	5	0	1				
F Phase	256	256	384				
P Phase	128	192	192				
NEX	1	1	1				
Phase FOV	1	0.9	0.8				
FREQ DIR		S/I	R/L				
COVERAGE	Abdominal aorta	Renal artery	ABDOMEN				
contrast		1mmol/kg	1mmol/kg				
comments:							

RENAL ceMRA

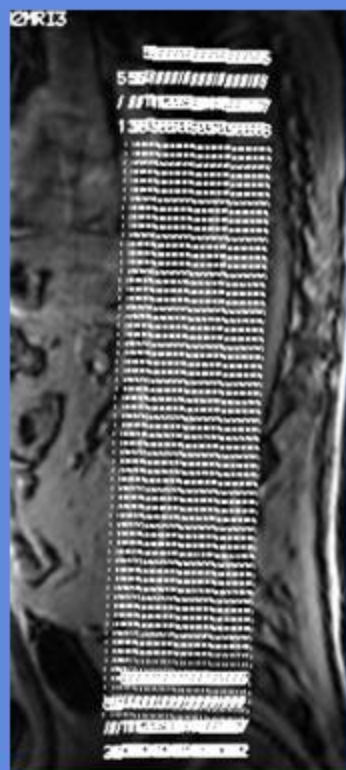
Coronal ceMRA



ceMRA



Axial Post



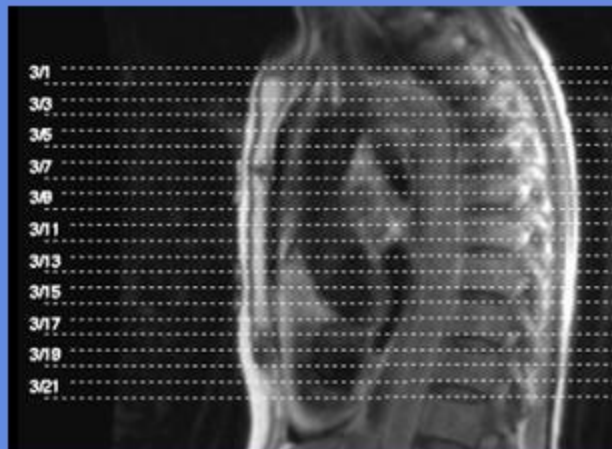
* Rotate 23 slices for each Group →

THORACIC ceMRA

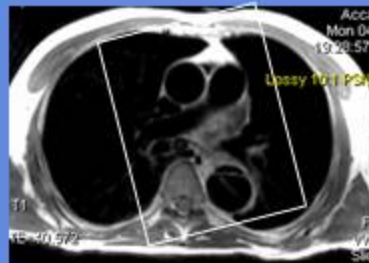
CLINICAL INDICATIONS:		Aneurysm, TOS, Aortic dissection					
parameter	SERIES 1	SERIES 2	SERIES 3	SERIES 4	SERIES 5	SERIES 6	SERIES 7
description	3-PLN LOC	AX BLACK BLOOD	sag BLACK BLOOD	ceMRA	TOF AX C+		
entry	supine	supine	supine	supine	supine		
position	Feet First	Feet First	Feet First	Feet First	Feet First		
coil	Torso	Torso	Torso	Torso	Torso		
plane	3-PLN	AXIAL	OBL SAG	Sagittal	AXIAL		
pulse seq.	FGRE	DOUBLE IR	DOUBLE IR	3D Vasc TOF SPGR	GRE		
im options		Gat	Gat	z512,z2,fluro	fc,rc,seq,np,z512		
PSD Name							
Te		42	42	Min	9		
TR					18		
TI		auto	auto				
flip angle		20	20	30	60		
ETL							
RBW		62	62	62	15		
SATS							
FOV	25	40	40	38	32		
slice thick	5	8	8	3	10		
spacing	5	0	0		2		
F Phase	256	256	256	256	256		
P Phase	128	256	256	192	256		
NEX	1	1	1	1	4		
Phase FOV	1	0.75	0.75	1	1		
FREQ DIR		R/L	R/L	S/I	R/I		
COVERAGE	Thoracic aorta	Ascending aorta	Aortic arch	Thoracic aorta	Thoracic aorta		
contrast				1mmol/kg	1mmol/kg		
comments:							

THORACIC ceMRA

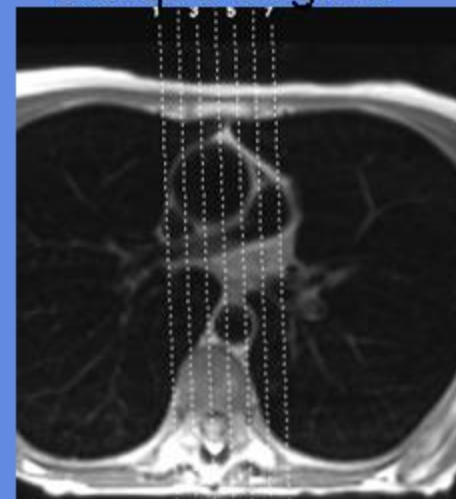
Axial



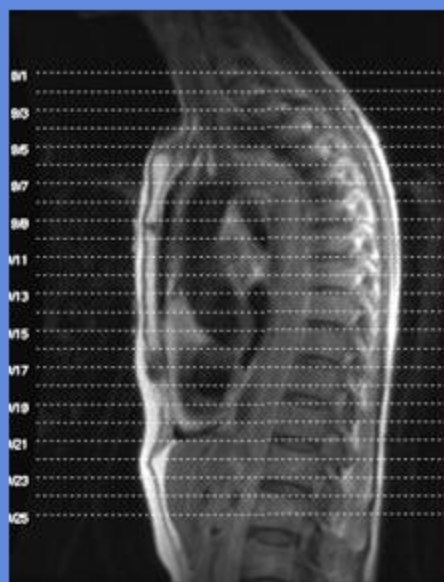
ceMRA



Oblique Sagittal



Axial Post



* Rotate 23 slices for each Group