NW
IMAGING FORUMS, INC.

PEDIATRIC BRAIN TUMOR - SURGICAL PLANNING (SMALLER PATIENTS) 3T

INSTRUCTIONS AND PATIENT PREPARATION

Instructions	Position the head in the head coil and immobilize with cushions Give cushions under the legs for extra comfort Connect the anterior portion of the head coil and secure it in place. Sedation vs bundle and feed is the ordering provider's decision
Common Indications	Brain tumor Cerebellar lesion
Position	Head First Supine
Coil	Head Coil 20ch
Landmark	Center over the glabella
Patient Population	These protocols are intended for smaller patients and serve as starting points. If a smaller FOV is needed, the parameters are modified accordingly.
AX DTI	We would perform the DTI only if it's requested
Contrast Timing	Post Ax T2 (Run post to allow time for tumor to absorb contrast)

CONTRAST AGENT PARAMETERS

Contrast Agent	Dose	Injection Rate	Dose Timing Method and Scan Delay
Gadopiclenol (VUEWAY)	0.1 mL/kg	Hand injected	Post-contrast series acquired after gadolinium administration

IMAGING PARAMETERS

Scan Description	AAhead_scout	SAG MPRAGE 3D	SAG T2 3D SPACE STEALTH	AX T2 FLAIR DRB	AX SWI	AX DWI	AX DTI	POST AX T2WI (3mm) DRB	AX T1WI FLAIR DRB	COR HR T2WI (3mm) DRB	PERFUSION	AX T2WI (3mm) DRB	POST SAG MPRAGE 3D STEALTH	POST AX T1WI FLAIR DRB	POST AX T2 FLAIR DRB
Sequence Name	fl	tfl	spcR	tir	swi_r	epse	epse	tseR	tir	tse	epfid	tseR	tfl	tir	tir
Dimension	3D	3D	3D	2D	3D	2D	2D	2D	2D	2D	2D	2D	3D	2D	2D
Acceleration mode	GRAPPA	GRAPPA	CAIPIRINHA	GRAPPA	GRAPPA	SMS	SMS	GRAPPA	GRAPPA	GRAPPA	GRAPPA	GRAPPA	GRAPPA	GRAPPA	GRAPPA
Total Factor	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—
Acceleration Factor PE	3	2	2	3	2	2	2	3	3	3	2	3	2	3	3
Acceleration Factor 3D	1	1	2	—	1	—	—	—	—	—	—	—	1	—	—
Reference Lines PE	24	64	24	52	24	30	34	40	24	26	62	40	64	24	52
Reference Scans	Integrated	GRE/Separate	Integrated	Integrated	Integrated	EPI/Separate	EPI/Separate	Integrated	Integrated	Integrated	EPI/Separate	Integrated	GRE/Separate	Integrated	Integrated
Deep Resolve	—	—	—	On	Off	Off	Off	On	On	On	—	On	—	On	On

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MR Gadopiclenol (VUEWAY®) Protocol for Siemens MRI Scanners
Pediatric

IMAGING FORUMS, INC.

SCAN PARAMETERS

Scan Description	AAhead_scout	SAG MPRAGE 3D	SAG T2 3D SPACE STEALTH	AX T2 FLAIR DRB	AX SWI	AX DWI	AX DTI	POST AX T2WI (3mm) DRB	AX T1WI FLAIR DRB	COR HR T2WI (3mm) DRB	PERFUSION	AX T2WI (3mm) DRB	POST SAG MPRAGE 3D STEALTH	POST AX T1WI FLAIR DRB	POST AX T2 FLAIR DRB
TR	3.15 ms	2500.0 ms	3200.0 ms	9000.0 ms	27.0 ms	3200.0 ms	4100.0 ms	4000.0 ms	2000.0 ms	4400.0 ms	1600.0 ms	4000.0 ms	2500.0 ms	2000.0 ms	9000.0 ms
TE	1.37 ms	3.87 ms	401.00 ms	126.00 ms	20.00 ms	87.00 ms	89.00 ms	106.00 ms	9.00 ms	106.00 ms	30.00 ms	106.00 ms	3.87 ms	9.00 ms	126.00 ms
TI	—	1240 ms	—	2500 ms	—	—	—	—	900 ms	—	—	—	1240 ms	900 ms	2500 ms
Flip Angle	8 deg	8 deg	T2 Var	150 deg	15 deg	—	—	160 deg	150 deg	160 deg	90 deg	160 deg	8 deg	150 deg	150 deg
Bandwidth	540 Hz/Px	170 Hz/Px	657 Hz/Px	289 Hz/Px	120 Hz/Px	1540 Hz/Px	1330 Hz/Px	241 Hz/Px	260 Hz/Px	250 Hz/Px	1446 Hz/Px	241 Hz/Px	170 Hz/Px	260 Hz/Px	289 Hz/Px
Turbo Factor	—	224	282	21	—	—	—	15	4	17	—	15	224	4	21
Echo Spacing	—	9.06 ms	3.78 ms	9.02 ms	—	0.94 ms	0.94 ms	9.60 ms	9.02 ms	9.66 ms	0.78 ms	9.60 ms	9.06 ms	9.02 ms	9.02 ms
Echo Trains per Slice	—	—	—	7	—	—	—	12	32	11	—	12	—	32	7
EPI Factor	—	—	—	—	—	112	114	—	—	—	128	—	—	—	—
Gradient Mode	Normal	Normal	Fast	Fast	Normal	Fast*	Fast	Fast	Fast	Fast	Fast	Fast	Normal	Fast	Fast
RF Pulse Type	Fast	Normal	Normal	Normal	Fast	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
RF Spoiling	On	On	—	—	On	—	—	—	—	—	—	—	On	—	—
Asymmetric Echo	Weak	Off	—	—	Off	—	—	—	—	—	—	—	Off	—	—
Flow Compensation	—	None	None	None	On	—	—	None	None	None	—	None	None	None	None
Reduce Motion Sens.	—	—	—	On	—	—	—	On	On	On	—	On	—	On	On
Phase Correction	—	—	—	Automatic	—	External	Internal	Automatic	Automatic	Automatic	—	Automatic	—	Automatic	Automatic

CONTRAST & MAGNETIZATION

Scan Description	AAhead_scout	SAG MPRAGE 3D	SAG T2 3D SPACE STEALTH	AX T2 FLAIR DRB	AX SWI	AX DWI	AX DTI	POST AX T2WI (3mm) DRB	AX T1WI FLAIR DRB	COR HR T2WI (3mm) DRB	PERFUSION	AX T2WI (3mm) DRB	POST SAG MPRAGE 3D STEALTH	POST AX T1WI FLAIR DRB	POST AX T2 FLAIR DRB
Fat-Water Contrast	Standard	Standard	Standard	Fat Saturation	Standard	Fat Saturation	Fat Saturation	Standard	Standard	Standard	Fat Saturation	Standard	Standard	Standard	Fat Saturation
Fat Saturation	—	—	—	Strong	—	Strong	Strong	—	—	—	—	—	—	—	Strong
Magn. Preparation	—	Non-sel. IR	None	Slice-sel. IR	None	None	None	None	Slice-sel. IR	None	—	None	Non-sel. IR	Slice-sel. IR	Slice-sel. IR
MTC	—	—	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	—	Off	Off
Dark Blood	—	Off	Off	Off	Off	—	—	Off	Off	Off	—	Off	Off	Off	Off
Contrasts	1	1	—	1	1	—	—	1	1	1	—	1	1	1	1
Reconstruction	Magnitude	Magnitude	Magnitude	Magnitude	Magn./Phase	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude
Wrap-up Magn.	—	—	Restore	None	—	—	—	Restore	None	None	—	Restore	—	None	None

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MR Gadopiclenol (VUEWAY®) Protocol for Siemens MRI Scanners
Pediatric

IMAGING FORUMS, INC.

ACQUISITION PARAMETERS

Scan Description	AAhead_scout	SAG MPRAGE 3D	SAG T2 3D SPACE STEALTH	AX T2 FLAIR DRB	AX SWI	AX DWI	AX DTI	POST AX T2WI (3mm) DRB	AX T1WI FLAIR DRB	COR HR T2WI (3mm) DRB	PERFUSION	AX T2WI (3mm) DRB	POST SAG MPRAGE 3D STEALTH	POST AX T1WI FLAIR DRB	POST AX T2 FLAIR DRB
Base Resolution	160	224	224	320	256	112	114	384	320	400	128	384	224	320	320
Phase Resolution	100 %	100 %	100 %	70 %	96 %	100 %	100 %	80 %	70 %	85 %	100 %	80 %	100 %	70 %	70 %
Slice Resolution	69 %	100 %	100 %	—	100 %	—	—	—	—	—	—	—	100 %	—	—
Averages	1	1	2.0	1	1	—	—	1	1	1	1	1	1	1	1
Concatenations	1	1	1	2	1	1	1	2	2	2	1	2	1	2	2
FoV Read	260 mm	200 mm	200 mm	180 mm	180 mm	180 mm	180 mm	180 mm	180 mm	180 mm	220 mm	180 mm	200 mm	180 mm	180 mm
FoV Phase	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
Phase Encoding Dir.	A >> P	A >> P	A >> P	R >> L	R >> L	A >> P	A >> P	R >> L	R >> L	R >> L	A >> P	R >> L	A >> P	R >> L	R >> L
Phase Oversampling	0 %	0 %	0 %	50 %	0 %	0 %	0 %	50 %	50 %	50 %	0 %	50 %	0 %	50 %	50 %
Slice Oversampling	0.0 %	7.7 %	8.3 %	—	10.0 %	—	—	—	—	—	—	—	7.7 %	—	—
Phase Partial Fourier	6/8	Off	Off	Off	7/8	7/8	6/8	Off	Off	Off	Off	Off	Off	Off	Off
Slice Partial Fourier	6/8	Off	Off	—	7/8	—	—	—	—	—	—	—	Off	—	—
Interpolation	—	On	On	On	Off	On	Off	On	On	On	Off	On	On	On	On
Trajectory	Cartesian	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Multi-Slice Mode	Sequential	Single Shot	—	Interleaved	Interleaved	Interleaved	Interleaved	Interleaved	Interleaved	Interleaved	Interleaved	Interleaved	Single Shot	Interleaved	Interleaved

SCANNING RANGE

Scan Description	AAhead_scout	SAG MPRAGE 3D	SAG T2 3D SPACE STEALTH	AX T2 FLAIR DRB	AX SWI	AX DWI	AX DTI	POST AX T2WI (3mm) DRB	AX T1WI FLAIR DRB	COR HR T2WI (3mm) DRB	PERFUSION	AX T2WI (3mm) DRB	POST SAG MPRAGE 3D STEALTH	POST AX T1WI FLAIR DRB	POST AX T2 FLAIR DRB
Slice Thickness	1.6 mm	0.90 mm	0.90 mm	4.0 mm	1.50 mm	4.0 mm	1.8 mm	3.0 mm	4.0 mm	3.0 mm	4.0 mm	3.0 mm	0.90 mm	4.0 mm	4.0 mm
Slices	128 Slices per Slab	208 Slices per Slab	192 Slices per Slab	36 Slices	80 Slices per Slab	34 Slices	62 Slices	50 Slices	36 Slices	50 Slices	20 Slices	50 Slices	208 Slices per Slab	36 Slices	36 Slices
Distance Factor	20 %	50 %	—	0 %	20 %	10 %	0 %	0 %	0 %	0 %	30 %	0 %	50 %	0 %	0 %
Special Saturation	—	—	None	None	None	None	None	None	None	None	None	None	—	None	None
Raw Filter	Off	Off	On	Off	Off	Off	Off	Off	Off	Off	On	Off	Off	Off	Off
Elliptical Filter	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Image Filter	Off	On	Off	Off	Off	—	—	Off	Off	Off	—	Off	On	Off	Off
Distortion Correction	3D	2D	2D	2D	2D	Off	Off	2D	2D	2D	2D	2D	2D	2D	2D
Normalize	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Off	Prescan	Prescan	Prescan	Prescan
Noise Masking	Off	—	—	—	—	Off	Off	—	—	—	—	—	—	—	—
Time of Acquisition	14 sec	4:52 min	4:40 min	2:26 min	4:11 min	3:20 min	7:20 min	1:46 min	2:14 min	1:47 min	1:42 min	1:46 min	4:52 min	2:14 min	2:26 min

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DIFFUSION

Scan Description	AAhead_scout	SAG MPRAGE 3D	SAG T2 3D SPACE STEALTH	AX T2 FLAIR DRB	AX SWI	AX DWI	AX DTI	POST AX T2WI (3mm) DRB	AX T1WI FLAIR DRB	COR HR T2WI (3mm) DRB	PERFUSION	AX T2WI (3mm) DRB	POST SAG MPRAGE 3D STEALTH	POST AX T1WI FLAIR DRB	POST AX T2 FLAIR DRB
Diffusion Mode	—	—	—	—	—	MDDW	MDDW	—	—	—	—	—	—	—	—
Diffusion Scheme	—	—	—	—	—	Monopolar	Monopolar	—	—	—	—	—	—	—	—
Diff. Directions	—	—	—	—	—	6	30	—	—	—	—	—	—	—	—
b-value 1	—	—	—	—	—	0 s/mm²	0 s/mm²	—	—	—	—	—	—	—	—
b-value 2	—	—	—	—	—	1000 s/mm²	1000 s/mm²	—	—	—	—	—	—	—	—
Averages b-value 1	—	—	—	—	—	1	12	—	—	—	—	—	—	—	—
Averages b-value 2	—	—	—	—	—	3	3	—	—	—	—	—	—	—	—
Diff. Weightings	—	—	—	—	—	3	2	—	—	—	—	—	—	—	—
Diff. Weighted Images	—	—	—	—	—	Off	On	—	—	—	—	—	—	—	—
Trace Weighted Images	—	—	—	—	—	On	On	—	—	—	—	—	—	—	—
ADC Maps	—	—	—	—	—	On	On	—	—	—	—	—	—	—	—
Exponential ADC Maps	—	—	—	—	—	Off	Off	—	—	—	—	—	—	—	—
FA Maps	—	—	—	—	—	On	On	—	—	—	—	—	—	—	—
Calculated Image	—	—	—	—	—	Off	Off	—	—	—	—	—	—	—	—

DYNAMIC CONTRAST

Scan Description	AAhead_scout	SAG MPRAGE 3D	SAG T2 3D SPACE STEALTH	AX T2 FLAIR DRB	AX SWI	AX DWI	AX DTI	POST AX T2WI (3mm) DRB	AX T1WI FLAIR DRB	COR HR T2WI (3mm) DRB	PERFUSION	AX T2WI (3mm) DRB	POST SAG MPRAGE 3D STEALTH	POST AX T1WI FLAIR DRB	POST AX T2 FLAIR DRB
Dynamic Mode	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Measurements	1	1	1	1	1	—	—	1	1	1	60	1	1	1	1
Multiple Series	—	Each Measurement	Each Measurement	Each Measurement	Each Measurement	Off	Off	Each Measurement	Off	Each Measurement	Off	Each Measurement	Each Measurement	Off	Each Measurement
Time to Center	6.2 s	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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