



**ON-LINE FIGURE.** Example of ROI placement in a female 37.14-gestational week fetus. Coronal view of a midbrain ROI used for SCP delineation (A), coronal view of pons ROI used for MCP delineation (B), axial view of medulla ROI used for inferior cerebellar peduncle delineation (C), and coronal view of cerebellar hemisphere ROIs used for SCP, MCP, and ICP delineation (D).

**On-line Table 1: Failed cases and related artifacts**

Failed Case	Gestational Age (Weeks)	Presence of Artifacts?	Notes
1	23.14	Yes	Fetal motion
2	24.71	Yes	Dialectic effect
3	25.14	Yes	Fetal motion
4	26.14	Yes	Fetal motion
5	26.57	Yes	Fetal motion
6	26.86	Yes	Fetal motion
7	27	Yes	Fetal motion
8	28	Yes	Maternal motion
9	30	Yes	Fetal motion
10	30.57	Yes	Maternal motion
11	31.57	Yes	Bowel gas artifact
12	31.86	Yes	Fetal motion
13	32.14	Yes	Dialectic effect
14	34.14	Yes	Wraparound artifact
15	34.14	Yes	Dialectic effect
16	35.43	No	Failed reconstruction
17	35.57	Yes	Other artifacts
18	35.71	Yes	Coil malfunction
19	35.71	No	Failed reconstruction
20	35.71	Yes	Dialectic effect
21	37.57	Yes	Fetal motion
22	37.57	No	Failed reconstruction
23	38.14	Yes	Other artifacts
24	38.71	Yes	Other artifacts

**On-line Table 2: Tractography success and anatomic analysis of tracts<sup>a</sup>**

Tract	Median GA (Weeks) (IQR)	P	Median Absolute Motion (Millimeters) (IQR)	P
SCP ( <i>n</i> = 39)	Successful 30.07 (9.72) Symmetric 30.29 (7.57)	Unsuccessful 30.29 (5.28) Asymmetric 0.520	0.442	Successful 5.48 (2.57) Symmetric 5.06 (2.26)
MCP ( <i>n</i> = 58)	Successful 30.57 (7.00)	Unsuccessful —	6.17 (3.93)	Successful —
MCP <sub>cog</sub> and MCP <sub>mot</sub> distinction 30.29 (7.57)	No distinction 31.57 (6.43)	—	MCP <sub>cog</sub> and MCP <sub>mot</sub> distinction 5.16 (1.69)	—
			No distinction 5.47 (7.57)	.457

**Note:**—IQR indicates interquartile range; —??????.

<sup>a</sup> P values correspond to Wilcoxon rank sum tests.