

Table S1. Neuroimaging findings

	Percentage % (number)
Classical findings	
Skull fracture(s)	32.4 (33)
EDH	6.8 (7)
SDH	83.3 (85)
SAH	30.4 (31)
IVH	15.7 (16)
Contusion(s)	20.6 (21)
DAI	6.9 (7)
HII	47.1 (48)
Non-classical findings	
BVT	30.4 (31)
SPH	5 (5)
PL	10 (10)
AS	5 (5)
VS	1 (1)
Spinal cord imaging	
Ligamentous injury	46.9 (23)
Compression fracture	2 (1)
Hematoma	22.4 (11)

AS, arterial stroke; BVT, bridging vein thrombosis; DAI, diffuse axonal injury; EDH, epidural hematoma; HII, hypoxic ischemic injury; IVH, intraventricular hemorrhage; PL, parenchymal laceration; SAH, subarachnoid hemorrhage; SDH, subdural hematoma; SPH, subpial hemorrhage; VS, venous stroke

Table S2. Neuroimaging findings based on survival

	Survivor number (%) ¹	Deceased number (%) ²	p-value ³
Classical findings			
Skull fracture(s)	27(32.1)	6(33.3)	0.97
EDH	6(7.1)	1(5.8)	0.99
SDH	71(84.5)	14(77.8)	0.49
SAH	25(29.8)	6(33.3)	0.77
IVH	13(15.5)	3(16.7)	0.99
Contusion(s)	16(19.1)	5(27.8)	0.52
DAI	7(8.3)	0(0)	0.35
HII	32(38.1)	16(88.9)	0.0001
Non-classical findings			
BVT	30(36.1)	1(5.9)	0.01
SPH	5(6.0)	0(0)	0.59
PL	9(10.8)	1(5.9)	0.99
AS	5(6.0)	0(0)	0.59
VS	1(1.2)	0(0)	0.99
Spinal cord imaging			
Ligamentous injury	21(44.7)	2(100)	0.22
Compression fracture	1(2.1)	0(0)	0.99
Hematoma	10(21.3)	1(50)	0.40

AS, arterial stroke; BVT, bridging vein thrombosis; DAI, diffuse axonal injury; EDH, epidural hematoma; HII, hypoxic ischemic injury; IVH, intraventricular hemorrhage; PL, parenchymal laceration; SAH, subarachnoid hemorrhage; SDH, subdural hematoma; SPH, subpial hemorrhage; VS, venous stroke

¹ 84 surviving children after AHT (82.4%)

² 18 deceased children after AHT (17.6%)

³ p-values are based on Chi-square test

Table S3. Glasgow coma scale on admission and neuroimaging findings

	GCS median (IQR)		p-value ¹
	negative	positive	
Classical findings			
Skull fracture(s)	11.0(3-15)	13.5(3-15)	0.59
EDH	11.0(3-15)	15.0(3-15)	0.44
SDH	13.5(3-15)	11.0(3-15)	0.96
SAH	11.0(3-15)	11.5(3-15)	0.57
IVH	13.0(3-15)	8.1(3-15)	0.31
Contusion(s)	12.0(3-15)	8.0(3-15)	0.38
DAI	12.0(3-15)	5.0(3-15)	0.34
HII	15.0(3-15)	3.0(3-15)	<0.0001
Non-classical findings			
BVT	11(3-15)	12.0(3-15)	0.38
SPH	11.5(3-15)	10.0(3-15)	0.87
PL	11.0(3-15)	15.0(3-15)	0.14
AS	11.5(3-15)	6.0(3-15)	0.79
VS	11.5(3-15)	3.0(3-3) ²	0.22
Spinal cord imaging			
Ligamentous injury	12.5(3-15)	4.5(3-9)	0.017
Compression fracture	8.0(3-15)	15.0(15-15) ²	0.23
Hematoma	8.5(3-15)	8.5(4-14)	0.97

AS, arterial stroke; BVT, bridging vein thrombosis; DAI, diffuse axonal injury; EDH, epidural hematoma; GCS, Glasgow coma scale; HII, hypoxic ischemic injury; ICU, intensive care unit; IVH, intraventricular hemorrhage; IQR, interquartile range; PL, parenchymal laceration; SAH, subarachnoid hemorrhage; SDH, subdural hematoma; SPH, subpial hemorrhage; VS, venous stroke

¹ p-values are based on Wilcoxon Rank Sum test

² There is only 1 patient in this group

Table S4. Interval of length of hospital stay and neuroimaging findings

	LOS mean (SD)		p-value ¹
	negative	positive	
Classical findings			
Skull fracture(s)	16.5 (17.7)	13.7 (15.8)	0.44
EDH	16.1 (17.5)	9.6 (8.3)	0.33
SDH	10 (14.3)	16.7 (17.5)	0.14
SAH	16.1 (18.7)	14.3 (12.9)	0.62
IVH	14.1 (17.1)	23.6 (15.6)	0.04
Contusion(s)	15.5 (17.8)	16.3 (14.5)	0.84
DAI	14.5 (16.8)	30.4 (15.0)	0.017
HII	10.5 (12.8)	21.3 (16.3)	0.001
Non-classical findings			
BVT	13.9 (18.0)	19.8 (15.0)	0.11
SPH	15.8 (17.5)	14.4 (12.6)	0.85
PL	15.8 (17.8)	15.5 (11.6)	0.96
AS	14.3 (16.1)	42.2 (18.5)	0.0003
VS	15.6 (17.3)	25.0(-) ²	0.59
Spinal cord imaging			
Ligamentous injury	19.5 (18.6)	30.3 (19.7)	0.06
Compression fracture	24.8 (19.7)	5.0 (-) ²	0.32
Hematoma	23.8 (20.3)	26.4 (18.1)	0.70

AS, arterial stroke; BVT, bridging vein thrombosis; DAI, diffuse axonal injury; EDH, epidural hematoma; HII, hypoxic ischemic injury; IVH, intraventricular hemorrhage; LOS, length of stay; PL, parenchymal laceration; SAH, subarachnoid hemorrhage; SD, standard deviation; SDH, subdural hematoma; SPH, subpial hemorrhage; VS, venous stroke

¹ p-values are based on t-test

² There is only 1 patient in this group

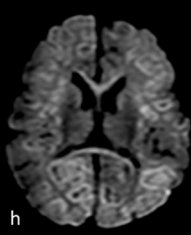
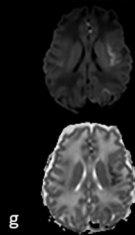
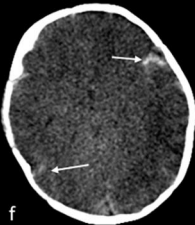
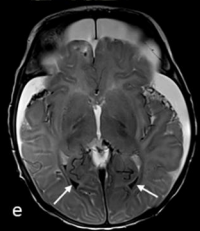
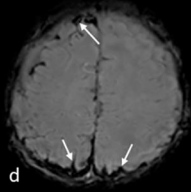
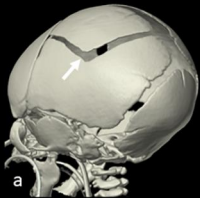
Table S5. Intensive care unit stay and neuroimaging findings

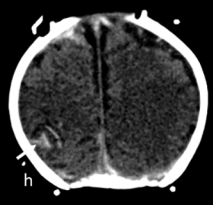
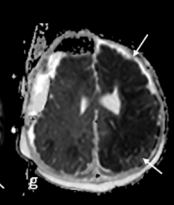
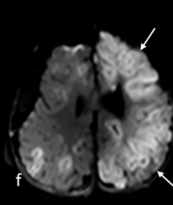
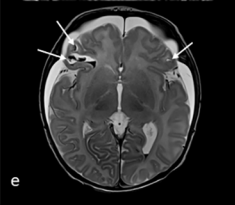
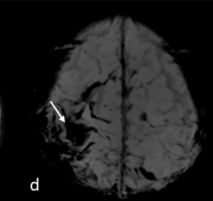
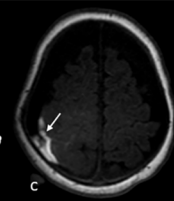
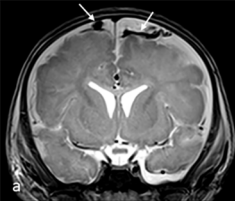
	Days in ICU mean (SD)		p-value ¹
	negative	positive	
Classical findings			
Skull fracture(s)	7.8 (10.2)	5.5 (6.9)	0.23
EDH	7.3 (9.4)	4.7 (6.9)	0.47
SDH	3.2 (3.9)	7.9 (9.9)	0.054
SAH	6.8 (9.8)	7.8 (8.2)	0.64
IVH	6.2 (9.2)	12.2 (8.6)	0.02
Contusion(s)	6.9 (9.6)	8.1 (8.4)	0.59
DAI	6.5 (8.9)	15.6 (10.2)	0.01
HII	2.9 (4.4)	11.8 (8.2)	<0.0001
Non-classical findings			
BVT	6.3 (9.8)	9.1 (8.1)	0.16
SPH	7.2 (9.4)	6.4 (8.7)	0.85
PL	7.2 (9.7)	7.1 (5.9)	0.97
AS	6.7 (9.1)	17.0 (10.8)	0.01
VS	7.1 (9.4)	12 (-) ²	0.60
Spinal cord imaging			
Ligamentous injury	8.2 (9.8)	14.6 (10.6)	0.03
Compression fracture	11.4 (10.6)	0 (-) ²	0.29
Hematoma	11.1 (11.7)	11.5 (6.0)	0.93

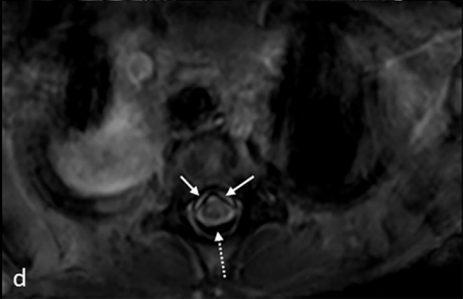
AS, arterial stroke; BVT, bridging vein thrombosis; DAI, diffuse axonal injury; EDH, epidural hematoma; HII, hypoxic ischemic injury; ICU, intensive care unit; IVH, intraventricular hemorrhage; PL, parenchymal laceration; SAH, subarachnoid hemorrhage; SD, standard deviation; SDH, subdural hematoma; SPH, subpial hemorrhage; VS, venous stroke

¹ p-values are based on t-test test

² There is only 1 patient in this group







Supplemental figure legends:

Figure S1: Classical findings; a) Skull fracture in a 3-month-old baby-boy, 3D volume rendered CT image shows diastatic, displaced fracture (arrow) of the left parietal bone extending from the coronal suture posteriorly into the posterior aspect of the sagittal suture, b) Epidural hematoma in a 4 month-old baby-boy, axial CT image shows extra-axial collection with acute blood products (arrow) adjacent to a displaced linear left parietal fracture with large left parietal scalp hematoma, c) Subdural hematoma in a 4-year-old boy, axial CT exam shows heterogeneous subdural collection (arrows) overlying the right cerebral hemisphere causing midline shift, d) Subarachnoid hemorrhage in a 2-month-old baby-boy, axial Susceptibility Weighted Imaging (SWI) shows scattered areas of subarachnoid hemorrhage in the right frontal lobe sulci and bilateral parietal lobe sulci(arrows), e) Intraventricular hemorrhage in a 2-month-old baby-girl, axial T2 weighted MRI exam shows bilateral hypointense intraventricular hemorrhage (arrows), f) Contusion in a 1-year-old baby-boy, axial CT exam shows cortical contusions (arrows), coup lesion on the left anterior temporal region and contre-coup lesion in the occipital-temporal region, g) Diffuse axonal injury, Diffusion Weighted Imaging (DWI) and Apparent Diffusion Coefficient (ADC) images show restricted diffusion along the left perisylvian sulci, left occipital convexities, and left parasagittal frontal convexities, h) Hypoxic ischemic injury, DWI shows global diffuse restricted diffusion compatible with cytotoxic edema/injury.

Figure S2: Non-classical findings; a) Bridging vein thrombosis in a 3-month-old baby-boy, bilateral hypointense bridging vein thrombosis on coronal T2-weighted MR imaging (arrows) and b) in a 2-month-old baby-boy bilateral multiple bridging vein thrombosis on

axial CT (arrows), c) Subpial hemorrhage in a 2-month-old baby-boy, right parietal subpial hemorrhage with T1 shortening (arrow) and d) susceptibility artifact (arrow), e) Parenchymal laceration in a 2-month-old baby-boy, axial T2-weighted MR imaging shows bilateral frontal parenchymal lacerations(arrows), greater on the right side, f, g) Arterial stroke in a 5-month-old baby-girl f) DWI and g) ADC show extensive left sided restricted diffusion (arrows), h) Venous stroke in a 2-month-old baby-boy, coronal CT exam shows bilateral large parenchymal hypodensity and right parietal hemorrhage (arrow) with surrounding edema , findings representing venous stroke.

Figure S3: Spinal cord MRI findings; a) Compression fracture in a 1-month-old baby-boy, sagittal T2-weighted MRI exam show abnormal hyperintense signal in the first and second thoracic vertebral bodies with mild loss of vertebral body height centrally (arrows), b-d) Ligamentous injury and spinal hematoma, Sagittal T2 and T1 weighted MRI exams show diffuse edema throughout the interspinous ligaments (b, c, arrowhead) as well as edema throughout the nuchal ligament (b, c, thick arrow) and underlying membranes and musculature. Sagittal T2-/T1- and axial T2-weighted MRI images show an epidural hematoma (b-d, thin arrow) beginning at C7-T1 and extending inferiorly with circumferential thecal sac subdural hemorrhage (b-d, dashed arrow).