

Addendum 1. Description of Semi-Quantitative Histology Scores

Description of Semi-Quantitative Histology Scores		
Attribute	Score	Description
Lumen Occlusion Score	0	No occlusion
	1	At least 25% of the lumen area occluded with embolic agent, thrombus, or a combination of the two
	2	At least 50% of the lumen area occluded with embolic agent, thrombus, or a combination of the two
	3	>50% of the lumen area occluded with embolic agent, thrombus, or a combination of the two
Vessel Wall Inflammation Score	0	<25% of the vessel wall (1 quadrant) with fewer than 10 inflammatory cells per 40x field
	1	Up to 25% of the vessel wall with greater than 10 inflammatory cells per 40x field
	2	25-50% of the vessel wall (up to 2 quadrants) with greater than 10 inflammatory cells per 40x field
	3	>50% of the vessel wall with greater than 10 inflammatory cells per 40x field
	4	1 or more granulomatous inflammatory reactions (Include a total count of granulomas across all cross-sections)
Vessel Medial Wall Injury Score	0	Internal elastic lamina (IEL) intact, endothelium typically denuded, media may be compressed but not lacerated
	1	IEL lacerated, media may be compressed or attenuated but not lacerated
	2	IEL lacerated, media visibly lacerated, external elastic lamina (EEL) intact but may be compressed
	3	EEL lacerated, typically large lacerations of media extending through EEL
Extravasation of Embolic Material	0	No extravasation of embolic material outside of the vessel lumen confines
	1	Extravasation of embolic material into perivascular space extending around \leq 1 quadrant of the vessel wall circumference
	2	Extravasation of embolic material into perivascular space extending around >1 to 2 quadrant of the vessel wall circumference
	3	Extravasation of embolic material into perivascular space extending around > 2 quadrants of the vessel wall circumference
Vessel Lumen Recanalization	0	No recanalization
	1	<25% of lumen area open to flow from recanalization
	2	25 to 50% of lumen area open to flow from recanalization
	3	>50% of lumen area open to flow from recanalization
Perivascular Hemorrhage	0	No hemorrhage into the perivascular space
	1	Hemorrhage into the perivascular space covering \leq 1 quadrant of the vessel wall circumference
	2	Hemorrhage into the perivascular space covering >1 to 2 quadrant of the vessel wall circumference
	3	Hemorrhage into the perivascular space covering > 2 quadrants of the vessel wall circumference
Arterial Wall	0	No necrosis

Necrosis	1	Necrosis involving 1 to <2 quadrants of the vessel wall
	2	Necrosis involving 2 to ≤3 quadrants of the vessel wall
	3	Necrosis involving >3 or more quadrants of the vessel wall
Distal Extension of Embolic Material	0	No embolic material present in rete cross-sections
	1	Extension of embolic material the proximal 1/3 of the rete length
	2	Extension of embolic material through the proximal 1/3 of the rete length and into the middle third of the rete
	3	Extension of embolic material into the distal third of the rete length
Material in the Brain	0	No evidence of material in the brain
	1	Microscopic or Histological evidence of liquid embolic material in the brain

Addendum 2.

Table 1. Rete histological scores of animals euthanized at 14 days. Data was determined by collection of fifteen occluded rete cross-sections of each treated animal. Scores adjudicated by the histopathologist based on the collection of cross-sections. An average score and standard deviation were calculated based on the collection of the 15 cross sections. The last column refers to the previous 2-week animal study done with the PHIL 35% parent device for comparison.

	PHIL LV				PHIL 35%
	Animal 3	Animal 4	Animal 5	Animal 6	Average
Luminal Occlusion	3.00 ± 0.00	3.00 ± 0.00	3.00 ± 0.00	3.00 ± 0.00	3.00 ± 0.00
Vessel Wall Inflammation	0.27 ± 0.59	1.47 ± 0.74	1.07 ± 0.70	1.20 ± 0.86	0.51 ± 0.31
Vessel Medial Wall Injury	0.93 ± 0.26	1.00 ± 0.53	0.40 ± 0.51	0.13 ± 0.35	0.15 ± 0.12
Extravasation of Embolic Material	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Vessel Lumen Recanalization	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
RBC (Perivascular Hemorrhage)	0.00 ± 0.00	0.00 ± 0.00	0.47 ± 0.74	0.20 ± 0.41	0.14 ± 0.18
Arterial Wall Necrosis	0.067 ± 0.26	0.60 ± 0.74	0.87 ± 1.06	0.33 ± 0.82	0.68 ± 0.41
Distal Extension of Embolic Material	3.00 ± 0.00	3.00 ± 0.00	2.00 ± 0.00	2.00 ± 0.00	3.00 ± 0.00

Table 2. Rete histological scores of animals euthanized at 90 days.

Histology Identifier	PHIL LV		PHIL 35%
	Animal 7	Animal 8	Average
Luminal Occlusion	3.00 ± 0.00	3.00 ± 0.00	3.00 ± 0.00
Vessel Wall Inflammation	1.27 ± 0.88	1.27 ± 0.59	0.80 ± 1.07
Vessel Medial Wall Injury	1.20 ± 0.94	1.47 ± 0.64	1.63 ± 0.69
Extravasation of Embolic Material	0.067 ± 0.26	0.067 ± 0.26	0.00 ± 0.00
Vessel Lumen Recanalization	0.067 ± 0.26*	0.27 ± 0.46*	0.00 ± 0.00
RBC (Perivascular Hemorrhage)	0.20 ± 0.41	0.00 ± 0.00	0.008 ± 0.091
Arterial Wall Necrosis	0.00 ± 0.00	0.00 ± 0.00	0.008 ± 0.091
Distal Extension of Embolic Material	3.00 ± 0.00	3.00 ± 0.00	3.00 ± 0.00

* Recanalization in these samples was present only within areas of intraluminal organizing thrombus and not within areas of the embolic material.