



Sciatic Nerve, Dog, Case: Necrosis or Not?

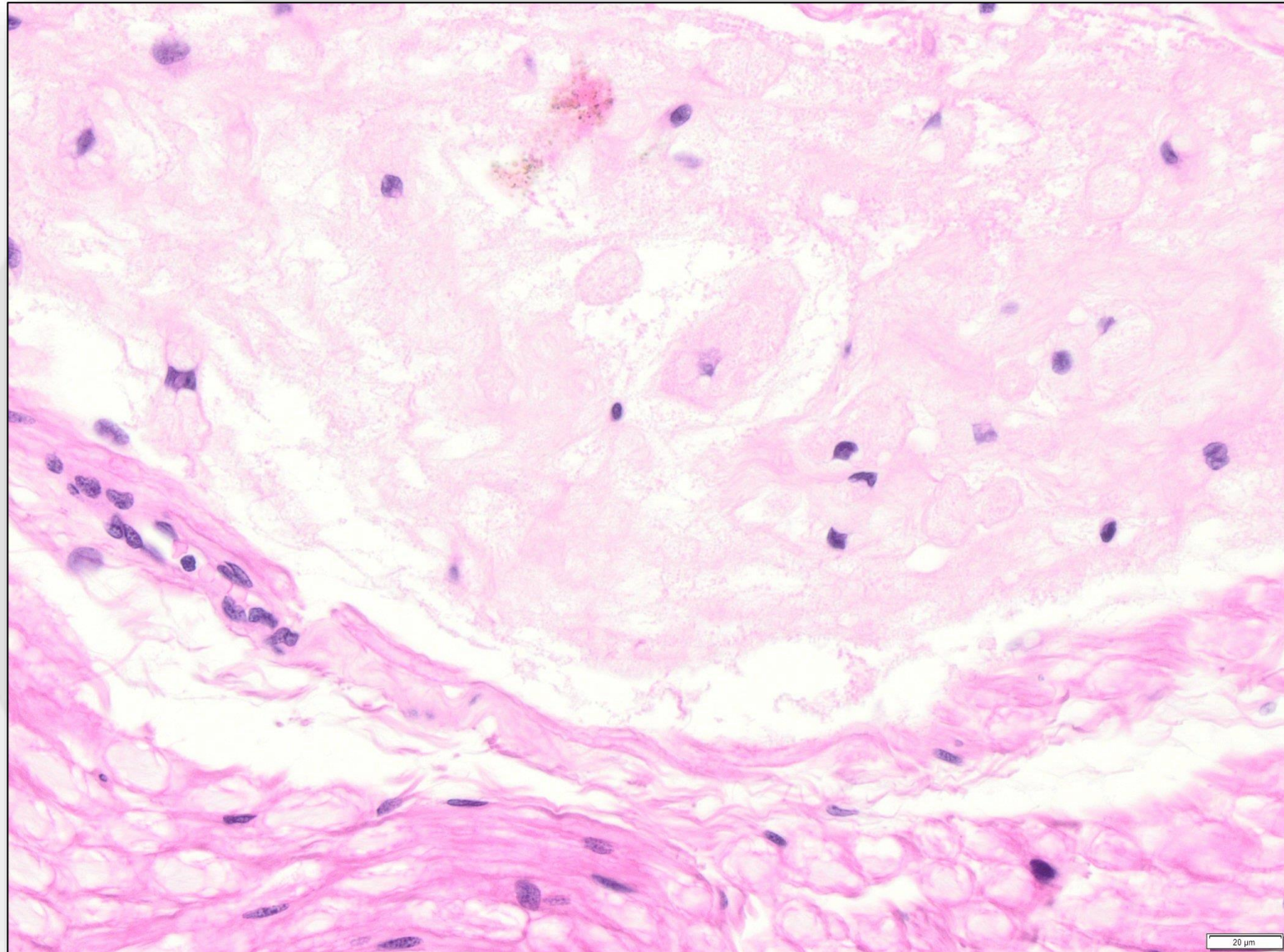
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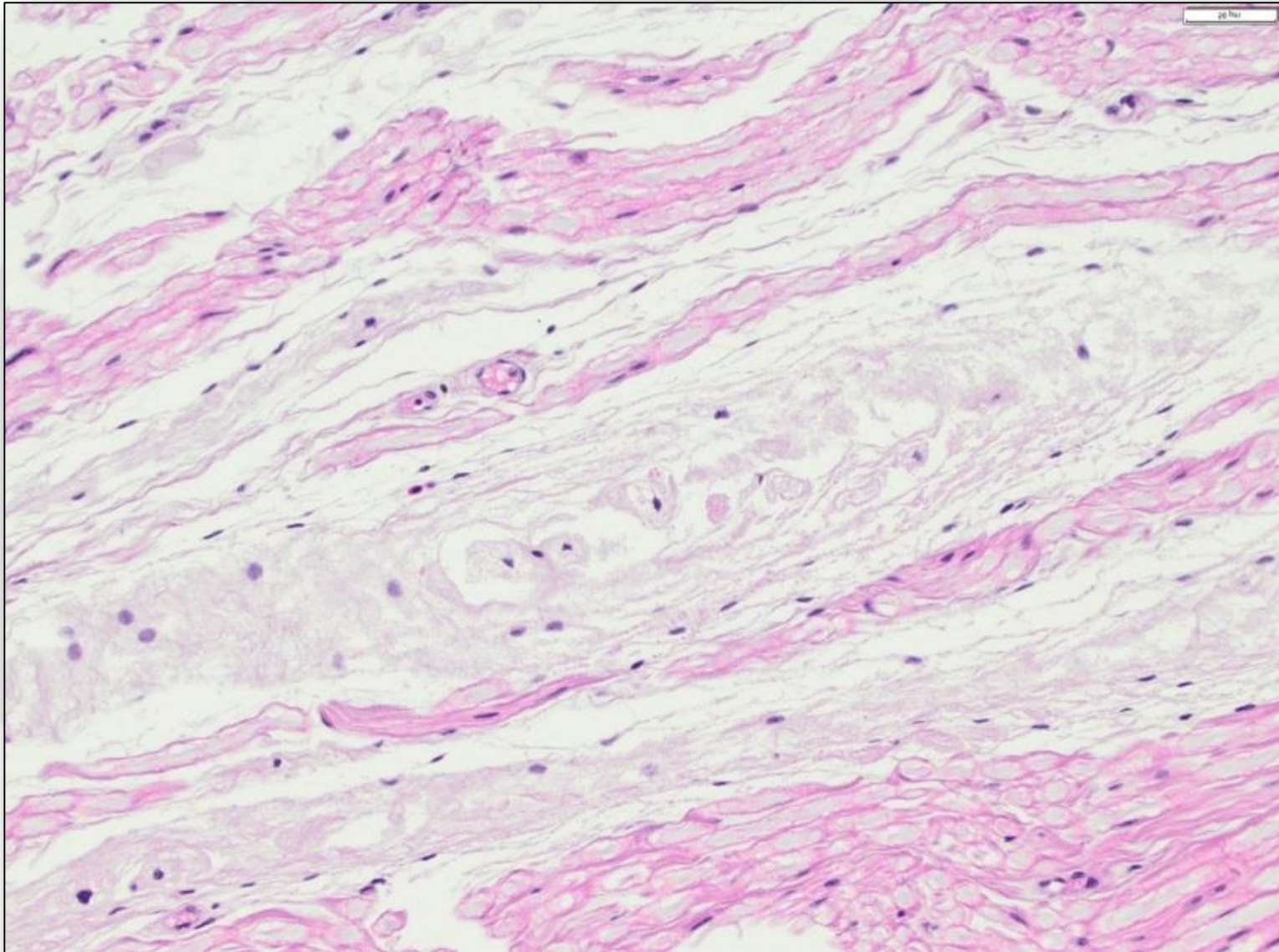
Other Issues: Necrosis in the peripheral nerve?

- **Sedating test item, intrathecal**
- **14-day Study with 24 hours interim sacrifice**
- **Unilateral lesion only, Males more affected than females**
- **almost 100% of animals from all doses affected**
- **Lesion occurred after 24 hours**

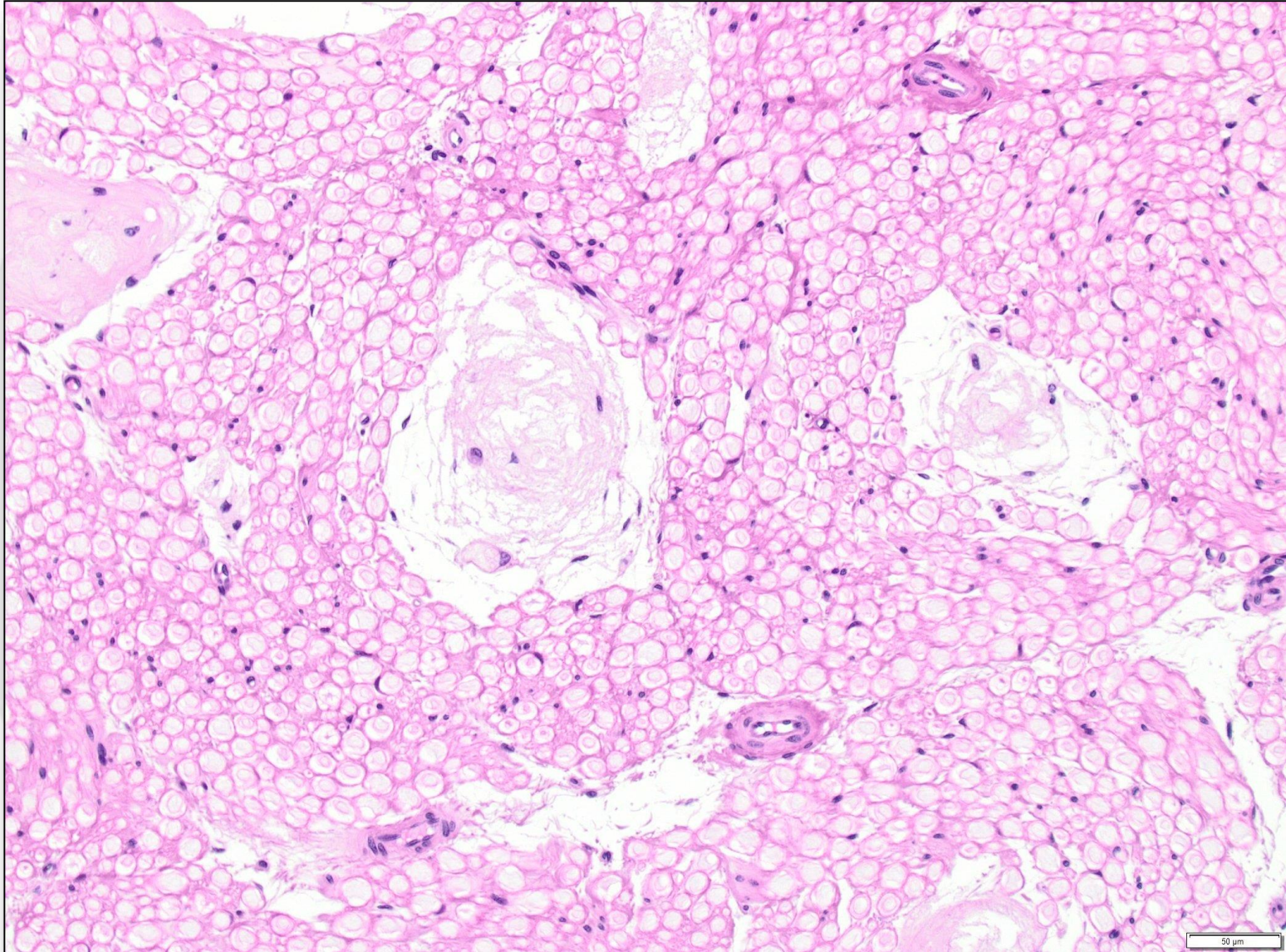
PR: Necrosis in the peripheral nerve?



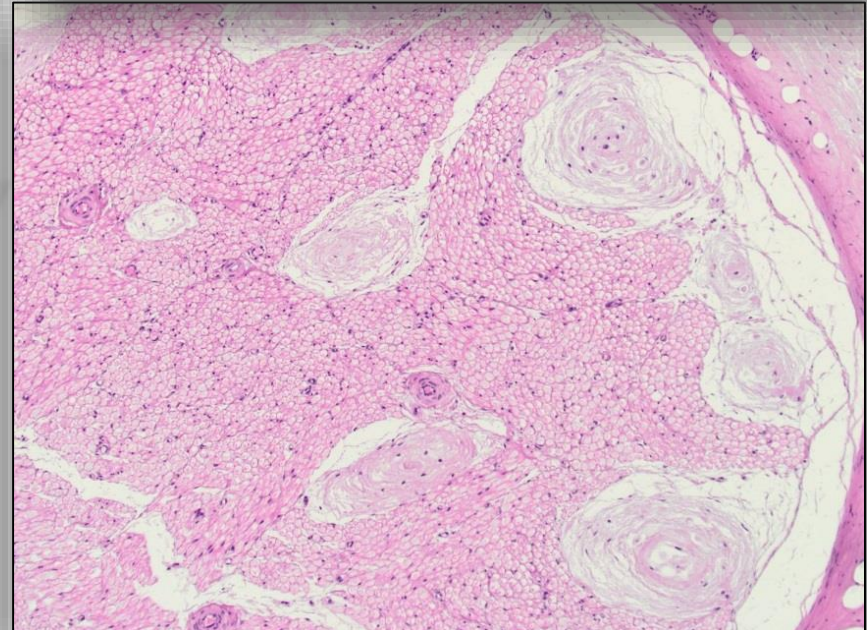
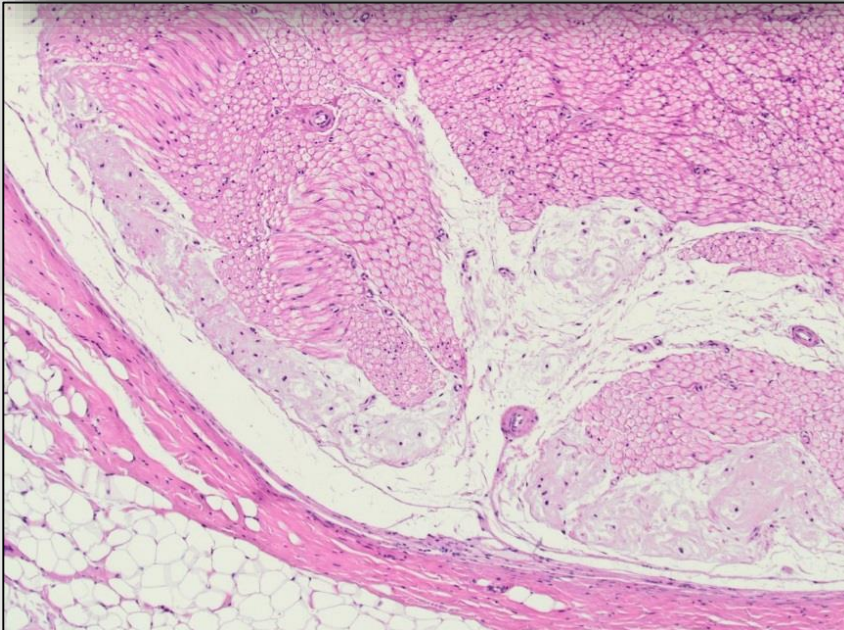
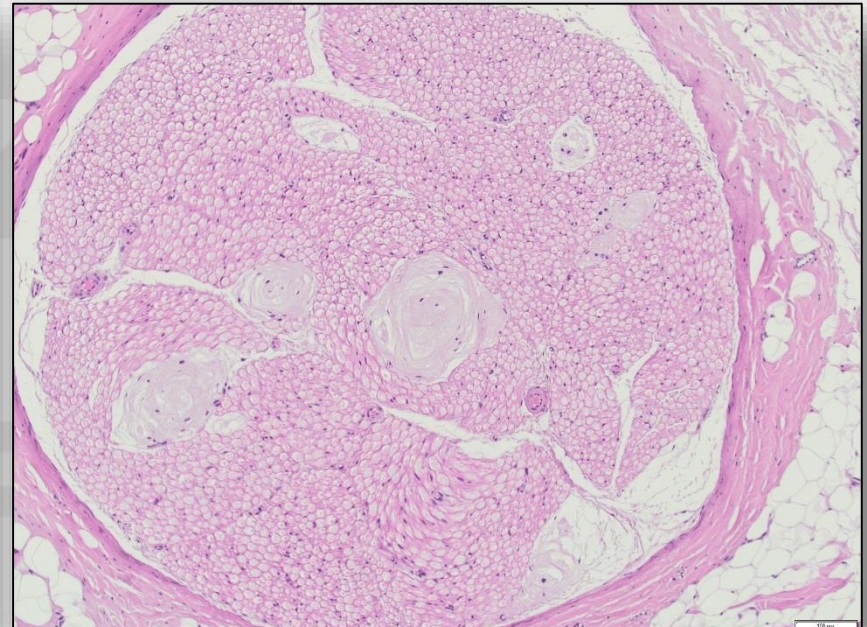
Other Issues: Necrosis in the peripheral nerve?



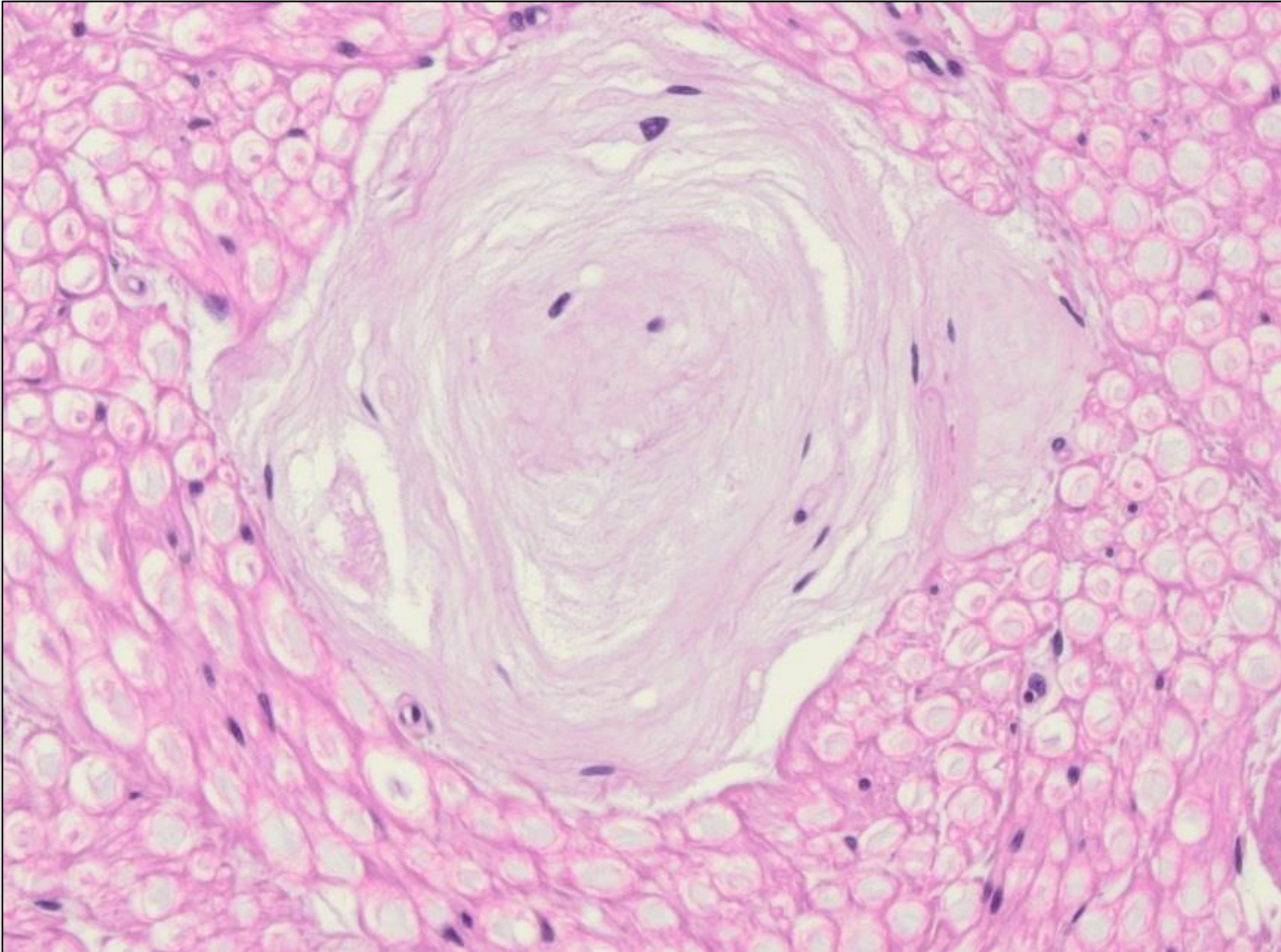
24 hours



Nerve periphery is most affected (2 weeks)



What is it?



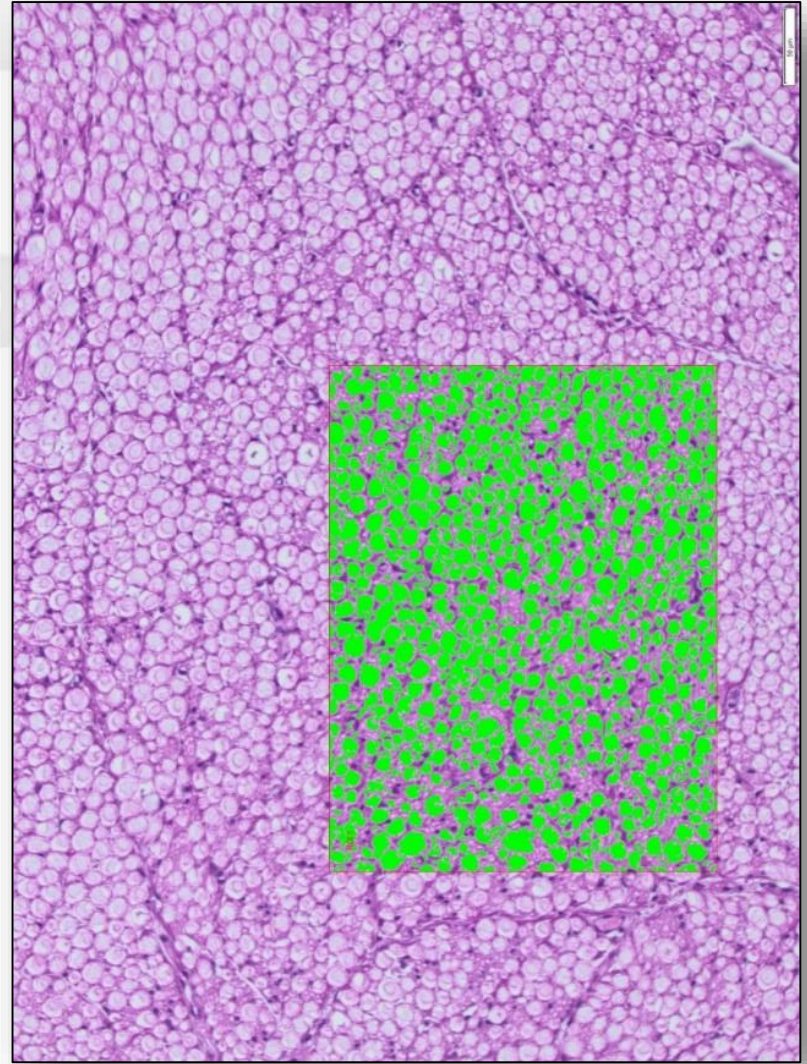
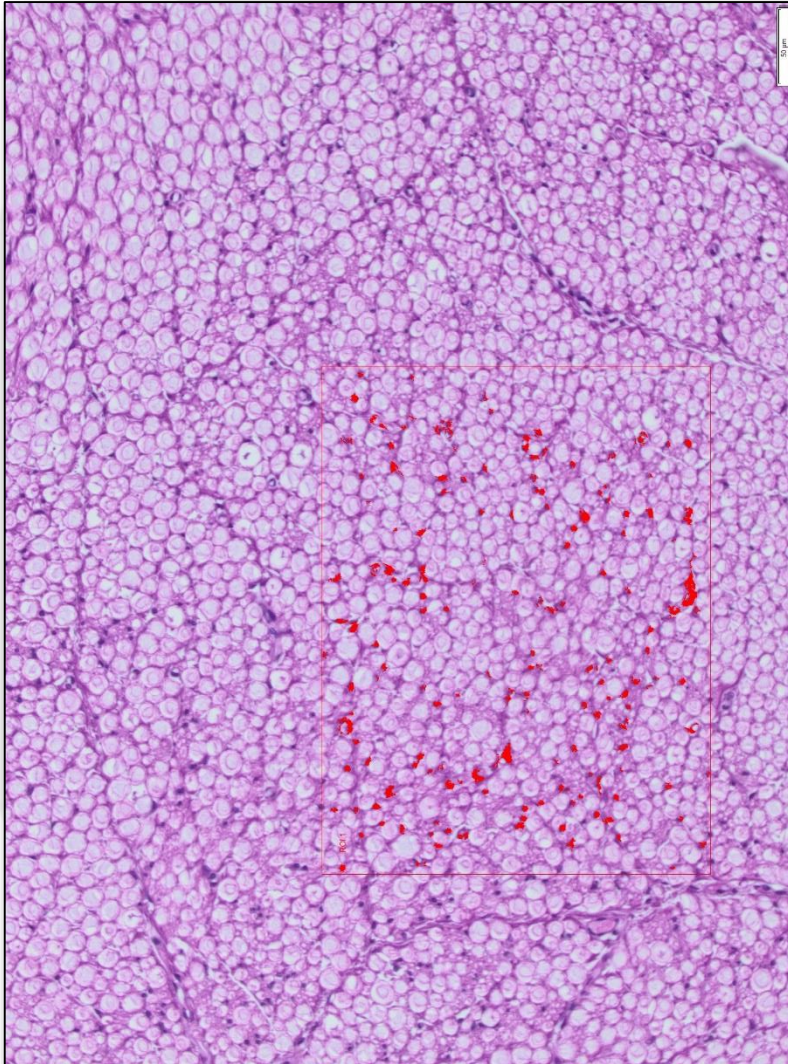
Animal used

Animal Id	Body Weight [kg]	Age [months]	Supplier
1	10.09	11	Marshall; USA
2	12.36	21	Marshall; USA
3	14.16	56	Harlan; France
4	9.33	22	Marshall; USA
5	9.60	27	Marshall; USA
6	11.66	21	Marshall; USA
7	9.54	27	Marshall; USA
8	10.79	21	Marshall; USA
9	9.09	21	Marshall; USA
10	7.55	21	Marshall; USA
11	10.30	57	Harlan; France
12	7.58	18	Harlan; France
13	10.32	37	Harlan; France
14	7.91	21	Marshall; USA
15	8.17	57	Harlan; France
16	10.30	21	Marshall; USA

Measurements (2 animals as examples)

Id	Large bundles	Remaut bodies	Large bundles	Remaut bodies	Small bundles		Large bundles	Remaut bodies	Large bundles	Remaut bodies	Small bundles
1	1929x 1936	150x150	1116x 1237	116x117	185x205		1947x 2024		1084x1156		347x354
				156x125	207x212						
					211x234						
					319x324						
2	1100x 1144		807x1045		161x206		1863x 1922	19x135	1249x1255	81x102	275x297
					244x299			84x97		130x123	332x361
					358x431			93x318		203x127	603x673
					412x422			109x169		226x190	
					532x735			100x166			
					553x633			110x160			
					617x842			114x144			
								116x121			
								103x136			
								121x116			
								137x182			
								173x173			
								192x198			

Particle Analysis



Particle Analysis

Parameter	Males: Marshall			Males: Harlan		
	Schwann nuclei	Nerve fibers	Relation	Schwann nuclei	Nerve fibers	Relation
Mean	147	521	3.74	179	578	3.23
Stand.Dev.	31	49	1.07	3	30	0.22
Minimum	94	454	2.41	176	548	3.01
Maximum	188	586	6.00	182	607	3.45
Parameter	Females: Marshall			Females: Harlan		
	Schwann nuclei	Nerve fibers	Relation	Schwann nuclei	Nerve fibers	Relation
Mean	147	496	3.47	160	598	4.16
Stand.Dev.	18	169	1.36	61	66	1.21
Minimum	121	261	1.81	110	437	2.12
Maximum	171	703	4.95	286	671	5.94

Outcome

- **Harlan dogs are slightly heavier than Marshall dogs, i.e., it may be considered the vertebral channel in Marshall dogs is narrower, and**
- **less subcutaneous fat is present in the superficial gluteal region than in Harlan dogs**
- **traumatic condition is the most likely cause of the lesion**
- **unilateral appearance only affection of one strain only excluding the probability of a toxic injury by the test item**

Renaut Bodies

- **Renaut bodies in peripheral nerves are accumulations of mucus-rich connective tissues (Krinke, 2011)**
- **supporting or cushioning function = Renaut's theory (Summers, Cummings, de Lahunta, 1995)**
- **cell of origin is unknown as far, however, markers identical to those of perineurial cells including epithelial membrane antigen, Glut-1, and claudin-1. T**
- **concept of perineurial but not endoneurial origin (Piña-Oviedo et al., 2009)**
- **Consequence!**