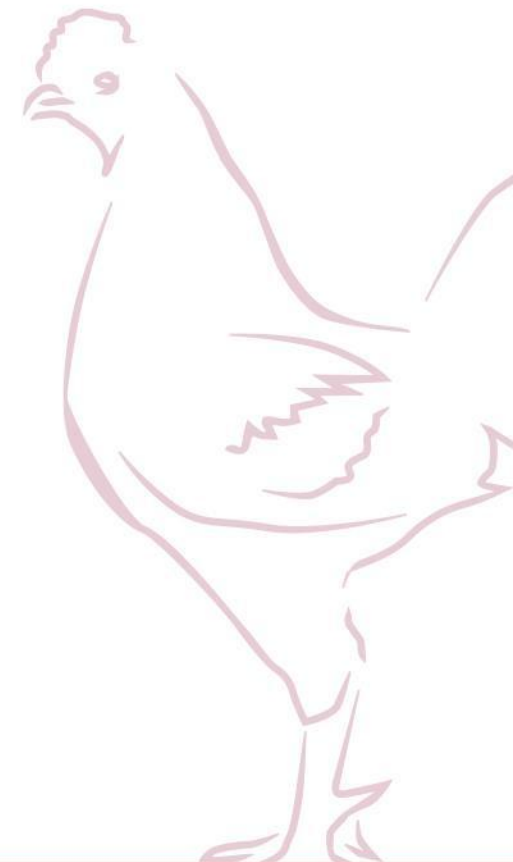


VETERINARY SURGEONS

Independence • Integrity • Innovation



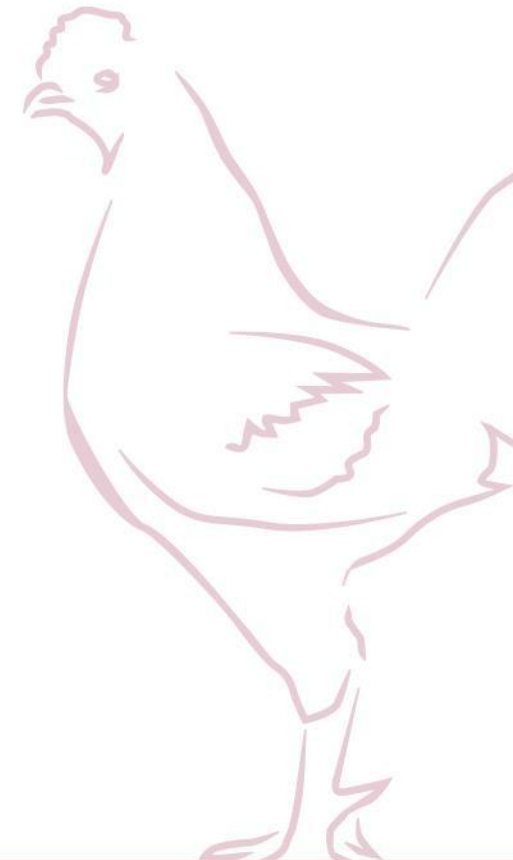
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Signalment & History

- 1 out of 4, 3000 bird FR Org laying polytunnels
- 55 weeks BBT
- 91% production
- CM - 1.1%

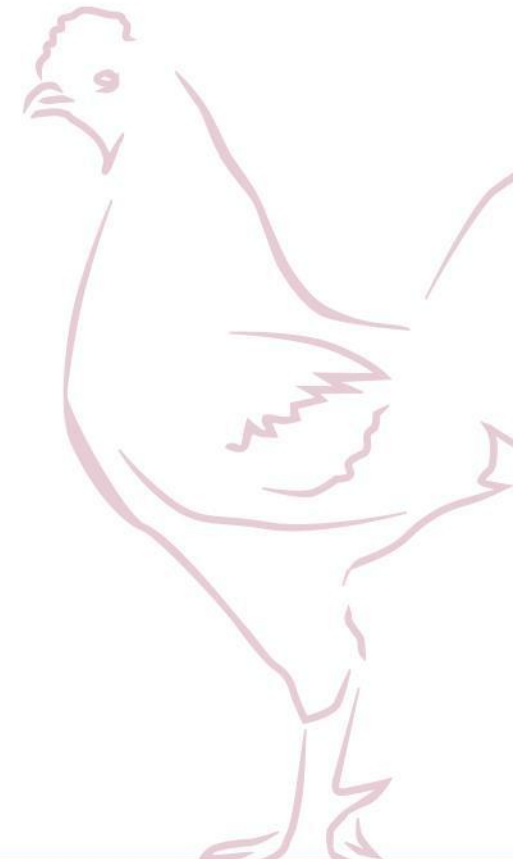
- Site experienced flooding over a week period with House 4 being most severely affected.
- Over the course of a week birds started to show clinically with neurological deficits
- No change in production, feed or water intakes or mortality.
- Only House 4 affected
- Birds were being culled prior to natural death due to severity of clinical progression
- In-lay IBv vaccination q 6 weeks (alternating MSD Nobilis Ma5 & 4-91)



Signalment & History

- Pullet vaccine program

Age	Vaccine	Cover
Day old - hatchery	Innovax ILT, Rispens, Novmunne, Evalon, Ma5	ILT, CVI988, IBD, Eimeria, IBv
5 days	Salmonvac 440	Salmonella
19 days	ND Avishield	ND
25 days	Nobilis IB 4/91	IBv
39 days	ND Avishield	ND
47 days	Salmonvac 440	Salmonella
49 days	IB MM & Ark, Poulvac AE	Ibv, AE
70 days	Nemovac, Poulvac AE	Avian pneumovirus, AE
92 days	Poulvac IB Primer	IBv
95 days	Salmonvac 440	Salmonella
Transfer	Gallimune SE+ST, Gallimune 407	Salmonella, Mulit (ND, EDS, IB, ART)

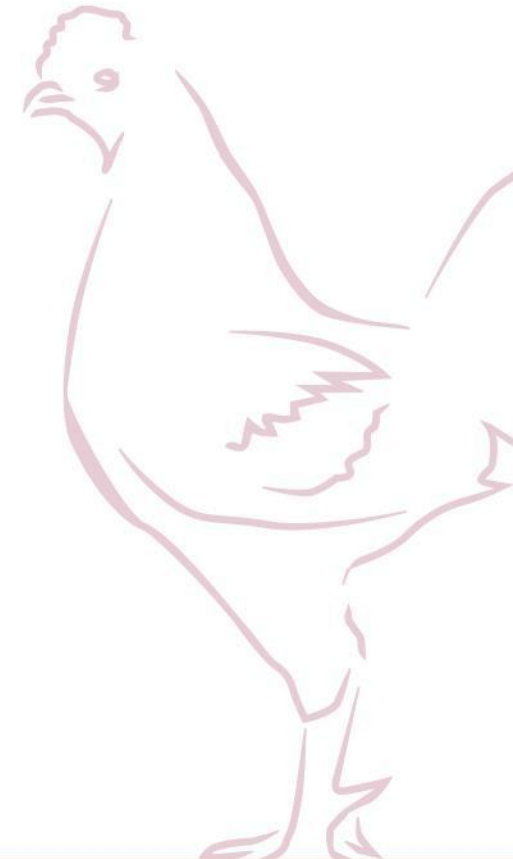




Site visit & PME

- Birds had been kept in since flooding
- 6 birds with clinical signs on house examination
- All other birds showing no abnormalities
- Range of deficits
- Ataxia, torticollis, disorientation, impaired balance – most severe paralysis
- No tremors observed

- No pathological changes observed on PM – no peritonitis, enteritis, reproductive issues
- Malnutrition, weight loss in poorest birds









Differentials

- Immediate thoughts – bacterial meningitis, fungal, inner ear infection, vitamin deficiency (E), mareks, toxin?
- Thought unlikely to be botulism – no mortality
- Notifiables?
 - No production issues, no mortality, other flocks not affected, no petechiations etc.
 - Deemed unlikely at this stage
- Samples –
 - bacterial brain swab,
 - histo samples – brain/spleen/liver/kidney/sciatic nerve
 - FTA brain smears



Cultures

- No fungal growth/listeria
- Bacteria cultured – possible sample contamination?
- After C&S – Phenoxymethylpenicillin @ 58mg/kg for 5 days
- No change
- No increase in numbers – 1-5 per week
- Heavily baled up the scratch

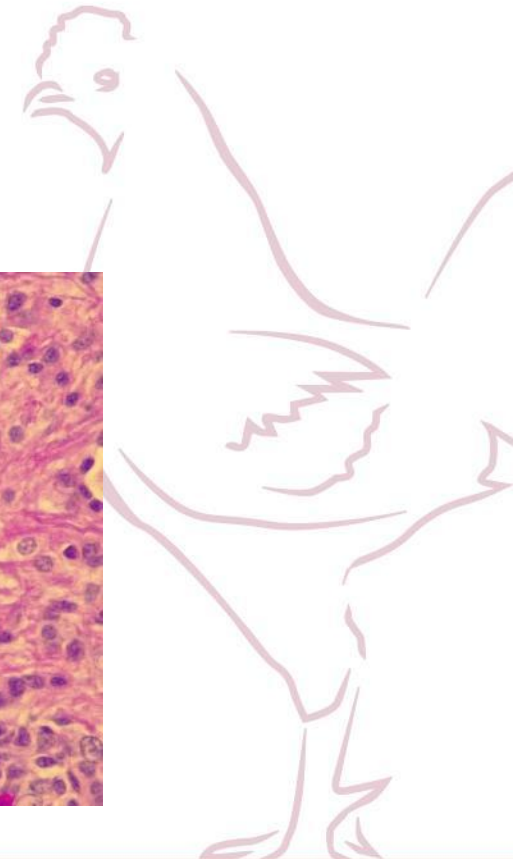
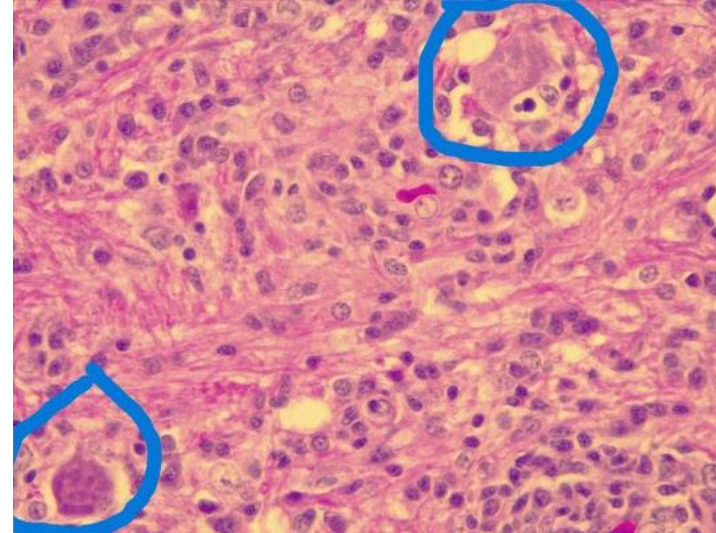
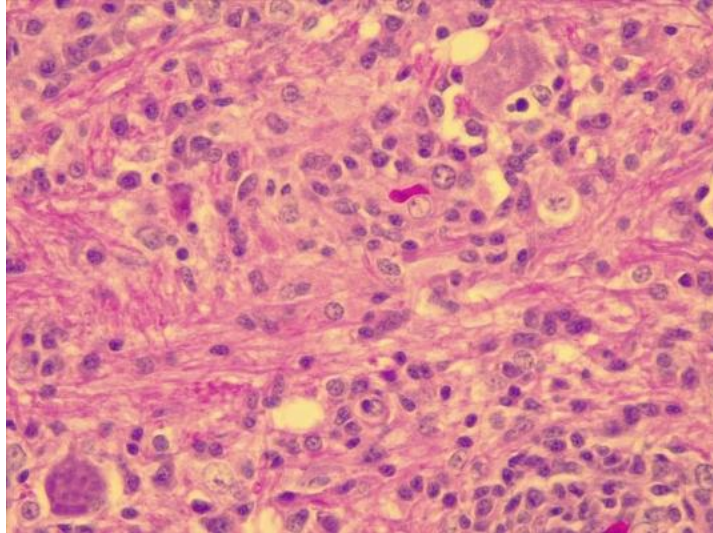
Culture Results		24 Hours		48 Hours	
House	Sample Site	Bacteria Isolated	Growth Description	Bacteria Isolated	Growth Description
4.a	Brain	No Growth	No Growth	No Significant Growth	Scant
4.b	Brain	No Growth	No Growth	Staphylococcus	Moderate
4.b	Brain	No Growth	No Growth	Enterococcus	Light
4.c	Brain	No Growth	No Growth	Staphylococcus	Moderate
4.c	Brain	No Growth	No Growth	Enterococcus	Moderate

Sensitivity Testing

House	Sample Site	Isolate	Amoxicillin	Apramycin	Doxycycline	Enrofloxacin	Lincomycin	Oxytetracycline	Sulfamethoxazole
4.b	Brain	Staphylococcus	S	S	S	S	S	S	S
4.b	Brain	Enterococcus	S	S	S	S	S	S	S
4.c	Brain	Staphylococcus	S	S	S	S	S	R	S
4.c	Brain	Enterococcus	S	S	S	S	S	R	S

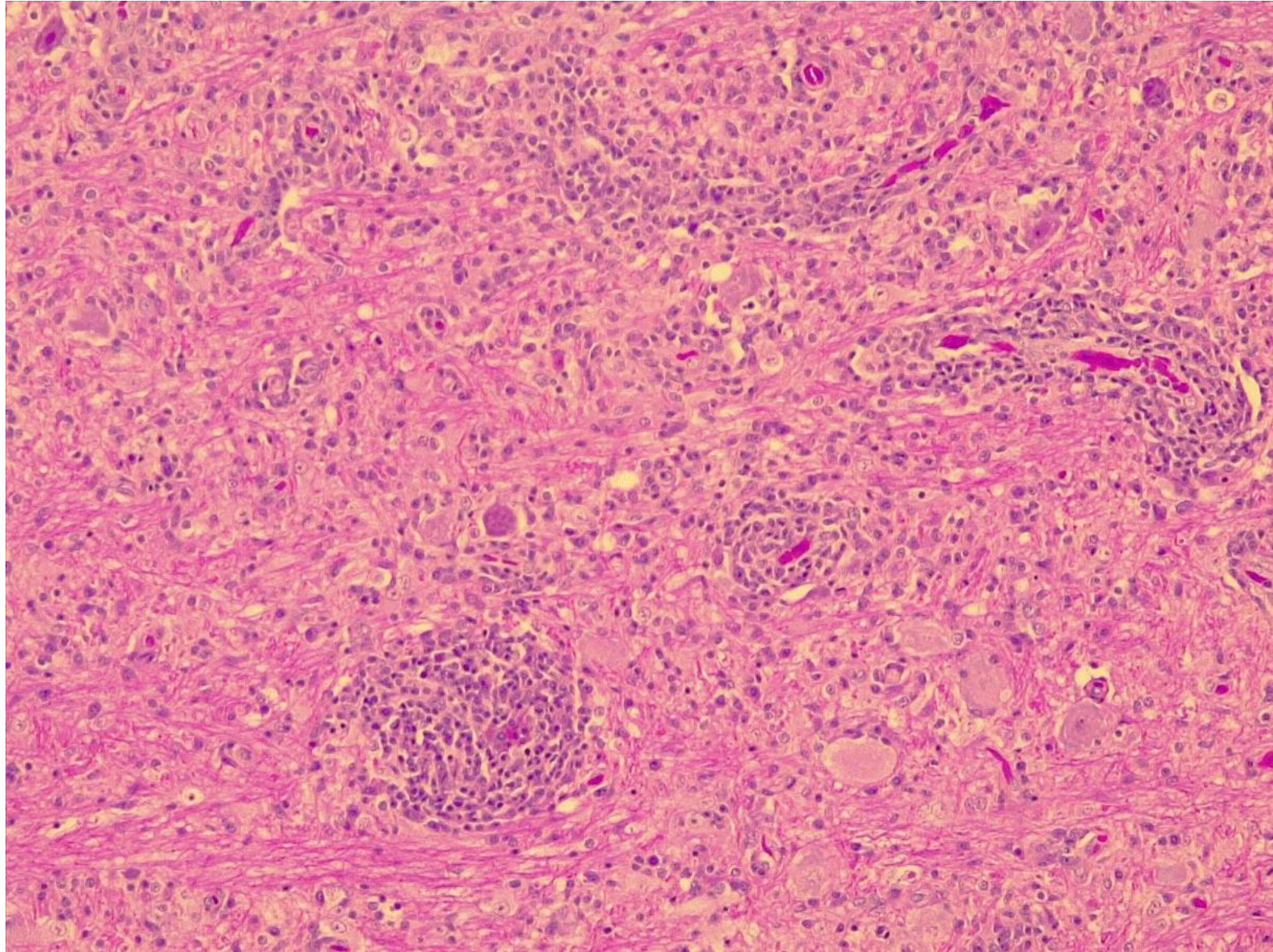
Histology

- No changes on peripheral sciatic – *possibly take more samples – nerve plexus brachial and ischiatic*
- Cerebrum, optic lobe-cerebellum-brain stem – Hand E and Pas Stains:
- Perivascular cuffing and axonal degeneration – brain stem
- Considered with the history - may point at a viral or even protozoal aetiology
- Potential protozoal cysts? – toxoplasmosis, neospora



Histology

- Inflammatory cell infiltrate around cyst?
- Mononuclear cells – monocytes and lymphocytes



Histology

- IHC for Toxo – negative
- IHC for Neospora – negative
- Special Grocott fungal stains – negative
- Re-examination and re-submission of sagittal brain sample
- Pleomorphism of the lymphoid cells detected in a few of the vascular cuffs
- Presence of mitosis, even though no lesions have been found in internal organs and no histological lesions have been detected
- Suggestive of possibility of a field challenge, with a neurological form of Mareks disease in stressed birds with low immunity
- FTA Cards – fresh smears sent to Pirbright for PCR



Viral PCR

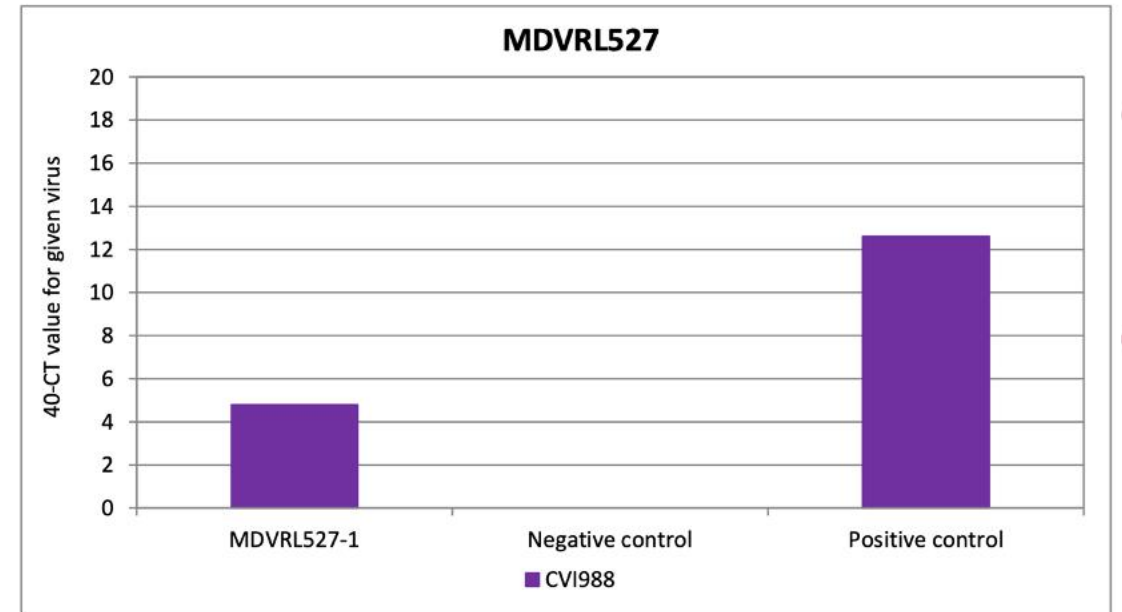
- **vMDV** – negative

We know - pathogenic strains circulating that appear to be mutants/recombinants with the Rispens vaccine

- **CVI988** – positive – low levels

Run a 40-cycle real-time PCR, a sample with a 40-CT value of 0 is negative, and a higher 40-CT value means a higher amount of positivity. Therefore, the amount of CVI988 in this brain sample is relatively low.

- This is consistent with the fact that the bird was CVI988-vaccinated but we know that CVI988 level decreases with age, low is a 'normal' level of CVI988 in the spleen or feathers of a bird of this age. – but brain?? Sue Baigent has never tested brain samples for vaccine virus before, is it normal to find CVI988 in the brain of a vaccinated bird?
- You find high levels of vMDV in brains from some birds with Marek's disease.



Current situation

- Unknown issue
- No new cases – self-resolved after 6-7 weeks
- Flock continuing to lay well – 89% at 72 weeks, CMR 1.7%
- Range dried up and plenty of bales – birds back out

- Looking to send wax-blocks to Vienna for PCR
- Thoughts?
- Sarcocystis
- *Davainea proglottina?*

- Questions?

