History and Signalment

- Adult, male Duroc pig
- Stephens County, GA
- Housed separately from other pigs, but in an adjacent pen
- Appeared normal in the morning
- Found dead the same afternoon
- A full necropsy was performed

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Initial Ancillary Testing

• Immunofluorescent antibody
  – Porcine reproductive and respiratory syndrome virus (PRRSV): negative
  – Swine influenza virus A (SIV): positive

• Cultures
  – Lung: *Streptococcus suis*, gram-negative bacillus and Group D *Streptococcus* sp.
  – Spleen: *Escherichia coli*
Morphologic Diagnosis

• Lung: Bronchointerstitial pneumonia, lymphoplasmacytic and fibrinoneutrophilic, severe, diffuse, subacute, with type II pneumocyte hyperplasia and multinucleated giant cells
Additional Ancillary Testing

• Gram stain: no microorganisms
• Immunohistochemistry
  – PRRSV: positive
  – SIV: negative
  – Porcine circovirus 2 (PCV2): negative
Case Summary

• Porcine Respiratory Disease Complex
• PRRSV = most commonly identified pathogen in the U.S.
• Gold standard
  – Viral isolation
  – Confirmation via fluorescent antibody test (FAT) or IHC to detect viral antigen
## Porcine Respiratory Disease Complex – Major and Minor Pathogens

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Abbreviation</th>
<th>Major Pathogen</th>
<th>Minor Pathogen</th>
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</thead>
<tbody>
<tr>
<td><strong>Viruses</strong></td>
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<tr>
<td>Porcine reproductive &amp; respiratory syndrome</td>
<td>PRRSV</td>
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<tr>
<td>virus</td>
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<tr>
<td>Pseudorabies virus</td>
<td>PRV</td>
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<tr>
<td>Swine Influenza virus</td>
<td>SIV</td>
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<tr>
<td>Paramyxovirus</td>
<td>PMV</td>
<td>*</td>
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<tr>
<td>Porcine circovirus type 2</td>
<td>PCV2</td>
<td>*</td>
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<tr>
<td>Porcine cytomegalovirus</td>
<td>PCMV</td>
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<tr>
<td>Porcine respiratory coronavirus</td>
<td>PRCV</td>
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<tr>
<td>Torque teno sus virus</td>
<td>TTSuV</td>
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<tbody>
<tr>
<td>Actinobacillus pleuropneumoniae</td>
<td>APP</td>
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</tr>
<tr>
<td>Actinobacillus suis</td>
<td>ASUIS</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Bordetella bronchiseptica</td>
<td>BORD</td>
<td>*</td>
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<tr>
<td>Mycoplasma hypopneumoniae</td>
<td>MHYO</td>
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<tr>
<td>Salmonella spp.</td>
<td>SALM</td>
<td>*</td>
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<tr>
<td>Arcanobacterium pyogenes</td>
<td>APYO</td>
<td></td>
<td>*</td>
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<tr>
<td>Hemophilus parasuis</td>
<td>HPS</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Mycoplasma hyorhinus</td>
<td>MHYOR</td>
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</tr>
<tr>
<td>Pasteurella multocida</td>
<td>PMULT</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Streptococcus suis</td>
<td>SSUIS</td>
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</tbody>
</table>
Pathogenesis of PRRSV

- Positive-sense, enveloped RNA virus
- Destruction and decreased function of alveolar macrophages
- Increased susceptibility to secondary infections
Pathology of PRRSV Infection

• Subclinical infection common
• Sporadic disease in sows and neonates
Case Summary

- Multifactorial nature of PRDC
- PRRSV and *Streptococcus suis* co-infection in the lungs
- *E. coli* polyserositis
- Swine Influenza virus A test results
Acknowledgements

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• Liz Rose Iowa State University Veterinary Diagnostic Laboratory
• Histotechnicians at UGA.
References

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