

Porcine Respiratory Disease Workup

- FA – lung – influenza, circovirus, PRCV
- PCR – lung – *M. hyopneumoniae*, PRRS
- IHC – SIV, PRRS, PCV if needed
- Serologic examination – not included in standard package

Respiratory Viral Diseases

- **Circovirus-2** – is full manifestation of Postweaning Multisystemic Wasting Syndrome (PMWS) present in Australia??
- **In Australia (isolated outbreaks)**
 - Menangle virus (paramyxovirus– pulmonary hypoplasia/”butterfly” lungs)
 - Myocarditis virus – cardiac edema, anasarca
- **In US but NOT in Australia**
 - Pseudorabies (Aujeszky’s disease)
 - Swine influenza
 - Porcine reproductive and respiratory syndrome (PRRS)
- **In Asia but NOT in Australia -Nipah virus (henipavirus, subfamily pneumovirinae)**

Pseudorabies (Aujeszky's disease)

- Herpesvirus of swine primarily
- Rhinitis, bronchiolitis, interstitial pneumonia
- Predisposes to bacterial infection
- Production losses
- Abortions, mummification, weak piglets
- Eradication program in USA
- Reservoirs – wild pigs, wildlife
- Dogs can also be affected

Porcine Viral Abortions

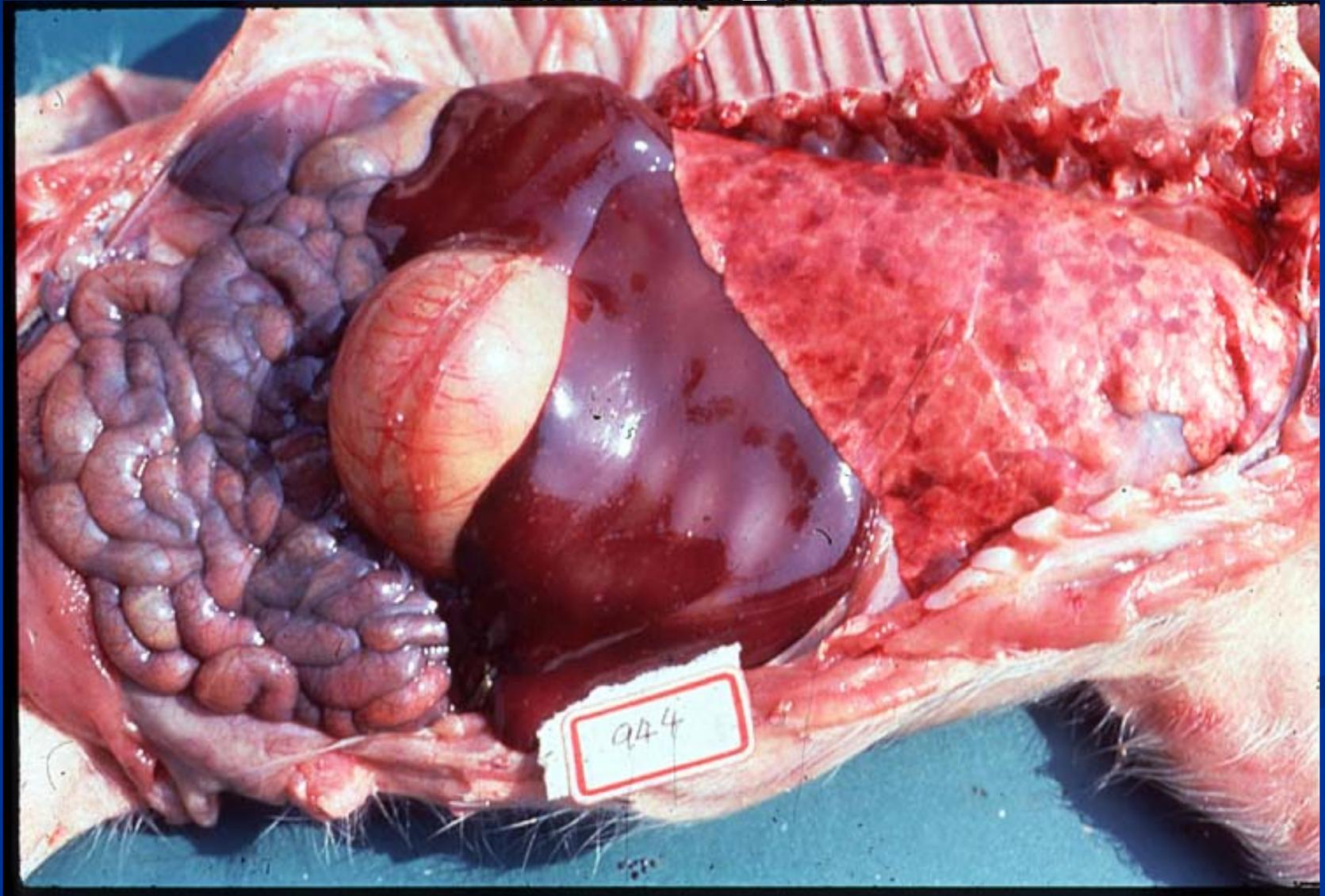


Pseudorabies

- Pathology
 - Typical herpesvirus infection
 - Primary pulmonary– bronchointerstitial pneumonia
 - Other organs – brain, liver – especially if immunosuppressed and in aborted fetuses.
 - Necrosis and intranuclear inclusion bodies

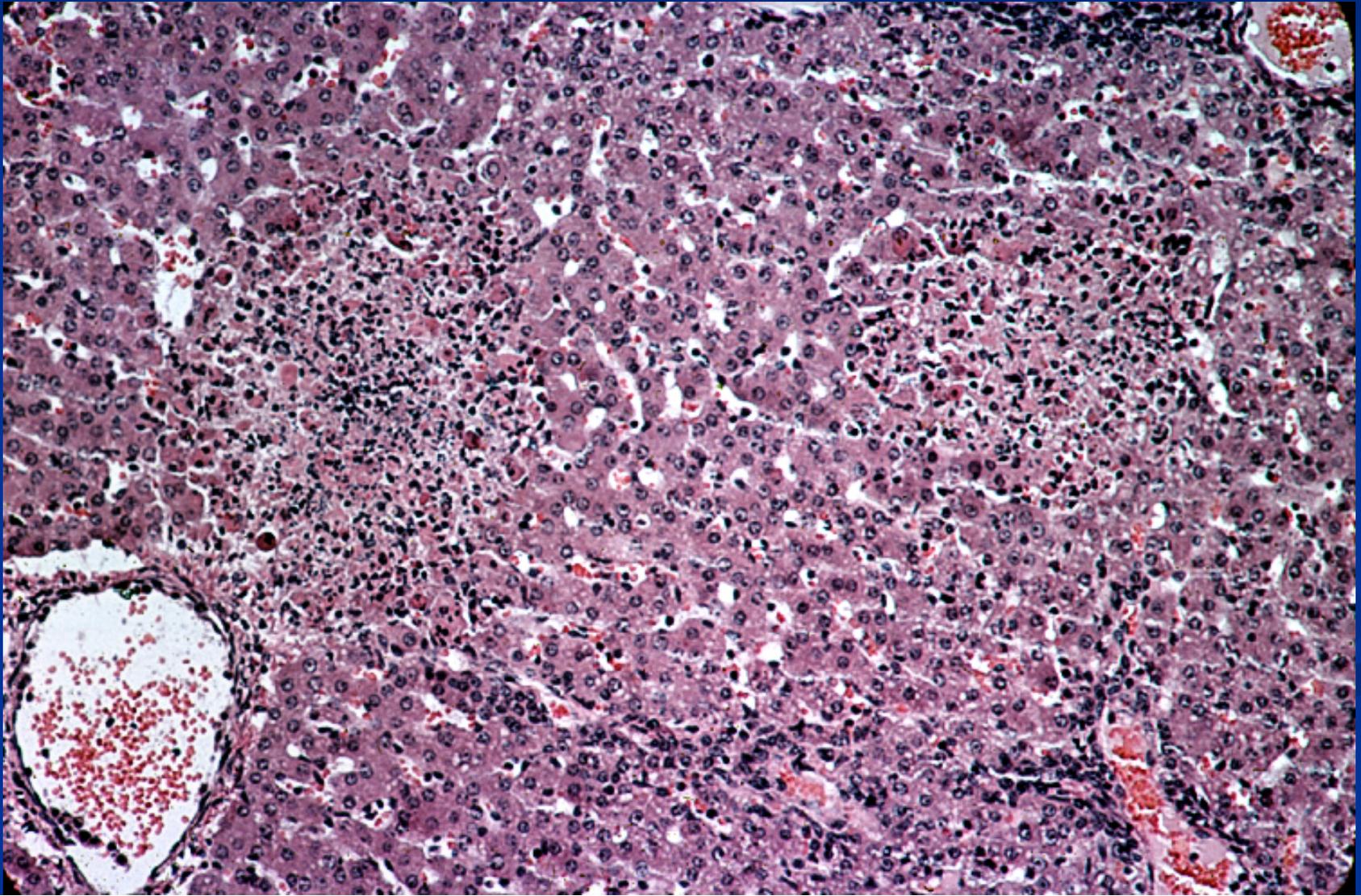
Pseudorabies

Multifocal hepatic necrosis and pulmonary hemorrhages



Pseudorabies – Liver

Multifocal hepatic necrosis



Porcine Respiratory Disease Complex

- Age 2-6 month old pigs
- Clinical disease
 - Decreased growth and feed efficiency
 - Anorexia, fever
 - Cough and dyspnea
- Multiple respiratory pathogens
 - PRRSV, SIV and Mycoplasma sp
 - Porcine circovirus – 2 (PC-2) may play an important role

Postweaning Multisystemic Wasting Syndrome (PMWS)

- New disease – progressive emaciation of weaned pigs
- North America, Europe, New Zealand
- Etiology: porcine circovirus-2 (PC-2) +
- Important role of coinfections in pathogenesis (analysis of midwest US cases)
 - PC-2 alone (2%)
 - PRRS virus, porcine parvovirus (51%)
 - *Mycoplasma hyopneumoniae* (36%)
 - PC-2 antigen high in hyperplastic BALT

Postweaning Multisystemic Wasting Syndrome (PMWS)

- Clinical disease
 - Poor body condition
 - Enlarged lymph nodes
 - Dyspnea
- Pathology
 - Lymphoid depletion
 - Granulomatous lymphadenitis with multinucleated syncytial cells
 - PC-2 antigen in lymphoid tissues – PCR, IHC
 - Interstitial pneumonia
 - Secondary *Pneumocystis carinii* infection possible
 - Basophilic botryoid ICIB in macrophages systemically