

# Avian Salmonellosis

- Bacteria of the genus *Salmonella* have long presented serious challenges to the poultry industry and are responsible for significant health problems in non poultry avian species as well.

## Infections:

- Pullorum Disease
- Fowl Typhoid
- Paratyphoid

# Pullorum Disease

- **Signs in Young birds:**
  - Depression
  - Respiratory distress
  - Loss of appetite
  - White diarrhoea
  - Pot bellied
  - Huddle near heat source
- **Signs in Older birds:**
  - Pale shrunken combs
  - Ruffled feathers
  - Low egg production

# Somnolence



# White Diarrhoea



White pasting around vent



# Huddling



# Ruffled Feathers



# Lesions

- Grayish whitish nodes in heart and gizzard walls.
- Grayish whitish milliary necrosis in liver.
- Ureters are often filled with urates.
- Unabsorbed yolk sacs.
- Enlarged spleen.
- Cheesy material in ceca.
- Peritonitis.
- Ascites.
- Hemorrhagic ovarian follicles.

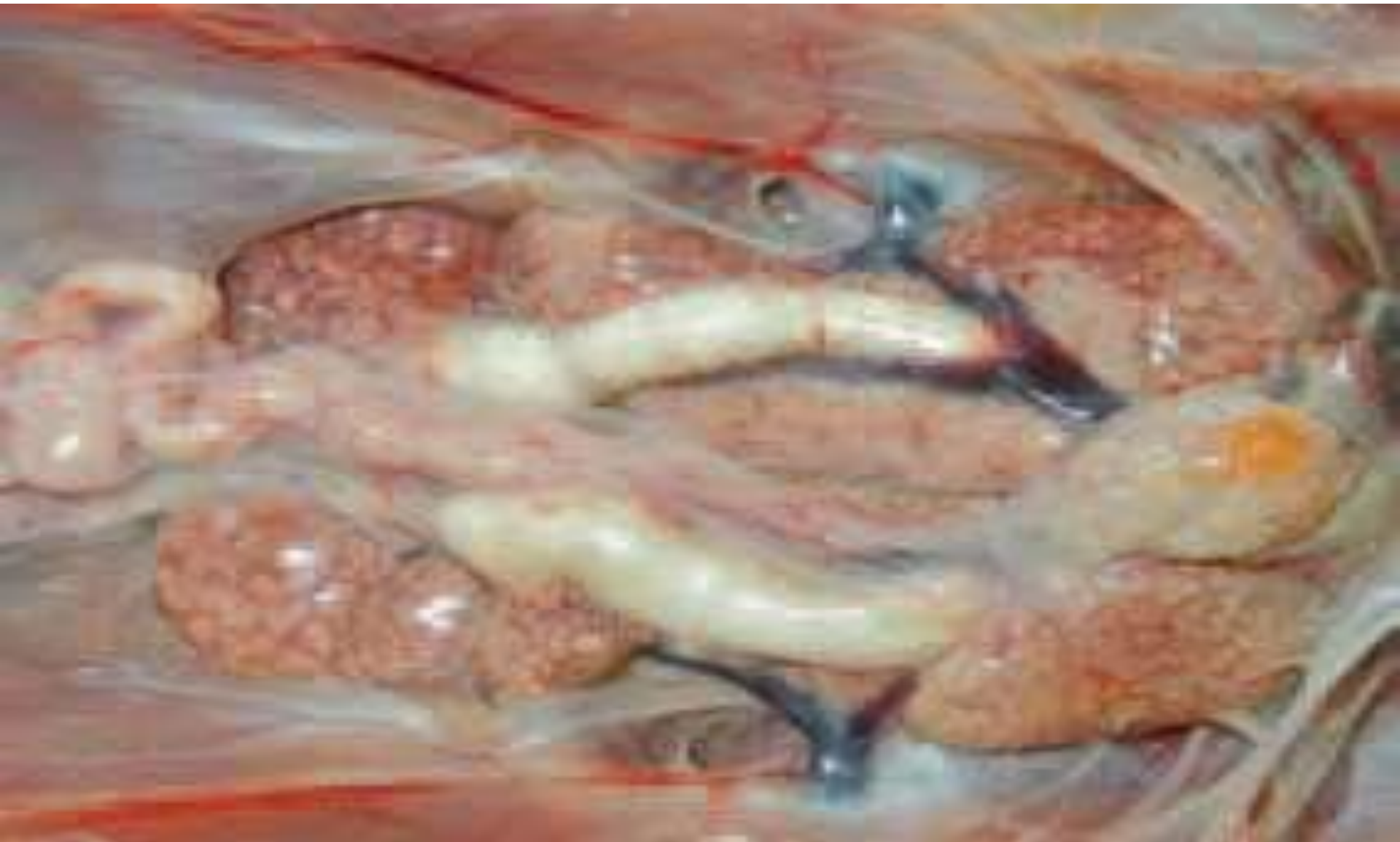
# Grayish whitish nodes in heart and gizzard walls



# Grayish whitish milliary necrosis in liver



Ureters are often filled with urates



# Unabsorbed yolk sacs



# Enlarged spleen



# Peritonitis



# Ascites



# Hemorrhagic ovarian follicles



# Fowl Typhoid

- Fowl typhoid is an infectious disease, primarily of chickens and turkeys, with many of the clinical and epidemiologic features and lesions that occur with pullorum disease.

- **Signs**

- Signs of fowl typhoid and pullorum disease are similar in birds less than approximately 1 month old.

- Semimature and mature birds with fowl typhoid often have pale head parts (comb, wattles, face), shrunken combs and wattles.

- Diarrhoea(bright yellow splashes).

# Somnolence



# Pale comb and wattles



# Huddling



# Diarrhoea



White pasting around vent



# Lesions (acute+chronic)

- A characteristic lesion for acute fowl typhoid in adult birds is the enlarged and bronze greenish tint of liver.
  - In some instances, the enlarged liver is mottled with multiple milliary necrosis.
  - The spleen is 2-3 times bigger, sometimes with greyish-whitish nodules protruding on the surface, representing hyperplastic follicles.
  -
- Enteri Myocardial  
necrosis.

- Lungs acquire a characteristic brown colour.
- Ovaries are affected by inflammatory and degenerative changes.
- Frequently, affected follicles are deformed and appear like thick pendulating masses.
- Fibrinous adhesive peritonitis

# Bronzed Greenish liver



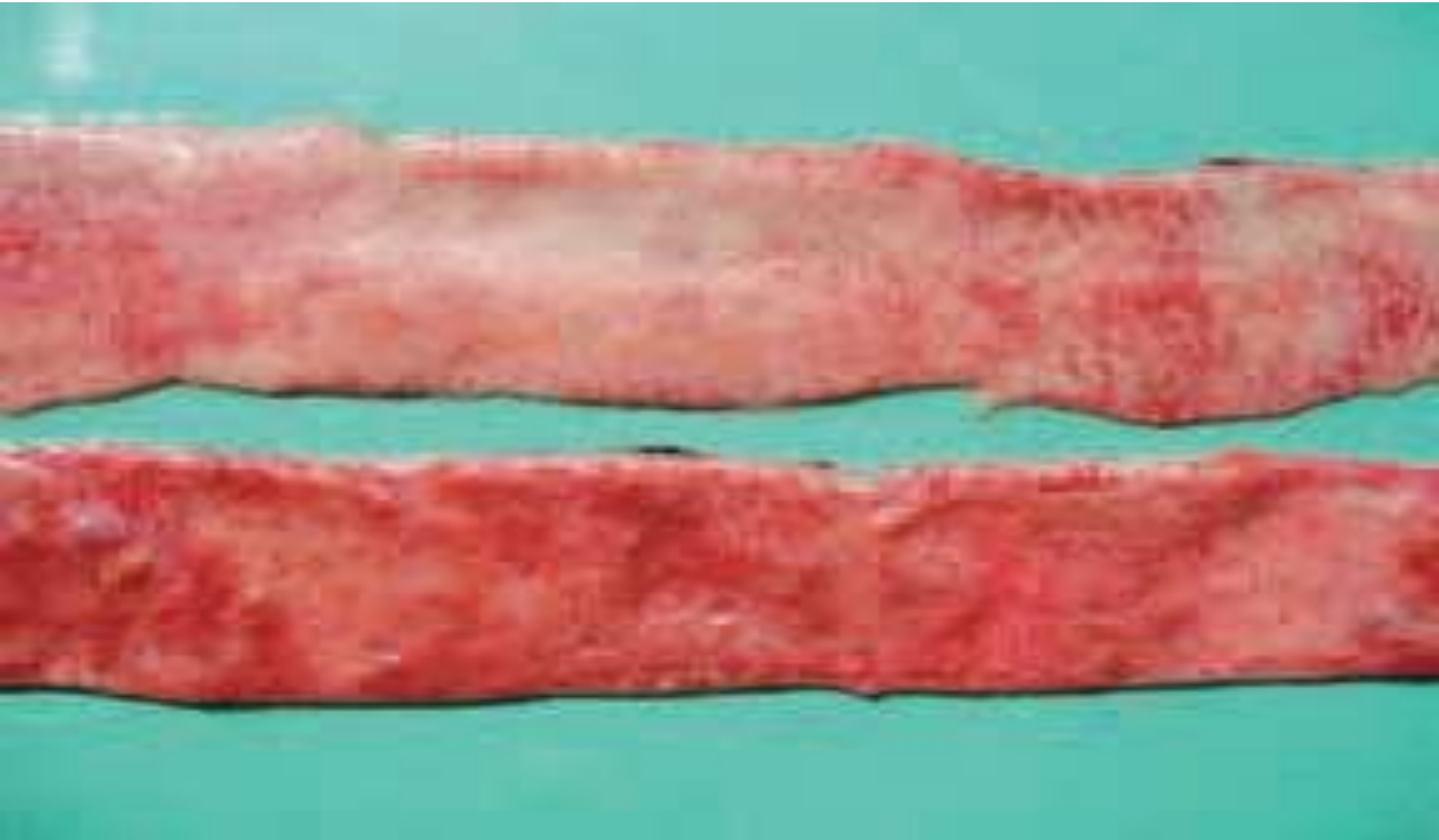
# Enlarged liver mottled necrosis



2-3 times enlarged spleen



# Enteritis



# Myocardial necrosis



# Brownish lungs



# Affected ovaries



# Affected follicles



# Fibrinous adhesive peritonitis



# Paratyphoid

- Fowl paratyphoid is an acute or chronic disease in domestic fowl and many other avian or mammalian species, caused by some motile Salmonella serotypes that are not host-specific. The highest morbidity and death rates are usually observed during the first 2 weeks after hatching.

- **Signs**

- Drowsiness.
- Ruffled eyes
- Diarrhoea
- Pasting around vent
- Subcutaneous oedemas in the region of the neck.
- Huddling near heat source

# Huddling



# Drowsiness



White pasting around vent



# Diarrhoea



# Lesions

- Focal necrosis in liver
- Inflammatory fibrinous exudates in Caeca.
- Unabsorbed yolk sacs
- In the liver, hyperaemia, sub capsular haemorrhages and dystrophy are detected.
- Pericarditis, and per hepatitis is detected.
- Inflamed footpad.

# Focal necrosis in liver



# Fibrinous exudates in Caeca



# Unabsorbed yolk sacs



# Hyperemia in liver



# Pericarditis and Perihapatitis



# Inflammation of footpad



# References

- Avian Disease Manual by AAAP; 6<sup>th</sup> Edition, 2006.
- A color Atlas of Poultry Diseases.
- [WWW.thepoultrysite.com](http://WWW.thepoultrysite.com)