

Etiology of NE

- Main cause: *Clostridium perfringens* types A and C
 - necrosis of the intestinal mucosa is caused by toxins (alpha, NetB and/or probably others)
- Predisposing factors:
 - intestinal mucosal damage caused by high fiber and/or high protein diet, coccidiosis, ascaridia migration, hemorrhagic enteritis (HE) in turkeys, and severe salmonella infections
 - high energy/high protein rations, stress
 - abrupt changes in diet and least cost formulation where mucinogenic cereal grains such as wheat and barley are substituted for corn
 - immunosuppression from Infectious Bursal Disease (IBD) or Hemorrhagic Enteritis (HE)

Clinical Signs of NE

- Clinical signs are mostly non-specific such as anorexia, severe depression, reluctance to move, and ruffled feathers
- Rapid increase in mortality is commonly observed

Gross Lesions of NE

- Distended and *friable* mid-small intestine, ceca can be involved occasionally
- Foul-smelling brown-colored intestinal contents
- Intestinal mucosa covered by brownish diphtheritic membrane that looks like a “Terri-cloth” (referred to in older literature as a “Turkish towel” appearance)
- Multifocal, well circumscribed, tan colored lesions in the liver; these lesions are pinpoint and larger, often coalescing, in chickens and turkeys.
- Intestine can be distended with increased mucus in acute stages and in subclinical cases of NE

Microscopic Lesions of NE

- Characterized primarily by severe necrosis of the intestinal mucosa with an abundance of fibrin mixed with cellular debris
- Occasionally deep ulcers can be seen
- Numerous large Gram-positive usually bacilli typically lacking a terminal spore are often observed attached to the tips of the villi or in the lamina propria mixed with cellular debris



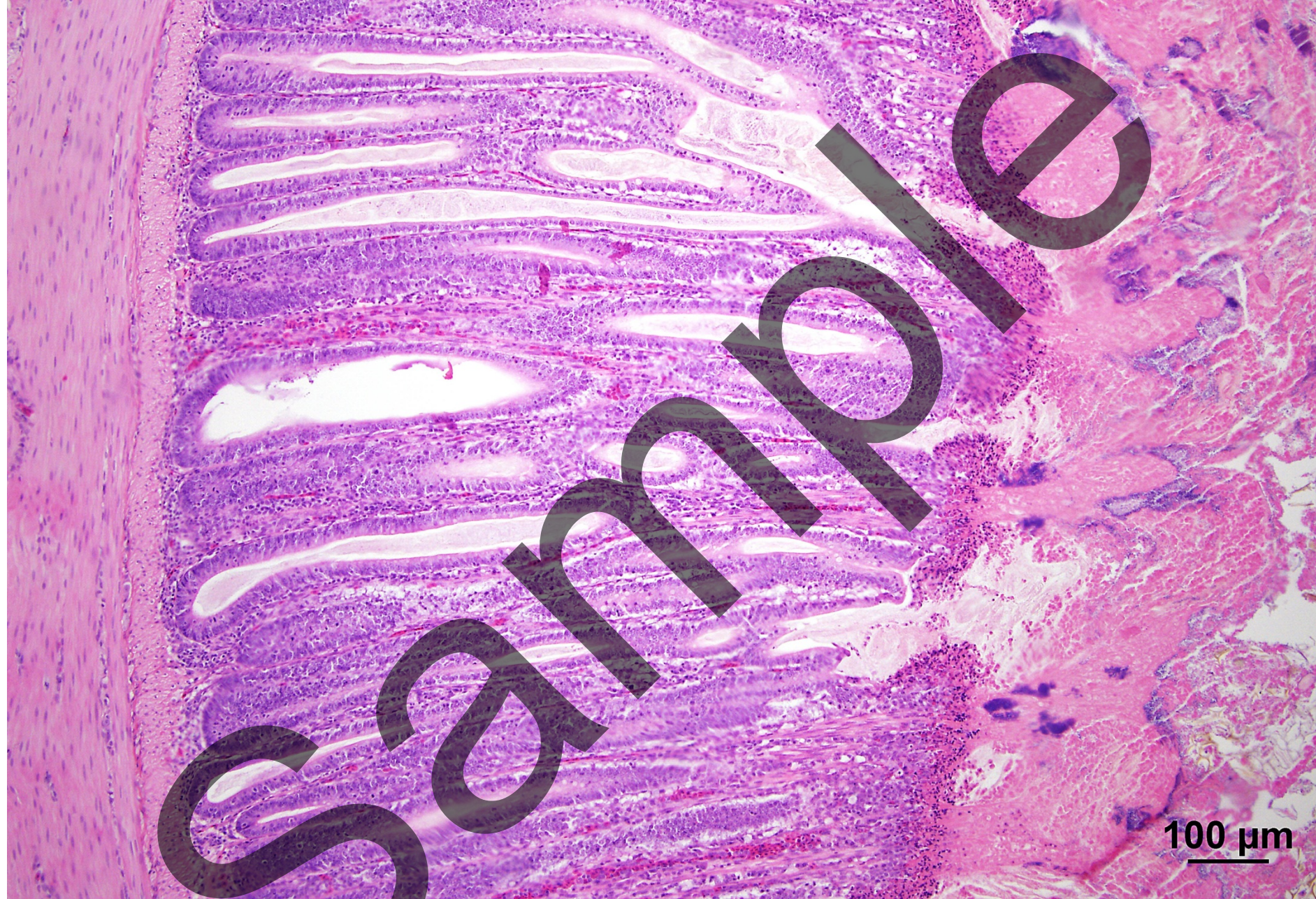
Slide 3. Necrotic Enteritis – small intestine, chicken



Slide 4. Necrotic Enteritis – turkey intestines



Slide 5. Necrotic Enteritis – turkey intestines



100 μm

Slide 6. Necrotic Enteritis – H&E section; Chicken intestine