

REPRODUCTIVE DISEASES OF THE BACKYARD HEN

Cheryl B. Greenacre, DVM, Dip. ABVP (Avian), Dip. ABVP (Exotic Companion Mammal)

Abstract

Reproductive diseases commonly occur in backyard hens, and the underlying cause is usually different from that of commercial-production hens. Because backyard hens typically live longer, are usually provided an adequate diet, and have relatively more space than commercial hens, the most common causes of their reproductive disease include neoplasia, egg-related peritonitis, persistent right oviduct, and old age. Conversely, other reproductive diseases including vent trauma and depletion of calcium are rarely diagnosed. Copyright 2015 Published by Elsevier Inc.

Key words: backyard poultry; hen; reproductive disease; neoplasia; egg-related peritonitis; persistent right oviduct

Backyard hens are brought to avian veterinarians more frequently now than ever before. In response, veterinarians are seeking to increase their knowledge and level of care for backyard poultry. The veterinarian should first refer to one of the many general avian textbooks that are available to gain avian knowledge regarding general husbandry and care, handling, approach to medicine and surgery, evaluation of radiographs, and anatomy and physiology.¹⁻⁵ Most backyard poultry are initially maintained for their ability to lay eggs, consequently female reproductive problems are a common presenting complaint. The following is an overview of how to identify and treat some of the most commonly encountered female reproductive diseases of backyard poultry.

EGG-RELATED COELOMITIS

Egg-related coelomitis describes an acute or chronic, usually diffuse, coelomitis involving egg yolk, egg albumin, and/or eggshell occurring with or without bacterial infection (Fig. 1A and B). The older term “egg yolk peritonitis” has fallen out of favor as birds have a coelom rather than a peritoneum, and the offending substance can be not just the yolk of the egg but other parts of the egg. It is common for chickens to have some degree of egg-related coelomitis, and mild cases are commonly encountered at necropsy in production hens. Generally, chickens tolerate mild peritonitis better than parrots. Causes usually involve retrograde movement of shelled or shell-less eggs

from the oviduct back into the coelomic cavity because of oviductal bacterial infection, oviductal impaction, or abnormal confirmation of the oviduct. Heavy-production hens or those with inadequate calcium in their diet can have calcium depletion and uterine inertia leading to retrograde flow of egg material. Bacterial infections commonly involve *Escherichia coli* migrating up the oviduct from the vent.

Clinical signs of egg-related coelomitis can be obvious, such as a sudden decrease or cessation in egg laying, can be nonspecific, or can appear unrelated to the reproductive tract such as lethargy, partial anorexia, weight loss, and even lameness (Fig. 2). Physical examination findings can include

From the Department of Small Animal Clinical Sciences, Avian and Zoological Medicine Service, College of Veterinary Medicine, University of Tennessee, Knoxville, TN USA

Address correspondence to: Cheryl B. Greenacre, DVM, Dip. ABVP (Avian), Dip. ABVP (Exotic Companion Mammal), Department of Small Animal Clinical Sciences, Avian and Zoological Medicine Service, College of Veterinary Medicine, University of Tennessee, 2407 River Drive, C-247, Knoxville, TN 37996. E-mail: cgreenac@utk.edu.

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a bird with cachexia, increased respiratory and heart rates, crackles in the lower respiratory tract, a large doughy coelomic cavity, fluctuant coelomic fluid, and an undiagnosed lameness. Lameness may be caused by attempting to walk with a significantly distended coelom, weakness, and/or pain.

Diagnosis of egg-related coelomitis is based on typical clinical signs and radiographic images. Endoscopy is possible but may be hampered or risky owing to coelomic fluid and limited air sac space. Radiographically, a large variety of findings can be observed such as the ground-glass appearance of coelomic fluid, multiple or single-shelled or shell-less eggs inside or outside the oviduct, herniation of the abdominal musculature or an expanded coelomic wall, thickened air sacs, and masses in the caudal thoracic and abdominal air sac area. Lateral and ventrodorsal radiographic images taken with the patient under general anesthesia are recommended (Fig. 3). If the goal of radiographic imaging is simply to determine if an egg (or eggs) is present or not, then having the bird remain in a standing position for the procedure is adequate (Figs. 4 and 5). A lateral beam across the table is used for a standing lateral view. Fluid obtained for analysis by coelomocentesis may be helpful and can also be used for bacterial culture. Ultrasonography can be used to determine if the eggs are free within the coelomic cavity or positioned in the oviduct (Fig. 6). A complete blood count and plasma chemistry profile, including total and ionized calcium, can be performed to determine the degree of infection or inflammation, amount of dehydration, liver or kidney disease, and/or calcium status.

Recommended treatment for egg-related coelomitis can involve fluid and antibiotic therapy, nonsteroidal anti-inflammatory drugs, butorphanol, and/or surgery. Follow label instructions for drug therapy, or if used "off label," then consult www.farad.org regarding extralabel drug use, as there may be an acceptable withdrawal time. Never use a fluoroquinolone (e.g., enrofloxacin), cephalosporin, chloramphenicol, or metronidazole, as these drugs are prohibited for use in any food animal even if that individual will not be used for food. The reason these drugs are prohibited from any use is to prevent the formation of antibiotic-resistant *Campylobacter* spp., not necessarily owing to concern over withdrawal times.

Surgery involves sterile technique and adequate monitoring of the patient while under anesthesia (Figs. 7-10). The difficult decision in mild cases of

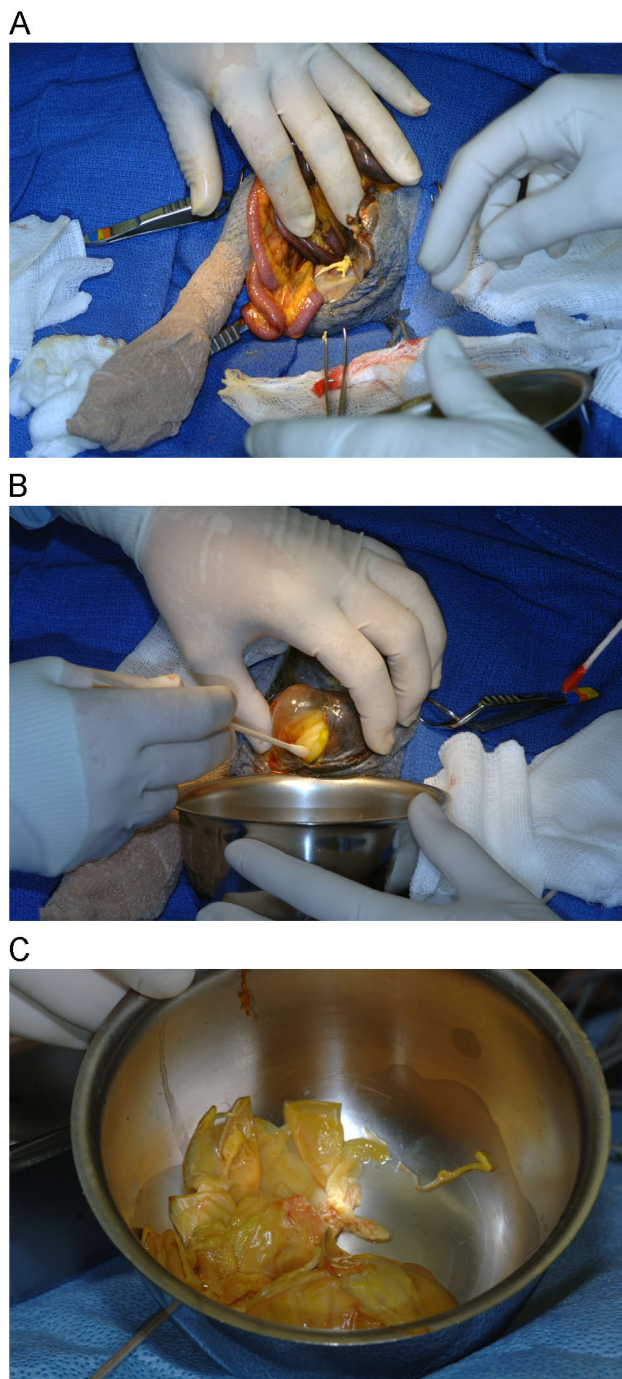


FIGURE 1. (A and B) Intraoperative photographs of a 1-year-old white bantam Silkie hen with egg-related coelomitis. The forceps are holding egg-related material from her coelom. (C) A total of 3 whole soft shelled eggs and 3 egg remnants that were loose within the coelomic cavity (not in the oviduct) were removed.

egg-related coelomitis is whether surgery will provide a better outcome than antibiotics and analgesic therapy alone. Generally, the more severe the egg-related coelomitis, the more likely the surgery will provide a better outcome than

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