Focus: Salmonella Down Under

Salmonella Bacteria, which typically reside in chicken intestinal tracts, may contaminate meat during processing. Although commercial chicken meat and egg-laying flocks are monitored, there is little screening of backyard chickens. In this study, investigators collected fecal samples from 575 backyard hens from 30 different flocks near Adelaide, South Australia. Samples from 5 hens from each premise were pooled for sampling, resulting in 115 tested pools. Salmonella species were serotyped, and virulence genes and antimicrobial resistance patterns were determined by PCR and the disk diffusion method, respectively. Of the tested flocks, 4 tested positive for Salmonella species, with an overall estimated prevalence of 10.4% (0.02% at the individual bird level). Isolated serovars included S Agona, S subsp 2 ser 21:z10:z6 (Wandsbek), and S Bovis-morificans. S subsp 2 ser 21:z10:z6 (Wandsbek)—resistant to ampicillin and cephalothin and displaying intermediate resistance to florfenicol—demonstrated the highest antibiotic resistance. S Agona isolates had intermediate resistance to ampicillin; S Bovismorificans were susceptible to all antibiotics tested. All Salmonella spp isolates tested positive for known virulence factors; however, the pathogenicity (determined by a combination of virulence factors and host susceptibility) was not established. The authors concluded that the increased prevalence of Salmonella species in backyard chickens could pose an increased risk for salmonellosis in humans, though further investigation is recommended.

Commentary
Backyard chickens have increased in popularity, and potential zoonotic disease is a significant public health concern. Although it is well-known that chickens can carry Salmonella spp bacteria, authors found a higher-than-expected isolation rate. The study was conducted in Australia, however, and demographic factors and antibiotic therapies should be considered. Most important is the identification of known human pathogenic strains and the overall infection rate that indicated potential for zoonotic transmission. The authors did not provide a description of how statistics were done which makes findings difficult to interpret and should thus be utilized cautiously. The potential for zoonotic Salmonella spp transmission should be considered before keeping backyard chickens.—Anthony Pilny, DVM, DABVP

Source

Analysis: Fibrosarcomas in Dogs

Oral fibrosarcomas in dogs are locally invasive and likely to re-occur after conservative excision. A retrospective study of 65 cases found that median age of onset was 8 years (range, 1.5 to 13 years), and golden retrievers (n = 22) were the most commonly represented breed. Tumor site was more often the maxilla (n = 44) compared to the mandible (n = 17) and oral/palatine (n = 4) locations. Dogs with tumors on the maxilla had a longer median survival time (MST) of 488 days compared to dogs with mandibular (301 days) or palatine or oral (40 days) tumors. The median number of days of progression-free survival (PFS) was longest in dogs with tumors on the maxilla (254 days). When palatine or oral tumors were removed from calculations, there was no difference in PFS between maxillary and mandibular tumors. MST and PFS of dogs treated only with surgery were 249 days and 138 days, respectively. MST and PFS for dogs receiving both surgery and radiation therapy were 505 days and 301 days, respectively.

Commentary
Fibrosarcomas, the third most common oral tumor in dogs, commonly occur in the maxillae of the golden retriever. Locally aggressive, with a low metastatic rate, they are best managed with early, aggressive surgery and radiation therapy. A higher grade may be predictive of poor outcome; however, there exists a variant known as high-low (histologically low-grade) that acts aggressively while looking benign on histopathology. Outcome for a maxillary location was surprisingly better than in the mandible—perhaps the latter population had higher-stage disease. With many limitations because of the retrospective nature of the paper, low power, lack of full staging, and many different therapies employed, further conclusions are not possible.—Cecilia Robat, DVM, DACVIM (Oncology)

Source