



Litter Impaction of the Lower Intestinal Tract in Male Broiler Breeders

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SUMMARY

Increased mortality occurred among males in a house of 26-week-old broiler breeders. A severe impaction of the lower intestinal tract because of litter was found on necropsy in two of 3 recently dead cockerels. Litter could be seen in the markedly distended vent of the most affected bird. Both birds had extensive urate and fecal soiling of feathers around the vent. Impaction of the lower intestinal tract in these birds most likely resulted from eating litter due to a change in feeding regimen.

CASE HISTORY

A flock of approximately 25,000 broiler breeders 26 wks of age on a breeder farm in central North Carolina were evaluated. Mortality in one of two houses was increased, especially among the cockerels. All dead and moribund birds on the day the flock was evaluated were necropsied. Two of 3 dead males from one house had impaction of the lower intestinal tract due to litter. No other significant lesions were observed. Necropsy results of these two birds are described.

Following transfer to the breeding house, the males were allowed access to female feeders. Within a week after transfer, grills were attached to the female feeders to exclude the larger male birds. Male feeders were located in the central littered floor area to encourage cockerels to stay in the breeding area and not on the raised slats. Additionally, cockerels were feed restricted in order to maintain optimum body weight and fertility. All birds were on a once-a-day feeding schedule. Female feeders were turned on at approximately 6:10 am and male feeders 5 minutes later. Chickens ate until food was depleted (3-4 hours for the female feeders and 1 hour for the male feeders).

GROSS PATHOLOGY

Externally, Bird 1 was dehydrated (dry skin, dark shanks, elevated fold of skin along shanks, sunken eyes) and based on its body condition, it was considered to be significantly underweight. Compacted wet litter was visible in the markedly distended vent. Urates and feces were adhered to feathers around the vent. Internally, the cloaca and rectum were firm and markedly distended with litter and feces. Feces and intestinal contents were observed in the body cavity due to a ruptured small intestine. The affected area of the small intestine was approximately 2 cm and dark, black-red in color (Fig. 1). No food was present in the crop, proventriculus, or ventriculus. Other visceral tissues were normal except for the heart, which lacked tone and fat deposits.

Necropsy findings in Bird 2 were similar to those in bird 1 except the intestinal tract had not ruptured and a large amount of gas was present in the small intestine (Fig. 2). The distended large intestine was impacted with litter distally and impacted with a mixture of litter and feces proximally (Fig. 3).



Fig. 1. Bird 1, 26 wk male broiler breeder. Packed litter and feces markedly distend the cloaca and rectum. Litter is visible in the distended vent and urates can be seen adhering to surrounding feathers. Body cavity is obscured by intestinal contents from a ruptured small intestine.



Fig. 2. Bird 2, 26 wk male broiler breeder. Rectum and cloaca are distended. Small intestine is filled with gas. Feces and urates soil feathers around the vent.



Fig. 3. Bird 2, 26 wk male broiler breeder. Opened distended large intestine reveals that it is impacted with litter distally and has mixed litter and feces proximally.

DISCUSSION

Digestive tract impaction in poultry from litter eating has been reported in the crop, gizzard, and proventriculus. Litter impaction in commercial chickens is documented but rare. This case was unique in that litter impaction affected young adult broiler breeder males and the location of the impaction was in the lower intestinal tract, specifically the rectum and cloaca.

Litter impaction may be caused by several factors including nutrient deficiency, parasitism, systemic toxins, overcrowding, and boredom. The flock did not show clinical or postmortem evidence of deficiencies, toxicity, or parasitism. The birds were also not overcrowded. Additionally, hens necropsied were not affected, suggesting a cause specific to males. Therefore we feel the condition most likely resulted from the inability of some male birds to adapt to the changes in feeder access. The inability to access feed could be due to dominance and competition among the male birds. It also could be due to confusion because of the change in location of available feed.

It is unknown why the impaction occurred in the lower intestinal tract. At necropsy, the birds were dehydrated, but whether this was involved in causing the impaction or occurred subsequent to the impaction could not be determined. Further investigation into lower intestinal litter impaction among young broiler breeders is needed to determine the prevalence of this condition and its significance as a cause of male losses. If significant, evaluation of feeding routine changes and potential treatment options could be helpful in prevention and control of lower intestinal impaction in male broiler breeders.

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