PROVENTRICULUS AND GIZZARD IMPACTION IN EMU BIRDS

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The emu farming is required more information on their husbandry and medical management for both producers and veterinarians. The present study describes impaction of proventricular - gizzard in emu chicks caused by ingestion of foreign materials.

METHODS AND MATERIALS

The study was carried out at Emu Research Unit, TANUVAS – Regional Research Centre, Pudukkottai, Tamil Nadu during the year 2013. From hatch to 2 weeks of age, emu chicks were reared in the brooder house. After 2 weeks of age, emu chicks were housed in communal pen with sand flooring upto 1 year of age. No bedding materials were used in the house. The chicks were offered feed and water *ad libitum.* The emu chicks were fed with concentrate feed containing 20 per cent crude protein, 2700 Kcal metabolizable energy. All the emu chicks were immunized against Ranikhet disease. Emu chicks affected with impaction were examined and clinical signs were recorded. They were treated with mineral oil at the dose rate of 3 to 6 ml/kg body weight. Post mortem examination was carried out in died emu chicks. Mortality in the chicks was recorded and analysed.

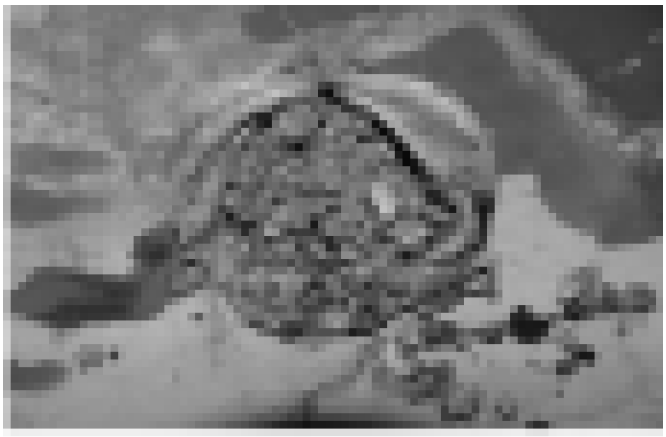

Fig. 1. Gizzard of emu packed with a large amount of sand and small stones

RESULTS AND DISCUSSION

Totally six emu chicks were affected and started to show signs from 35 days of age. The chicks showed anorexia, lethargy, constipation, dehydration and weight loss. They were sitting in a hunch back position in the corner of the pen. The proventricular area was enlarged and felt firm but not gritty. Among the six chicks affected, two chicks were responded for the treatment and four chicks were died after 12 days of impaction. Post mortem examination revealed that the carcass was dehydrated and skinny. Gizzard was enlarged and occupied two third of the abdomen. Intestines were hyperaemic and the liver was pale. While incising the gizzard,

Fig. 2. Ulcers noticed in gizzard due to erosions caused by sharp edges of stones

it was hard, firm and tough enough to feel. The proventriculus and gizzard were packed with a large amount of sand and small stones and a very little amount of ingesta (Fig. 1). There were also ulcers present in the gizzard which may be due to erosions caused by sharp edges of the stone (Fig. 2). Also, excess fibrous material was observed in the small intestine, and intussusception was found in two chicks.

Ratite chicks required grit in the gizzard to necessitate in the digestion of feed. Nevertheless, the chicks could occasionally impact on sand. Because of keen eye sight, natural inquisitiveness and willingness to ingest anything that fits into their mouth, emu chicks were prone to impactions.

Stressors, such as movement of birds to a new enclosure, stale air, noise, lack of enough space, overcrowding and poor feed were contributed to the incidence of impaction (Wade, 1992). According to Speer (2006), impactions of the proventriculus are more common in the ostrich and are decreasingly less likely in rhea, emu and cassowary respectively. Samson (1997) classified the impactions into acute (weak birds in a few days) or chronic (weak birds in weeks to months); hard (caused by hard materials such as rocks and sand) or soft (caused by fibrous materials such as grass) and partial or complete. In the present case large amount of sand and pebbles could be the cause of occlusion of the passage in proventriculus and gizzard and it is of hard type of impaction which is similar in ostriches observed earlier by Sancak and Paracikoglu (2005).

According to Nagarajan *et al.* (2011), the overfilled stomach with undigested sand and stone materials reduces the peristaltic movement and results in loss of appetite, inanition, dehydration, emaciation and death. In the present study, the intestines were hyperaemic and had a dark tinged coloured layer of ingesta with sand which are in agreement with Zakeri and Kashefi, (2011). Impaction of the gizzard observed in the present study was similar to that reported in other ratite species and confirmed that this disease can affect emu chicks also raised in captivity. The finding of this report shows that emu chick was died due to proventricular and gizzard impaction by accumulation of sand and pebbles. Sound management practices to reduce the stress, encourage correct eating habits and avoid access to foreign material could prevent the incidence of impaction.

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