



E-ISSN: 2320-7078

P-ISSN: 2349-6800

JEZS 2019; 7(6): 969-971

© 2019 JEZS

Received: 14-09-2019

Accepted: 18-10-2019

M Bharathidasan

Assistant Professor, Veterinary Clinical Complex, Veterinary College and Research Institute, Tirunelveli, TANUVAS, Tamil Nadu, India

S Kokila

Assistant Professor, Department of Veterinary Surgery and Radiology, Veterinary College and Research Institute, Tirunelveli, TANUVAS, Tamil Nadu, India

M Murugan

Assistant Professor, Department of Veterinary Gynecology and Obstetrics, Veterinary College and Research Institute, Tirunelveli, TANUVAS, Tamil Nadu, India

R Ramprabhu

Professor and Head, Veterinary Clinical Complex, Veterinary College and Research Institute, Tirunelveli, TANUVAS, Tamil Nadu, India

S Dharmaceelan

Professor and Head, Department of Veterinary Surgery and Radiology, Veterinary College and Research Institute, Tirunelveli, TANUVAS, Tamil Nadu, India

Corresponding Author:

M Bharathidasan

Assistant Professor, Veterinary Clinical Complex, Veterinary College and Research Institute, Tirunelveli, TANUVAS, Tamil Nadu, India

Surgical management of egg bound syndrome due to uterine rupture in a desi hen (*Gallus gallus domesticus*): A case report

M Bharathidasan, S Kokila, M Murugan, R Ramprabhu and S Dharmaceelan

Abstract

A one year old Desi hen weighing 1kg was presented with the history of not laying eggs for past 13 days. On clinical examination bird was active, intermittent cloacal straining with inflammation. Cloacal examination failed to palpate the egg. Radiographical examination revealed one fully developed egg in the abdominal cavity. Bird was subjected surgical intervention by mask induction with Isoflurane using customized face mask. Caudal celiotomy incision was made and retrieved single egg in the peritoneal cavity. Uterine tear was identified and sutured with PGA 3-0 in double layer suture pattern. Celiotomy incision was closed as per standard operating procedure. Post-operatively Inj. Enrofloxacin 10 mg/kg and Inj. Dexamethasone 2mg/kg administered for 3 days and sutures removed on 10th day. Bird started laying egg after 30 days post-operatively.

Keywords: Egg bound syndrome, uterine rupture, celiotomy

Introduction

Egg bound syndrome is an emergency life threatening condition in which fully or partially developed egg failed to pass through the oviduct within a normal period of time [1]. Hence it is otherwise called as egg binding or dystocia in hen. Egg bound syndrome is more common in pet birds, broilers and young layers [2]. Predisposing factors of egg binding is multifactorial which includes chronic egg laying (Sudden drop in calcium level), oviduct muscle dysfunction, calcium metabolic disease, deficiencies of vitamin E and selenium, malnutrition, obesity, malformed eggs, mechanical tears or damage to the oviduct, oviduct infections, systemic disease, genetic predisposition and environmental stressors [3]. Rupture of Oviduct may occur secondary to dystocia or oviduct disease [4]. This present case describes the egg bound syndrome due to uterine rupture its diagnosis and surgical management.

Materials and Methods

A one year old Desi hen weighing 1 kg was presented to Clinics, Veterinary College and Research Institute, Tirunelveli, Tamil Nadu, with the history of not laying eggs for past 13 days since its purchase. Clinical examination of the bird revealed wide stance, inflammation of cloaca with intermittent staining. Cloacal examination was failed to palpate the egg and abdominal palpation revealed the presence of egg. Radiological examination confirmed the presence of single shelled egg in the cranial abdomen cavity (Fig 1). Whole blood was collected for hematology and serum biochemical analysis. Haemogram was performed by automated cell counter (3 part celenium junior, Trivitron). Serum biochemical values (Table 1) were measured spectrophotometrically with standard diagnostic kits (Trivitron) by using semi-automated bio chemical analyzer (Lab Mate). The case was decided to surgical intervention since medical intervention is not feasible.

Result and Discussion

General anesthesia was induced by mask induction (Fig 2) using 5% Isoflurane with 100% oxygen supplementation in non-rebreathing circuit and maintained with Isoflurane 1%. Positioned the bird in dorsal recumbency and surgical site was prepared by plucking the feathers followed by scrubbing with antiseptic solution. Celiotomy incision was made over the midline.

A fully developed egg was retrieved from the abdominal cavity (Fig 3) and complete examination of the oviduct revealed no egg and tear noticed in the uterus (Fig 4). Uterus was sutured with PGA 3-0 in double layer suture pattern followed by muscle closed with PGA1-0 and skin closed with Polyamide 3-0 in cross mattress pattern. The bird was able to stand after 30 minutes from disconnecting inhalant anesthesia. Post-operatively Inj. Enrofloxacin 10 mg/kg and Inj. Dexamethasone 2mg/kg administered for 3 days and sutures were removed on 10th day and bird was recovered uneventfully. Multivitamin and calcium supplement were advised to the owner for improve the health status. Bird started laying the egg after 30 days of surgery (Fig 5).

The cause of egg binding is multi-factorial in origin and factors for development of the condition are deficiency of the vitamins and minerals mainly calcium [5]. Egg production requires an increased need for energy, vitamins and minerals, nutritional imbalance and deficiency affects the overall health status of the bird and leads to pathology of reproductive tract [6]. The present case had both deficiency of calcium and phosphorus level which may be a predisposing factor for egg

bound syndrome and the bird was reared in backyard. Uterine rupture may occur due to secondary to dystocia or oviduct disease [1], present case uterine rupture due to chronic nature [7]. Clinical signs of egg binding and dystocia vary according to the severity and size of the condition with presence of secondary pathological conditions [8]. Diagnosis is based on anamnesis, clinical signs, clinical examination, and laboratory analysis, radiography [9] ultrasound and confirmatory diagnosis by laparotomy [10]. Treatments consist of medical or surgical intervention. Egg binding due to oviduct rupture should be corrected surgically. Inhalation anesthesia is numerous advantages over injectable anesthesia like titrated to effect, smooth and rapid induction, quick recovery [11]. Mask induction is best compared to chamber induction in birds. Isoflurane is the most widely used inhalant anesthesia in birds; since it's having least blood gas co-efficient. Uterus sutured with absorbable suture pattern. Post-operatively antibiotics and analgesics should be administered to prevent secondary bacterial infection. Feed supplementation should be addressed to overcome the nutritional deficiencies in birds.

Table 1

Parameters	Observed Value	Reference Value
Haemoglobin (g/dl)	9.4	7-13
PCV (%)	27	22-35
RBC (m/cmm)	6.1	5.5-8.5
WBC (thousands/cmm)	20	12-13
Platelets (lakhs/cmm)	35	20-40
Hetrophils %	65	15-40
Lymphocytes %	35	45-70
Total protein (g/dl)	8	3-4
Albumin (g/dl)	1.2	1-2
Globulin (g/dl)	6.8	2-3
A/G ratio	0.17	0.5-0.7
Calcium (mg/dl)	9.2	20-30
Phosphorous (mg/dl)	2.8	5-6

Conclusion

This present case concludes the successful diagnosis and

surgical management of egg bound syndrome due to uterine rupture in a desi hen.



Fig 1: Fully developed single egg in the abdominal Cavity



Fig 2: Mask induction Isoflurane 5% with 100% oxygen supplementation



Fig 3: Retrieval of fully developed egg from abdominal cavity



Fig 4: Identification of uterine tear



Fig 5: Post-operative Egg Laying

7. Harcourt Brown NH. Torsion and displacement of the oviduct as a cause of egg-binding in four psittacine birds. *Journal of Avian Medicine and Surgery*. 1996; 10(4):262-267.
8. Hasholt J. Diseases of the female reproductive organs of pet birds. *Journal of Small Animal Practice*. 1966; 7:313-320.
9. Saranya K, Prathaban S, Senthil Kumar K, Mohamaed Shafiuzama, Srithar A. Radiographic diagnosis of egg binding syndrome in a cockatiel. *Global Journal of Bioscience and Biotechnology*. 2017; 6(4):713-714.
10. Bennett RA, Harrison GJ. Soft tissue surgery. In Ritchie BW, Harrison GJ, Harrison LR (eds): *Avian Medicine: Principles and Application*. Brentwood, TN, HBD Int'l, Inc, 1999, 1125-1131.
11. Miller W, Buttrick M. Current anaesthesia Recommendation for companion birds. *Iowa State University*. 1999; 61(2).

Acknowledgement

The authors are thankful to the Directorate of Clinics, TANUVAS and the Dean, Veterinary College and Research Institute, Tirunelveli for the support and facilities provided for the study.

References

1. Harrison GJ, Lightfoot TL. Clinical avian medicine. In Bowles HL Chapter 18: Evaluating and treating the reproductive system. Spix Publishing, Inc. Palm Beach, FL, USA, 2006, 519- 540.
2. Muthulaksmi M, Susitha R, Rajkumar RS, Muthukumar M. Incidence of egg bound syndrome in culled commercial layer. *Proceedings of XXIX of Indian Poultry Science Association, Hyderabad*. 2012; 5-7:138.
3. Romagnano A. Avian obstetrics. *Seminar in Avian Exotic Pet Medicine*. 1996; 5:180-188.
4. Crespo R, Shivprasad HL. Developmental, metabolic and other noninfectious disorders. In: Saif YM, (Ed.). *Diseases of Poultry*, 11th Edn. USA: Iowa State Press, Blackwell Publishers, 2003, 1231.
5. Rosen LB. Topics in Medicine and Surgery, Avian Reproductive Disorders. *Journal of Exotic Pet Medicine*. 2012; (21):124-131.
6. Joy B, Divya TR. Egg bound and vent prolapse in chicken - A review of two cases. *Bangladesh Journal of Veterinary Medicine*. 2014; 12(1):91-92.