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Surgical management of abdominal hernia in Pigeon (Columba livia)

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ABSTRACT

Umbilical hernias are often described in ruminants but Reports of typical literature are not available in ventral abdominal hernias in birds especially in pigeons. Abdominal hernias have been pigeon-holed as a parting in the aponeurosis of the abdominal musculature on the ventral midline where the purpose of this case report is to give an overview of the diagnosis and surgical approach of ventral abdominal hernia in pigeons. Five male King breed pigeons of different ages (4 months – 12 months) and weights (200grams – 500grams) were presented to SAQ Teaching Veterinary Hospital, CVASU from January/2017 to July/2020 with the common history of gradual swelling in the ventral abdominal region. The clinical and radiographic examination confirmed the ventral abdominal hernia and decided for surgical correction. With standard aseptic procedure and 1% lidocaine anesthesia, coeliotomy was performed in all cases. Postoperatively antibiotic, ciprofloxacin was administered intramuscularly for 7 days at the dose rate of 10 mg/kg body weight and monitored until wound healing. The follow-up study for 1 month revealed no complications. The result of this case study recommends that this approach can be used as a curative method for ventral abdominal hernia repair in pigeons.

Keywords: Surgical, Hernia, Pigeon.

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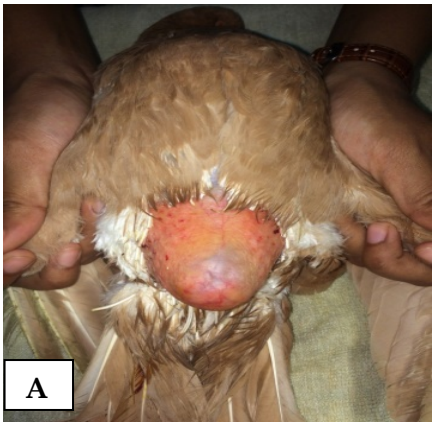
Introduction

Hernia could be a projection of the contents of a body cavity concluded a feeble plug of the body wall. Hernia within the abdomenal wall has been reported in several species of mammals. In infield the practice of, herniation is incredibly common in calves (Sutradhar *et al*., 2009) and also the ventral abdominal hernia has also been reported in some avian species like turkey, myna, duck (Dar *et al*., 2016). Hernias are frequently related to the weakening of the abdominal musculature caused by egg-laying, egg binding, or hyperestrogenism. Occasionally, herniation occurs secondary to abdominal lipoma, cystic structures, neoplasia, or other space-occupying masses, It is going to be associated with either sex include trauma, straining, breeding, hormonal influences (Smolec *et al*., 2009).

Female ducks are more at risk of abdominal hernia because of hormonal influences causing weakness of abdominal muscles (Dar *et al*., 2016). Abdominal hernias in birds aren't true hernias because there is no opening within the aponeurosis of abdominal muscles and typically there is no hernia ring. Surgical repair by herniorrhaphy is indicated when the bird is clinically normal. This paper represents the surgical outcome of the ventral abdominal hernia of pigeon in five cases.

Case History and observations

From January 2017 to July 2020 total number of five king pigeon breeds were presented to Teaching Veterinary hospital, CVASU with different age (4 months to 12 months), weight (200 gms to 500 gms) respectively having a history of gradual swelling in the ventral abdominal region with lethargy and loss of appetite. Clinical examination revealed spherical painless, reducible swelling extending from the keel to the pubic bones. The cases were subjected to radiography to identify any other abnormality in the abdominal region. On the basis of clinical and radiographic records, the present cases were diagnosed as ventral abdominal hernias and decided for surgical correction.



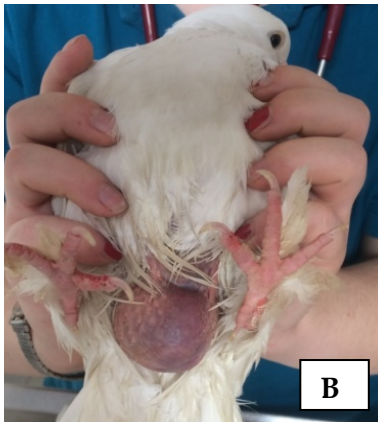


Fig: 1. Ventral abdominal hernia in king breed of pigeons (A&B), Fig: 2. Hernial diagnosis using radiography

Treatment and Discussion

The surgical area was prepared by plucking the feathers and placed the birds on the operation table in ventrodorsal position manually. Ring block anesthesia surrounding the swelling was performed by diluting the 2% plainlidocaine which was converted to 1% lidocaine. The skin was prepared for an aseptic operation using 10% povidone-iodine solution and 70% alcohol. The skin was the only hernia sac structure holding the content of abdominal organs as the hernia sac. The abdominal wall was ripped off through the aponeurosis of the abdominal musculature known as the lineaalba. The ileum and cecum were the most participant contents of the hernial sac with no adhesion or other complications. All contents were returned back into the abdominal cavity. The hernia ring (the line of lineaalba) was sutured by a simple continuous suture pattern using No. 5/0 catgut. Then the skin was sutured in a similar pattern using the same suture material. Postoperatively all birds were treated by ciprocin antibiotic for 5 days intramuscularly and meloxicam for 1 day at the same route as well as advice was given to the owner restricted food and movement for at least 1 week. Instruction is also given to apply locally povidone-iodine cream. Postoperatively all surgical wounds were healed within 5- 8 days without any complications. All cases were followed up for 3 months through mobile communication that revealed further no complications. Abdominal hernia in king breed of pigeon has been successful surgical correction with 1% lidocaine (2mg/kg BW) without complication. This method is safe for pigeon hernias.

Reports of abdominal hernias in birds are somewhat unclear (Dar *et al*., 2016). An avian abdominal hernia is dissimilar to a mammalian hernia. There is no specific hernia ring, but instead, there is a thinning and gradual separation of muscle fibers, therefore surgery to pull the sides of the deficit together is not possible and salpingohysterectomy at the time of hernia repair is recommended (Forbes, 2002) Affected birds are most commonly middle-aged to older hens with variable degrees of abdominal swelling. Skin ulceration and hemorrhage can also occur as complications. (Barboza *et al*., 2018).

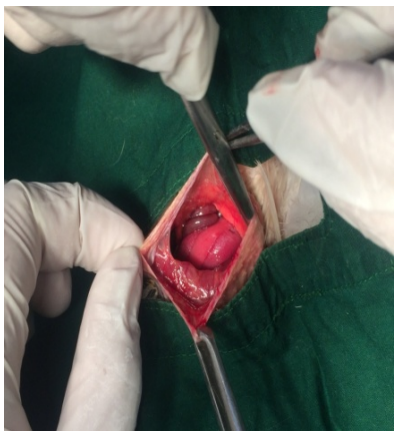


Fig: 3. Local anaesthesia using ring block pattern, Fig: 4. Hernial ring and content Fig: 5. skin suturing after herniorraphy

An abdominal hernia is encountered most commonly in obese female psittacines, especially cockatoos and budgerigars (Forbes, 2002). The present study on this abdominal protrusion in male Columba livia returned a diagnosis of abdominal hernia. Previously, abdominal or umbilical hernias also mention a flock problem in turkey poults (Amer et al., 2017).

Conclusion

Hernioraphy is a safe and effective for the repair of abdominal hernia when presented at earlier stage procedure in birds under 1% lidocane anaesthesia.

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