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ABDOMINAL ABSCESS DUE TO *STAPHYLOCOCCUS AUREUS* INFECTION IN AN ADULT FEMALE NEW-ZEALAND WHITE RABBIT: POSTMORTEM FINDINGS: A CASE REPORT

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ABSTRACT

Carcass of a New-Zealand white rabbit doe weighing 3kg was presented to the Animal Health Unit of a livestock farm for post- mortem examination with the chief complaints of an out-growth at the ventral abdomen and sudden death on the course of treatment. History revealed that, there were 165 rabbits in the flock out of which one was affected. The rabbit became anorexic and bearing some lumps at the ventral abdomen for three weeks prior to death during which period it was under treatment with ivermectin® (avermectin H_2B1_a and avermectin H_2B1_b from Streptomyces avermetilis 0.5 ml/50 kg subcute) and Penstrep® (penicillin G procaine 300, 000 I.U. with methyl paraben 1.00mg and propyl paraben 0.10 mg at dose rate of 6000 I.U. per kg of body weight or 1ml/50 kg i.m). Postmortem findings showed a subcutaneous abdominal lump growth just ventral to the sternum which measured 4×5 cm, nodular in shape and hard on palpation with thick pus confirmed by aspiration. Culture and sensitivity of the pus swab revealed heavy growth of *Staphylococcus aureus* that was sensitive to erythromycin®. The conditioned was diagnosed as abscess due to *Staphylococcus aureus* infection.

Key words: New-Zealand white, rabbit doe, abscess, *Staphylococcus aureus*, infection.

INTRODUCTION

An abscess is a localized collection of thick, creamy or dried-out pus, surrounded by a capsule of scar tissue contained within a fibrous capsule (Gaetner, 1991). Abscesses are associated with a combination of pain, swelling, loss of function, tissue destruction, and/or organ system dysfunction. Pus is composed of neutrophils, a type of white blood cell involved in infection and inflammation, fluid, and cellular debris that results from accumulation of dead cells from the battle to fight the infection (Perpinan, 2009). The abscesses usually increase in size over a period of days to weeks and are relatively painless. Abscesses can occur in rabbits of any age and breed. Abscesses can either be slow-growing or become large rapidly and do not rupture and drain unlike in cats and dogs (Segura, 2007). Although abscesses in rabbits develop most commonly in the head and limbs, they may occur anywhere on the body such as skin, tooth roots and bone and may extend aggressively into surrounding soft tissue and bone. Abscesses with bony involvement can be very difficult to treat, and require surgical intervention and prolonged medical care with a fair to poor prognosis depending on the severity

and location (Susan, 2012). Rabbit abscesses can be external (in the skin or under the skin, or associated with the face/jaw, abdomen or joints) or internal (in the nasal passages, in the area behind the eye, in the ear, or in the abdominal or chest cavities) (Oglesbee, 2011).

CASE HISTORY AND CLINICAL EXAMINATION

Carcass of a New-Zealand white rabbit doe weighing 3kg was presented to the Animal Health Unit of a livestock farm for post-mortem examination with the chief complaints of an out- growth at the ventral abdomen and sudden death on the course of treatment. History revealed that, there were 165 rabbits in the flock out of which only one affected. The rabbit became anorexic and wearing some lumps at the ventral abdomen for three weeks prior to death during which period it was under treatment with ivermectin® (avermectin H_2B1_a and avermectin H_2B1_b from Streptomyces avermetilis 0.5ml/50kg subcutaneously and Penstrep®**)** (penicillin G procaine 300, 000 i.u with methyl paraben 1.00mg and propyl paraben 0.10mg at dose rate of 6000 i.u per kg of body weight or 1ml/50kg i.m).

POSTMORTEM EXAMINATION

Postmortem findings showed a subcutaneous abdominal lump growth just ventral to the sternum which measured 4×5cm, nodular in shape and hard on palpation with thick pus following aspiration. Culture and sensitivity of the abscess biopsy and pus swab revealed heavy growth of *Staphylococcus aureus* that is sensitive to erythromycin®. The conditione was diagnosed as abscess due to *Staphylococcus aureus* infection.

DISCUSSION

According to the history, there were 165 rabbits in the flock and hence overcrowding (due to poor stocking density), which might have led to cannibalism and potential trauma to the skin with subsequent secondary bacterial infections. Other predisposing factors to abscess could be attributed to poor health and husbandry practices. Abscess may also result as secondary complication to ingestion of sharp foreign bodies that can perforate the intestine and facilitate the formation of an abscess on the intestine and serosa or a piece of hay that lodges in the nasal cavity (Oglesbee, 2011). Abscess may occasionally originate from other conditions such as cancer or hematogenous/lymphatic spread from other abscesses (particularly in the head) as well as complication of abdominal surgery with compromised sterility (Perpinan, 2009). Abscesses on the rest of the body are often result from trauma, puncture, or bite wounds, abrasions, foreign bodies, skin boils (furunculosis), or bone infections (osteomyelitis) (Segura, 2007). Dwarf and lop-eared rabbits are predisposed to abscesses caused by dental disease (Susan, 2012).

Risk factors (Oglesbee, 2011)

Risk factors for the formation of an abscess are determined by the organ system and/or tissue affected. The following organs and tissues are listed with their risk factors:

i. Around the eyes (peri-orbital), jaw, cheeks and nose; often caused by feeding of diets containing inadequate roughage (not enough hay); tooth trauma from inappropriate trimming of teeth or blunt trauma from falling or being dropped.
ii. Brain due to internal or middle ear infection, sinus infection; chronic nasal infections extend via eustachian tube to middle/inner ear.
iii. Skin due to abrasions and puncture (bite) wounds.
iv. Feet (sore hocks) due to improper surfaces (wire cages, non-padded surfaces),
v. Lung due to bacterial pneumonia and foreign object aspiration
vi. Mammary gland due to mastitis

vii. Suppression of the immune system due to systemic or topical corticosteroid use, chemotherapy, underlying predisposing

viii. disease (e.g., diabetes mellitus, chronic renal failure)



Plate I: A subcutaneous abdominal abscess just ventral to the sternum.



Plate II: A 4×5cm subcutaneous abdominal abscess.

CONCLUSION

Poor stocking density is one of the bad husbandry practices in rabbit production that could leads to Overcrowding which in turn leads to cannibalism resulting to trauma with subsequent secondary bacterial infection and abscesses.

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