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Generalized subcutaneous emphysema in a crossbred doe

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Abstract

A case of generalized subcutaneous emphysema in a crossbred doe followed by pin hole perforation of trachea resulted by dog bite was treated by removing the air with the help of a syringe needle (16 gauze) along with antibiotic and post exposure ARV therapy. The doe recovered completely after 9th day post-treatment.

Keyword: Subcutaneous emphysema, trachea, Anti Rabies Vaccine, 16 gauze

Introduction

Subcutaneous emphysema is a condition when gas or air is present in the subcutaneous layer of the skin. It occurs mostly due to the accidental or intentional skin wounds, thoracic trauma with lung perforation, infection with gas-forming bacteria resulting cellulitis and as a sequel to pulmonary emphysema or perforating injuries of the abdominal viscera (Blood *et al.* 1983) ^[1]. Trauma in the trachea leading to its perforation (Tangner and Hedlund, 1983) ^[3] or esophageal rupture (Rogers *et al.*, 1972) ^[2] may also attribute to subcutaneous emphysema. Such a case of generalized subcutaneous emphysema in a female adult doe and its treatment is presented.

Case History and clinical findings



Before Treatment

A four (4) years old crossbred (Beetal x Assam Hill Goat) doe was presented to the Goat Research Station, Assam Agricultural University, Burnihat, Assam with generalized swelling all throughout the body, open mouth breathing, lethargy and stiff gait. The owner reported that the goat was bitten by a street dog last night and they have washed the wound with caustic detergent and thereafter applied turmeric powder. On examination, the animal was lethargic and reluctant to move. Several pinhole size wounds were observed in the lateral and ventral neck as well as in the chest region. Diffused swelling was observed all throughout the body starting from head, neck, limbs, thorax, abdomen and even in the conjunctiva. On palpation the swelling was soft, puffy, crepitating, painless and mobile.

Rectal temperature was recorded to be 102.40F. Heart and lung sound was inaudible on auscultation due to the accumulation of excessive gas. The needle punctures on the swelling releases free gases. On close examination deep pinhole sized four bite marks were notice in the neck region just over the trachea and it was suspected to be tracheal perforation leading to accumulation of gases in sub cutis.

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Treatment

As the swelling is extensive it was decided to remove the air by inserting 16 gauze syringe needles beneath the skin in the swollen areas. The therapy includes a single dose of tetanus toxoid intramuscularly followed by first dose of post bite Anti Rabies Vaccine, which is continued as per post bite vaccination protocol. The antibiotic therapy with Ciprofloxacin (Cflox power @ 5mg per Kg body weight) for 5 days along with injection of antihistaminic (Avinil @ 3ml) for 3 days and NSAID (Maxxtol @ 2mg/Kg body weight) as a single dose was given. On 2nd day the swelling reduced to some extent and the respiration was almost normal. The subcutaneous emphysema had resolved completely on 9th day after treatment. The doe became completely normal and was inseminated after one month post-treatment.



After Treatment

Discussion

Subcutaneous emphysema manifests after accumulation of air or gas in the subcutaneous layer of the skin. Air can enter the skin tissue in various ways (skin wounds, perforation of trachea, thoracic trauma with lung perforation and infection with gas forming bacteria). These conditions generally results in painless swelling of the face, neck, abdomen followed by crepitus. Subcutaneous emphysema is not life-threatening by itself, but, if the amount of air is large, it can interfere with breathing and cause discomfort to the animal.

Gas gangrene is also a cause of subcutaneous emphysema, but in the present case the same was ruled out as there was no sign of toxemia.

From the present case we can infer that subcutaneous emphysema followed by pin hole perforation of trachea resulted by dog bit can be amicably cured by removing the air with the help of a syringe needle (16 gauze) along with antibiotic and post exposure ARV therapy.

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