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## A case report on subcutaneous emphysema in Vanaraja Chicken

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### Abstract

An eight week old Vanaraja pullet was presented with the history of swelling all over the foot body. On examination a known but rare case of subcutaneous emphysema was diagnosed. Subcutaneous emphysema is known as a disorder caused by air escaping from the respiratory system (air sacs, lungs and trachea) and the air accumulates in the subcutaneous and inflates the skin. Surgical management with simple use of needle punctures or nick incision over the skin and subcutaneous tissue can relieve the pain and treat the condition of the bird. Post surgical intervention, oral antibiotic along with B complex supplements resulted in complete recovery within a day.

**Keywords:** Emphysema, pullet, subcutaneous, vanaraja, chicken

### Introduction

Accumulation of gas under the skin is called as 'subcutaneous emphysema' or 'wind puff' [3, 4, 5]. Subcutaneous emphysema when not extensive does not bring about any ill effects. But sometimes it might involve certain gas forming bacteria which may subsequently lead to necrosis and gangrene formation over the subcutaneous tissues and sometimes may lead to death of the bird. The mechanism in all cases is similar. Puncture wounds and cuts involving layers of skin and muscles do not stay immediately opposite one another, since the layers slide over each other during movement (Kamani *et al.* 2009) [1]. If the surface layer is concave and its elasticity allows it to lift, then air is drawn in. The air is then trapped and is pushed on the easiest course, which is along the plane between the skin and muscle or between layers of muscles. This type of emphysema is harmless but can be alarming to the owner when the bird blow up to misshaped body structure within few hours.

### Case history and clinical findings

An eight week old Vanaraja pullet was presented with the history of swelling all over the foot body along with staggering gait, ruffled feathers, and dull appearance (Fig 01). On palpation revealed accumulation of air below the subcutaneous skin. The bird was dehydrated with rough frizzled feather coat all over the body. Based on the history and clinical findings this case was tentatively diagnosed as subcutaneous emphysema.

### Treatment and discussion

The bird was restrained carefully and with complete aseptic measures several punctures with caution were given over the skin and subcutaneous tissues dependent part of the body using a sterile subcutaneous needle avoiding any injury to the internal organs. The accumulated gases below the subcutaneous skin were removed by squishing out gently. Post operatively Povidone Iodine ointment was applied over the punctured areas to avoid any infection and subsequently Meloxicam liquid and Vendox-N (Doxycycline + Neomycin) powder was administered through drinking water twice daily for three days along with multivitamin supplement. The chicken was recovered without any further complication within 2 days.

The condition is rarely observed in commercial poultry flocks now-a-days due to improved management systems [1]. The gas is usually air, which has penetrated the subcutaneous tissues through a skin wound or as the result of damage to part of the respiratory system [5]. Emphysema can also arise when certain gas-forming of gas anaerobic bacteria related to those which cause gangrene, multiply in a deep and therefore airless wound.

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Such changes are preceded by obvious illness and loss of function of the part concerned, it showing reddish, green or black discoloration associated with coldness and insensitivity <sup>[2]</sup>. In the present case, the etiology of subcutaneous emphysema was unknown while early detection and proper management results in effective recovery of such cases.



**Fig 1:** Subcutaneous emphysema in chicken

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